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DRAFT Record of Decision
for
North Billings County Allotment Management Plan Revisions

U.S. Forest Service, Northern Region
Dakota Prairie Grasslands
Medora Ranger District
Billings and Golden Valley Counties, North Dakota

Responsible Official

Dennis D. Neitzke
Grasslands Supervisor

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EXECUTIVE SUMMARY

This document is the Record of Decision (ROD) for the *North Billings County Allotment Management Plan Revisions Final Environmental Impact Statement* (FEIS). North Billings is an assembly of 43 grazing allotments on the portion of Dakota Prairie Grasslands that is managed by the Dakota Prairie Grasslands Medora District Office in association with the Medora Grazing Association (MGA). The North Billings County Allotment Management Plan Revisions Project (a.k.a., North Billings Project) covers an area of approximately 87,262 acres of National Forest System lands, of which roughly 70,871 acres are capable of sustaining grazing. The North Billings Project affects 35 members, or about 29% of the membership, of the MGA.

The *North Billings County Allotment Management Plan Revisions Environmental Impact Statement* (EIS) evaluated five alternatives for livestock grazing on the Medora Ranger District, Little Missouri National Grassland, Billings and Golden Valley Counties, North Dakota. Based on the analysis displayed in the FEIS, extensive public input, and conversations with several professional range management specialists, I have decided to implement an aggressive adaptive management model. The model will utilize the analysis of existing conditions, the goals for healthy grassland ecology, and the management techniques outlined and analyzed in the FEIS to develop an allotment-specific management plan.

This decision will provide an allotment-by-allotment, specific "Forest Service" Implementation Plan. This will include the goals for each allotment, the management techniques to be used to reach those goals, and a monitoring plan to determine whether progress is being made toward meeting those goals. However, in light of imperfect science and in the spirit of cooperative management, I will invite and encourage the MGA to utilize the full range of management techniques to develop an "Association" Implementation Plan for each allotment. Similar to the Forest Service plan, the Association's plan would utilize the objectives outlined for each allotment, the management techniques, and a monitoring plan. Outlined in the Decision section of this ROD are the criteria for an acceptable implementation plan, and, when fitting with those criteria, either plan may be implemented.

My response to the specific comments the public submitted for my consideration are contained in Appendix F of this document.

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ACRONYMS

AM	animal month
AMP	allotment management plan
AOI	annual operating instruction
AUM	animal unit month
CFR	Code of Federal Regulations
DBH	diameter at breast height
DEIS	draft environmental impact statement
DFC	desired future condition
DPG	Dakota Prairie Grasslands
EIS	environmental impact statement
FEIS	final environmental impact statement
FSH	Forest Service Handbook
IDT	interdisciplinary team
LMNG	Little Missouri National Grassland
MGA	Medora Grazing Association
MIS	management indicator species
NDSU	North Dakota State University
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NFS	National Forest System
PFC	proper functioning condition
ROD	record of decision
SCS	Soil Conservation Service
SDEIS	supplemental draft environmental impact statement

SRT	Scientific Review Team
TRNP	Theodore Roosevelt National Park
USDA	United States Department of Agriculture
VOR	visual obstruction reading

DRAFT Record of Decision for North Billings County Allotment Management Plan Revisions

U.S. Forest Service, Northern Region
Dakota Prairie Grasslands
Medora Ranger District
Billings and Golden Valley Counties, North Dakota

BACKGROUND

The Medora Ranger District encompasses approximately half of the 1,026,000 acres of National Forest System (NFS) lands that compose the Little Missouri National Grassland (LMNG) located in western North Dakota. Since the LMNG was created, the United States Department of Agriculture (USDA) Forest Service and the Medora Grazing Association (MGA) have been cooperatively managing livestock grazing in Billings and Golden Valley Counties where the North Billings County Allotment Management Plan (AMP) Revisions Project (a.k.a., North Billings Project) is located. This cooperative management is outlined in the *Grazing Agreement and Rules of Management Between Medora Grazing Association and United States Department of Agriculture Forest Service for the Period of 2009–2/28/2019* (Grazing Agreement) (USDA Forest Service 2009a). The Grazing Agreement is the instrument that permits livestock grazing on NFS lands within the counties associated with this project. The Grazing Agreement identifies the terms and conditions under which MGA administers permits for individual MGA members to graze livestock within an allotment. Grazing allotments can be, and usually are, made up of a combination of NFS, state, and private lands.

The *Dakota Prairie Grasslands (DPG) Land and Resource Management Plan* (Grasslands Plan) (USDA Forest Service 2002a), developed through the Northern Great Plains Plan Revisions effort, outlines several goals for reaching healthy grassland ecology, while also providing for an appropriate level of multiple uses for the American public (Grasslands Plan, Chapter 1). Appropriate multiple use in this situation includes protecting water quality (Clean Water Act); preserving archeological and paleontological resources (Archaeological Resources Protection Act and Paleontological Resources Preservation Act); protecting and enhancing habitat for rare, threatened, and endangered plants and animals (Endangered Species Act); ensuring our actions do not lead toward substantial decline of native plants and animals; properly administering the surface use during mineral extraction (Minerals Leasing Act for Acquired Lands of 1947 and Federal Onshore Leasing Reform Act of 1987); and providing appropriate recreational opportunities for the American public (Multiple-Use Sustained-Yield Act of 1960).

The Grasslands Plan was amended relative to livestock grazing in 2006, including a "Demonstration" provision (USDA Forest Service 2006a). The Demonstration outlined a strategy where the grazing associations and USDA Forest Service would work cooperatively to

develop proposed actions for decisions to change the AMPs within each association. Important to the 2006 Livestock Grazing Record of Decision (ROD) (USDA Forest Service 2006a) was the involvement of a "Scientific Review Team" (SRT). An independent group of scientists was assembled to review the livestock portion of the Grasslands Plan. Issues were grouped in eight study areas with the results of that study presented May 20, 2005. Those results and the USDA Forest Service response were included in the 2006 ROD and are incorporated into this decision. Some of the critical findings that are part of this decision are baseline data needs, actual use data, and appropriate monitoring. Partnerships between the USDA Forest Service, MGA, and North Dakota State University (NDSU) were developed to gain NDSU's experience in assessing baseline range conditions. NDSU collected baseline vegetation data that were used in conjunction with data collected by the USDA Forest Service in evaluating current vegetative conditions. Actual use and monitoring protocols are outlined within the Decision section of this ROD.

Implementation of the 2006 Demonstration strategy began within the project area on July 6, 2005, when the Medora Ranger District met with the MGA board of directors to discuss the need to meet with permittees within each allotment to discuss specific issues. The first of those meetings was held in November 2005, with a second round between May and July 2006 and a third round of meetings in November 2007 (see the summary of MGA meeting in Appendix A).

Upon completion of the MGA meetings, the Medora Ranger District prepared an environmental impact statement (EIS) to evaluate the effects of livestock grazing for the 43 allotments. On July 10, 2009, the *Draft Environmental Impact Statement North Billings County Allotment Management Plan Revisions* (DEIS) (USDA Forest Service 2009b) was published for public review and comment. Based on the comments on that draft, further analysis was completed and published as the *North Billings County Allotment Management Plan Revisions Supplemental Draft Environmental Impact Statement* (SDEIS) (USDA Forest Service 2011), made available to the public (Notice of Availability published in the *Federal Register* on July 8, 2011).

Information from this decision will be used to complete AMPs for each of the 43 grazing allotments in this project. The grazing permits issued by MGA to each of its members will annually authorize use based on my decision. The annual operating instructions (AOIs) will implement the provisions of the AMP specific to that allotment.

I am the official responsible for this project. My authority has been delegated by the U.S. Secretary of Agriculture, who is tasked with the management of all National Grasslands. The *North Billings County Allotment Management Plan Revisions Final Environmental Impact Statement* (USDA Forest Service 2013) and the supporting project record are available for review at the USDA Forest Service's Medora Ranger District Office, 99 23rd Ave. W., Suite B, Dickinson, ND 58601, phone (701) 227-7800.

PROJECT AREA

The North Billings County AMP Revisions (North Billings) Project is located in western North Dakota—in Billings County and a small portion of Golden Valley County—about 14 miles northwest of Belfield, North Dakota. The project area is made up of the 43 grazing allotments associated with this project (see Figure 1). Together, the allotments comprise 117,229

acres, of which 87,262 are NFS lands, 26,542 acres are private lands, and 3,425 acres are state lands.

HISTORY AND CURRENT ROLE OF THE PROJECT AREA

The NFS lands that compose the project area were once in the public domain and owned by the United States. Those lands were subsequently sold to settlers under provisions of the Homestead Act, primarily between 1880 and 1910. Often the parcels sold to settlers were divided into 160-acre plots similar to eastern standards for farming. However, in the semi-arid climate of western North Dakota and heavy soil situation, this acreage could potentially only support up to five cows—not enough for a family to live on.

By the late 1920s, portions of the project area had been plowed or heavily grazed. As a result, the land was particularly vulnerable to erosion during the ecological disaster of the 1930s known as "The Dust Bowl." The effects of the Dust Bowl in combination with the concurrent economic disaster of "The Great Depression" resulted in many settlers deciding to abandon or sell their farms.

Beginning in the early 1930s, the government repurchased the degraded farmland and rangeland through the "Land Utilization Program." In 1938, the newly formed USDA Soil Conservation Service (SCS) was assigned the task of reclaiming those lands. One of the primary techniques used was seeding the land with grasses particularly suited to aggressive establishment under semi-arid conditions. A species of choice was crested wheatgrass, an exotic cool-season grass native to Eurasia.

In 1954, the SCS had very successfully stabilized the grasslands, and because the SCS was not a land management agency, these public lands were turned over to the USDA Forest Service for permanent management. In 1960, the U.S. Secretary of Agriculture designated the lands within the project area as part of the LMNG. The LMNG is one of four National Grasslands administered collectively as the DPG.

Federal law outlines how all NFS lands, including the DPG, are managed for multiple uses on behalf of all of the American people. These uses may include such activities as berry-picking, biking, birding, camping, fishing, hiking, horseback riding, hunting, livestock grazing, and oil and gas development. Not all use activities are completely compatible with each other, which raises the question of how such uses should be balanced. The National Forest Management Act of 1976 (NFMA) requires the development of a strategic plan (i.e., about every 10 to 20 years) that includes public involvement and where resource goals and objectives are outlined in the Grasslands Plan (USDA Forest Service 2002a).

The most recent revision of the Grasslands Plan was adopted in 2002 (in part) (USDA Forest Service 2002a; USDA Forest Service 2002b), 2003 (in part) (USDA Forest Service 2003), and 2006 (in part) (USDA Forest Service 2006a). Compared to the earlier Land and Resource Management Plan of 1986, the most recent version increased the emphasis on grassland conservation and restoration. This revision was completed after an exhaustive 11-year process that generated thousands of pages of analysis, dozens of public meetings, and tens of thousands of public comments.

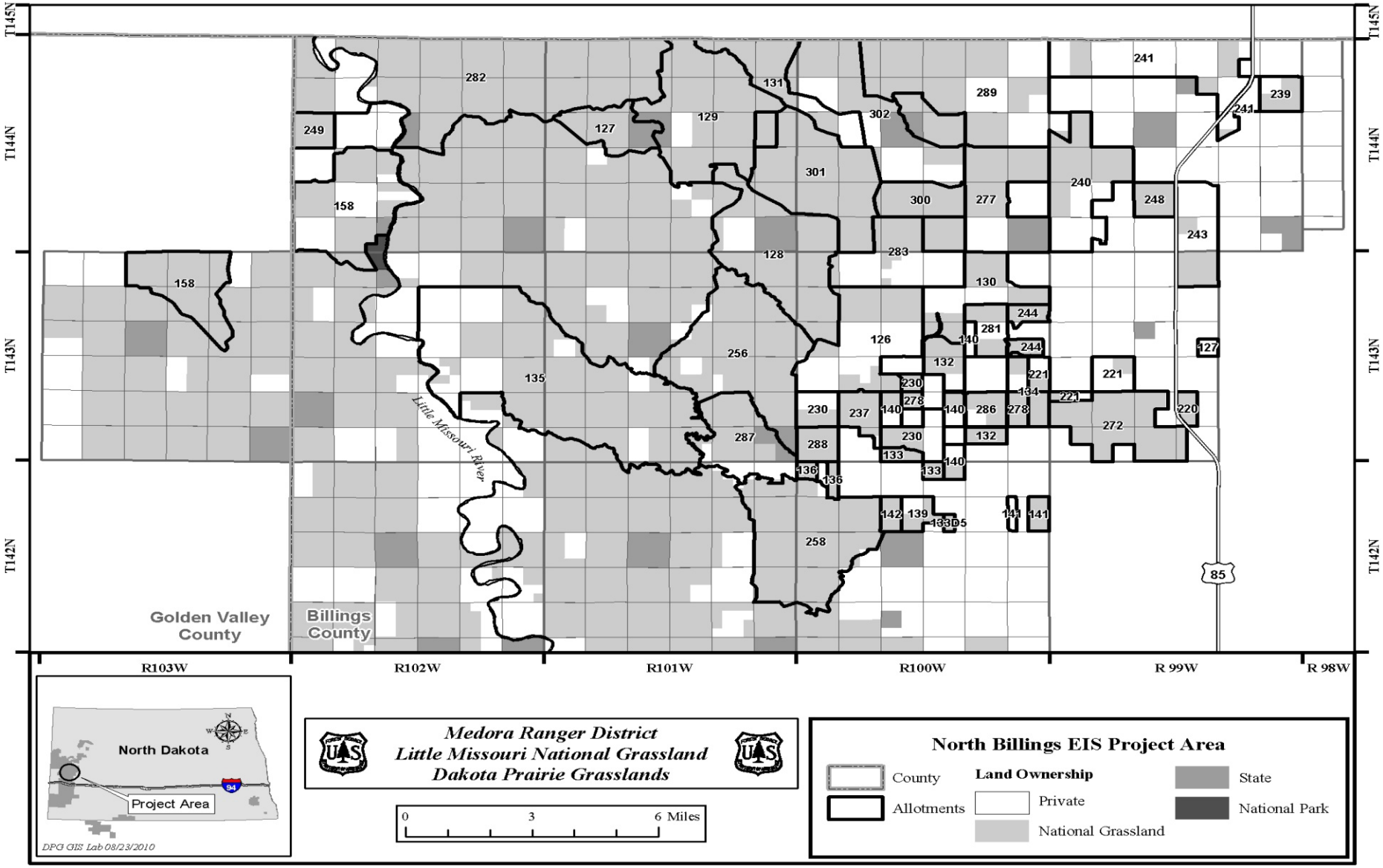

Figure 1. Grazing allotment locations.

PURPOSE AND NEED

The *Forest Service Handbook* (FSH) (USDA Forest Service 2005), guides rangeland allotment management planning, and the process calls for periodic reviews of allotment conditions and management practices. The *Code of Federal Regulations* (CFR), Title 36, Part 222.2(c) states, "Forage producing National Forest System lands will be managed for livestock grazing and the allotment management plans will be prepared consistent with land management plans." AMPs for the 43 allotments date from the 1970s and 1980s. They were prepared prior to the issuance of the *Record of Decision for Dakota Prairie Grasslands Final Environmental Impact Statement and Land and Resource Management Plan* (USDA Forest Service 2002b). The underlying Needs for this project include:

- Some resources are not at desired future condition (DFC) as identified by the Grasslands Plan (USDA Forest Service 2002a). There is a need to meet or move toward DFC for those affected resources in accordance with Grasslands Plan (pp. 1-2, 1-3) direction while allowing grazing on suitable lands and supporting local families and communities.

- Specific resource areas that need to be addressed within this analysis and decision are riparian condition (not currently meeting proper functioning condition [PFC]), woody draws (lacking appropriate hardwood regeneration), seral condition (not meeting the plant composition of a native prairie), and grassland structure (lacking the desired composition of low, medium, and tall structure of herbaceous vegetation).

- There are overall needs (a) for greater management flexibility to meet the Grasslands Plan resource goals and objectives and to cope with fluctuations in environmental and social conditions, including, but not limited to, annual changes in weather, (b) to be responsive to permittee requests for reasonable operational adjustments, and (c) to respond to unforeseen or changing issues.

The project-specific need for action is created by the disparity between what is present (existing condition) and what is wanted (desired condition) for each resource. The specific action Needs for each allotment in this analysis are summarized in Chapter 3 of the FEIS (USDA Forest Service 2013).

Therefore, this project was initiated to not only comply with federal laws and regulations but to improve on-the-ground conditions. See Chapter 3 of the FEIS for a detailed review of existing resource conditions.

THE DEMONSTRATION PROJECT

Before the National Environmental Policy Act (NEPA) phase of this project was initiated in May 2008, considerable effort had already been invested under an earlier phase of project planning. Traditionally, the development of a proposed action is completed by USDA Forest Service personnel. The Livestock Grazing ROD (USDA Forest Service 2006a), however, established the "Demonstration Project" (Demo).

The principles of the Demonstration Project were becoming clear before the 2006 ROD was signed and the Medora Ranger District began involving MGA with this planning process in May

of 2005. First, the Medora Ranger District approached MGA board of directors to help them gain an understanding of the project area, the resource issues, and how the district's planning processes worked. The board of directors was then asked how they wanted to engage the individual association members, and the directors suggested that the USDA Forest Service work with individual members of each allotment. A series of three meetings was held to collaborate with the members on issues and management techniques. During the interim between member meetings, the USDA Forest Service staff met with the board of directors to update them and plan the next steps.

A detailed description of that effort can be found in Appendix A of the FEIS (USDA Forest Service 2013) and Appendix A of this ROD. Appendix A from the FEIS details the creation of Alternative 3, the proposed action, and Alternative 3A, which was created in response to MGA's DEIS comments on Alternative 3.

PUBLIC INVOLVEMENT

Public input is an essential component of public land management. Public input is especially helpful at two points in project planning: (1) at the very beginning of the project, during the "scoping phase," when respondents help define the issues and alternatives that should be addressed during analysis, and (2) during the comment period, when respondents provide feedback on the completed analysis.

A Notice of Intent to prepare an EIS for the North Billings County AMP Revisions Project was published in the *Federal Register* on May 15, 2008 (73 FR 28098). In addition, the proposed action was listed in the January 2008 DPG Schedule of Proposed Actions (SOPA) and updated periodically during the environmental analysis. People were invited to review and comment on the proposal through a variety of different avenues.

A scoping letter was sent to 103 interested parties on May 23, 2008. The letter asked that comments on the proposed action be received by June 23, 2008.

The USDA Forest Service held public open house meetings on June 17, 2008, in Dickinson, North Dakota, and on June 18, 2008, in Bismarck, North Dakota. News releases announcing the open houses were sent to the *Bismarck Tribune*, which is the DPG's newspaper of record; the *Dickinson Press*; the *Bowman County Pioneer*; the *Herald*; and the *Golden Valley News*. An announcement was also sent to the televised community calendars in Dickinson and Bismarck, North Dakota.

The DEIS (USDA Forest Service 2009b) was mailed to a total of 66 individuals, groups, and federal, state, and county agencies on June 30 and July 1, 2009. Chapter 4 of the DEIS lists the agencies, organizations, and people who received copies of the DEIS. A news release announcing the release of the DEIS was sent to the *Bismarck Tribune*, six other daily newspapers, and numerous radio and television stations on July 1, 2009. The Notice of Public Comment for the DEIS was published in the *Bismarck Tribune* on July 3, 2009. The North Dakota congressional delegation was contacted by phone and sent a briefing paper on July 1, 2009. The briefing paper was also faxed to the Billings and Golden Valley County Commissions and MGA. On July 2, 2009, a copy of the news release announcing the release of the DEIS was faxed to the Billings and Golden Valley County Commissioners and MGA.

The Notice of Availability for the DEIS appeared in the *Federal Register* on July 10, 2009. The comment period on the DEIS was to have closed on August 14, 2009. However, on August 13, it was discovered that the e-mail address for comments was incorrect. The District Ranger, therefore, extended the comment period to September 4, 2009, to accept any comments that may not have been received due to the incorrect address. A letter was sent to the project mailing list on August 25, 2009, extending the comment period, and a new Notice of Comment was published in the *Bismarck Tribune* on August 28, 2009.

In an effort to further expand the comment base, and the opportunity for public participation, the District Ranger further extended the public comment period to October 10, 2009; however, comments were received until October 13, 2009, due to the Columbus Day holiday. A letter was sent to the project mailing list on September 4, 2009, and a news release announcing the extension was sent to numerous television, radio, and newspapers on the same day. The District Ranger, on September 4, 2009, notified MGA, Billings and Golden Valley Counties, and the congressional delegation of the October extension by phone. An amended notice extending the comment period to October 13, 2009, was published in the *Federal Register* on September 18, 2009. A total of 13 comments were received on the DEIS.

In order to respond to public comments received on the DEIS, and based on the time that had passed (almost 2 years) since the DEIS had been distributed, the DPG decided to take an extra step to ensure the public had seen, and had a chance to comment on, this important document. To that end, the Medora Ranger District of the DPG completed the SDEIS for the North Billings County AMP Revisions (USDA Forest Service 2011). The SDEIS rearranged the analysis to display both a landscape analysis by resource issue (SDEIS, Vol. I, Chapter 3, Part 1) and an allotment-level analysis by resource issue (SDEIS, Vol. II, Chapter 3, Part 2). The SDEIS also responded to comments by including an additional alternative, 3A, which included more information on soil capability, soil productivity, and water quality, and included discussions to address unavailable information and scientific controversy to name a few of the changes. The notification of availability for the document was published in the *Federal Register* on July 8, 2011. The SDEIS was mailed to a total of 80 individuals, groups, and federal, state, and county agencies on July 1, 2011. Chapter 4 of the SDEIS lists the agencies, organizations, and people who received copies of the SDEIS. A news release announcing the release of the SDEIS was sent to the *Bismarck Tribune* and numerous other newspapers and radio and television stations on July 1, 2011. The North Dakota congressional delegation was contacted by phone and sent a briefing paper on July 1, 2011. The Billings County Commission and MGA were called as well to inform them of the availability of the SDEIS. Briefings and/or question-and-answer sessions were provided at both the MGA July monthly board of directors meeting and the Billings County Commissioners August meeting. The Notice of Public Comment for the SDEIS was published in the *Bismarck Tribune* on July 8, 2011.

A news release was sent to the media, reminding the public of the August 22, 2011, deadline for SDEIS comments. However, in an effort to further expand the comment base and the opportunity for public participation, the District Ranger further extended the public comment period to September 21, 2011. On August 15, 2011, a letter was sent to those on the project mailing list, and a news release announcing the extension was sent to numerous television and radio stations and to newspapers on the same day. The *Bismarck Tribune* published the Notice of Public Comment extension on August 26, 2011. A total of 65 comments were received on the SDEIS.

KEY ISSUES

The FEIS identified six key issues, four of which come from field reviews and baseline data on each allotment (USDA Forest Service 2013). Drought and economics were issues from MGA. The following is a summary of those issues.

Key Issue #1 – Riparian Areas: There is a concern that livestock grazing is adversely impacting intermittent streams through actions including, but not limited to, excessive use of riparian vegetation, trampling and trailing of stream banks, and loafing. Intermittent streams flow only at certain times of the year when they receive water from surface sources such as snowmelt or storm run-off or from groundwater discharge.

Key Issue #2 – Green Ash Woody Draws: There is a concern that effects from livestock grazing including, but not limited to, browsing, trampling, and lounging are adversely affecting the health of green ash woody draws.

Key Issue #3 – Vegetative Structure: There is a concern that livestock grazing has affected the mosaic of herbaceous structure in the project area, generally resulting in too little high structure and too much low structure in light of Grasslands Plan herbaceous structure objectives (USDA Forest Service 2002a).

Key Issue #4 – Vegetative Seral Stage: Seral stage refers to the sequence of a plant community's successional stages during its progression toward climax vegetation. There is a concern that livestock use and invasive species are adversely affecting the desired distribution of seral stages, in particular the late seral stage.

Key Issue #5 – Economics: There is a concern about possible adverse economic effects in the ranching and local communities resulting from the proposed project.

Key Issue #6 – Drought: A major factor affecting herbaceous structure, forage availability, and other resources across the landscape is drought. While livestock grazing is adjusted according to weather patterns, specific drought management guidelines were not currently in place on the DPG.

DECISION AND RATIONALE

This ROD documents my decision and rationale. The Purpose of, and the Need for, the North Billings Project provide the focus and scope for the proposed action and alternatives as related to the Grasslands Plan direction (FEIS [USDA Forest Service 2013], Chapter 1). Given the Purpose and Need, I have reviewed the alternatives, issues identified during the public involvement processes, and the environmental consequences of implementing the alternatives disclosed in the FEIS. I have carefully considered the public comments received on the DEIS (USDA Forest Service 2009b) and SDEIS (USDA Forest Service 2011) as well as the direction provided in the Grasslands Plan (USDA Forest Service 2002a), including the 2006 ROD (USDA Forest Service 2006a), in determining the course of action.

Furthermore, my decision is based on the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment

of incomplete or unavailable information, scientific uncertainty, and risk. Examples of this include the discussions on initial estimated carrying capacity and actual use located in Chapter 3, Part 1, of the FEIS.

Decision

I am making a decision that is staged, adaptive, and flexible based on conditions of each individual allotment. I am providing the USDA Forest Service alternative and associated management techniques (also called tools) for each allotment in the ROD. My decision is composed of five parts, which will be detailed below:

1. Objectives
2. Grazing Management Toolbox
3. Design Criteria for All Implementation Plans
4. Implementation Plan
5. Monitoring Plan.

Objectives

It is my decision that the objectives stated for each allotment are those outlined in Appendix B, Allotment Decision Tables. These objectives are designed to improve conditions on the allotments in the key resource-related issues that were analyzed throughout the FEIS (USDA Forest Service 2013). Any proposed change in the objectives for management of any allotment would need to be reviewed against the analysis documented in the FEIS to determine whether the anticipated outcomes would remain the same and whether the change would result in additional NEPA analysis.

Grazing Management Toolbox

It is also my decision that the Grazing Management Toolbox (Toolbox) (Appendix C) presents the set of management techniques that shall be used within an implementation plan. These tools provide a broad array of options, and those were techniques analyzed within the FEIS (USDA Forest Service 2013). Before any other tool or technique could be used, it would be necessary to review the FEIS to determine whether the effects would fit within the analysis completed and stated within the FEIS.

Design Criteria

It is my decision that the design criteria listed in Appendix D will apply to all implementation plans developed based on this analysis. These actions are necessary to reduce impacts from livestock grazing and to ensure compliance with all necessary laws, regulations, policies, and higher-level management plans (i.e., the Grasslands Plan).

Implementation Plan

Based on my review of the analysis summarized in the FEIS (Chapter 3) and the individual and varying conditions of the 43 allotments included in this project, I have opted to make allotment-by-allotment decisions regarding which alternative to apply to future management of the allotments included in the North Billings County AMP Revisions Project. Table 1 displays each allotment and the USDA Forest Service alternative selected. I have selected Alternative 3 for four allotments, Alternative 4 for 17 allotments, and variations of Alternative 4-Modified for the remaining 22 allotments (see Table 1 for details). The Allotment Decision Tables in Appendix B also outline the initial management actions that would be incorporated into the USDA Forest Service implementation plan for each allotment.

Table 1. Allotment and USDA Forest Service alternative selected.

Allotment	Alternative	Allotment	Alternative
126	4-Modified[a,b]	240	4-Modified[b]
127	4	241	4-Modified[a,b]
128	4-Modified[a,b]	243	4-Modified[a]
129	4	244	4
130	4	248	4
131	4-Modified[b]	249	4-Modified[b]
132A	3	256	4
132H	4-Modified[b]	258	4
133	4	272	4
133D5	4	277	4-Modified[b]
134	3	278	4-Modified[b]
135	4-Modified[b]	281	4-Modified[b]
136/139	4	282	4-Modified[a]
140	4-Modified[b]	283	3
141	4-Modified[a]	286	4-Modified[b]
142	4-Modified[a,b]	287	4
158	4-Modified[a]	288	4-Modified[b]
220	3	289	4-Modified[b]
221	4	300	4
230	4	301	4
237	4-Modified[a]	302	4
239	4-Modified[a,b]		

a. Modification is authorized use from Alternative 3.
b. Modification is bringing forward specific adaptive options or tools from the Grazing Management Toolbox as initial actions or removing an initial action.

However, I am also, with this decision, providing an opportunity for MGA (and/or the individual member who utilizes an allotment) to develop an implementation plan that is based on a different set of initial management actions from the Toolbox (Appendix C) than is outlined in

Appendix B. If MGA opts to develop such a plan, it must be designed in such a way as to move toward the objectives outlined by allotment in Appendix B and be approved by the USDA Forest Service. More details relative to my expectations for MGA Implementation Plans are provided below.

As stated above, my decision includes the design criteria (Appendix D), the individual allotment objectives identified in the Allotment Decision Tables (Appendix B), the required use of the actions contained in the Grazing Management Toolbox (Appendix C), and the adaptive management options identified in the FEIS (USDA Forest Service 2013), Chapter 3, Part 2, in developing implementation plans, whether developed by the USDA Forest Service or MGA.

Grazing Association (MGA) Implementation Plan. While I am confident that the actions outlined by the interdisciplinary team for the project would move us toward the goals for each allotment, I also understand that we do not have absolute science and there may be other ways to reach those goals. Therefore, as mentioned, I would invite and encourage MGA to develop an implementation plan, utilizing the options included in the Toolbox (Appendix C), that will move resource conditions toward the goals for each individual allotment. The Toolbox provides a broad array of techniques that can be incorporated into a customized plan for each allotment. The Association Implementation Plan does not need to look similar to the USDA Forest Service alternative, but it must include actions that will allow for a reasonable opportunity to reach the goals outlined for the individual allotment. The Association Implementation Plan must use the management techniques from the Toolbox, because the environmental impacts of implementing them were analyzed in the SDEIS (USDA Forest Service 2011), and be submitted before the 2014 grazing season.

Management actions in the Allotment Decision Tables (Appendix B) for each allotment are designed to move that particular allotment toward those objectives. The Association Implementation Plan would also need to demonstrate that the tools selected would move the allotment toward those objectives.

Common Components of USDA Forest Service or Grazing Association Plans:

- As AMPs are developed for an individual allotment, the specific techniques chosen from the Toolbox will be outlined as to where and when they will be employed. The AMP should provide a reasonable connection between the selection of techniques and how they will trend toward the goals.

- Each allotment will need to have a monitoring plan so that we can determine whether we are trending toward the goals for the allotment. There should be specific enough performance measures to discern whether the actions are trending toward the goals.

- Each year, we will need to have actual use for the allotment so that we can fully utilize the monitoring data to understand the trends. The actual use information needed for each allotment will be included in the monitoring plan or in the AOIs for the specific allotment.

Adaptive Management. Whether it is the USDA Forest Service Implementation Plan or MGA's, we will need to retain the ability to learn and adapt as we go. Either of these plans could generate unintended consequences, and from those, we need to learn and adapt. If monitoring

shows that progress toward the desired conditions is not being made with the initial management actions, additional or different management actions will be implemented. We have suggested some preplanned adaptive measures for each allotment, but any of the management techniques from the Toolbox (Appendix C) that address the lack of progress toward the desired condition may be used. The goal is to employ a reasonable plan, monitor, learn, and adapt if necessary by adjusting the tools or using a different technique from the Toolbox.

Staged Management Planning. I understand that there may be techniques that are necessary, but those might not trend toward all of the goals at once. As an example, it might be necessary to work on vegetative composition so we reach the mixture of grasses and forbs in our goals. To do so, it might be necessary to employ a technique that might, for a short period, not move us toward the goals for high structure. A management plan can outline the strategy to meet first one goal, and by achieving that goal, we would set up success for the second goal. I understand that achieving all goals may take several years for any plan put in place.

Flexible Management. Annual conditions of precipitation amounts and early or late seasonal weather patterns need to be accounted for in the AOIs. These are generally outlined and approved during late winter (February). The USDA Forest Service and MGA will need to remain flexible with drought or excessive precipitation and/or excessive cold weather in the spring or fall. This decision does not alter that flexibility.

Trigger Points for Change. This approach is an affirmation of the cooperative nature of the Grazing Agreement between the USDA Forest Service and MGA (USDA Forest Service 2009a). None of us has perfect science, but by working together on management of the grasslands, I am convinced we can reach the goals outlined by our Grasslands Plan (USDA Forest Service 2002a). Successful implementation of this decision will involve continuous cooperation between the USDA Forest Service and MGA, as well as proper oversight of management plans by MGA. The following are trigger points to be considered in this process:

- If MGA develops a plan for a particular allotment and can demonstrate to the USDA Forest Service that it would result in reasonable movement toward the objectives for that allotment, the MGA plan will be given preference for implementation.

- If MGA or its members decide they would prefer to not develop an Association Implementation Plan, then the USDA Forest Service Implementation Plan would be implemented.

- Successful implementation of any management plan should have close oversight by MGA. Understanding that issues arise, it would still be expected that a reasonable effort be made to implement any management plan. If the members of a given allotment do not make reasonable efforts to implement their plan, then it would be necessary for the USDA Forest Service Implementation Plan to be put in place. This will be determined by actual use, management records, and oversight.

- However, if the Association Implementation Plan is being properly implemented and we learn that it is not working as planned, adaptive management would be employed instead of reverting automatically to the USDA Forest Service Implementation Plan. The MGA and the USDA Forest Service will learn from what happened and adjust accordingly.

- Learning and adapting are important with any plan. Reluctance or failure to adapt would be cause for the USDA Forest Service-suggested management plan to be implemented.

Monitoring Plan

Monitoring is the process of collecting information to determine the effectiveness of management actions in meeting prescribed objectives. It is a key feature when implementing any management scheme and is the foundation for adaptive management. Two important factors in my thinking are that (a) the monitoring needs to be achievable and (b) it needs to be a cooperative effort with MGA and other partners like Dickinson State University and NDSU. I also think that monitoring needs to be relevant, and that timeframes to monitor help set the context for assessing the effectiveness of my decision.

With this decision, we will monitor implementation and effectiveness. Implementation monitoring is annual monitoring that evaluates whether livestock management is being applied as prescribed through the AOIs. MGA, through the Grazing Agreement (USDA Forest Service 2009a), is responsible for monitoring the AOIs. The USDA Forest Service's role is oversight through the agreement. Livestock management needs to be in compliance with the grazing authorization, as outlined in each AMP and AOI.

Effectiveness monitoring is long-term monitoring that focuses on determining whether management is successful at maintaining existing desired conditions or is moving rangeland resources toward desired conditions. This monitoring will focus on riparian areas, herbaceous composition and structure, and green ash woody draws.

Monitoring plays an important role in my decision, particularly because adaptive management is a key factor in adjustments of any implementation plan. If monitoring indicates that initially selected management actions are not resulting in acceptable movement toward desired conditions, then changes in management tools will be made utilizing the tools identified in the adaptive options and/or the Grazing Management Toolbox (Appendix C). Conversely, if monitoring demonstrates that particular techniques or tools are very effective, then we can use those lessons learned for other allotments or potentially make upward adjustments in animal months (AMs).

I have selected the monitoring frequency spelled out in the Allotment Decision Tables in Appendix B for the following resources:

Plant composition monitoring will occur once within every 3 to 5 years.

Woody draw monitoring will occur once within every 3 to 5 years.

Riparian area stream reaches that are currently rated as "functional at risk downward" or "non-functional" will be monitored with PFC surveys once every 3 years. This frequency of monitoring is necessary on these types of stream reaches in order to ensure we are properly managing streams in this condition. If an upward trend is noted in these stream segments, the frequency of surveys will change to once every 5 years. For stream reaches rated as PFC or "functional at risk upward," monitoring will occur once every 5 years. Four stream segments under Alternative 4, in addition to PFC monitoring, were also identified to have stream bank

trampling index surveys completed based on input from the resource specialists. I have decided that PFC surveys will be adequate to determine whether proper trend in resource conditions is occurring.

Herbaceous structure will be monitored by completing visual obstruction reading (VOR) surveys annually for 3 years on a quarter of the allotments where I feel structure is of greatest concern, and then the monitoring interval will be reevaluated to determine whether the current monitoring frequency should be maintained or changed. A percentage of the remaining allotments will be monitored each year over the next 3 years so at the end of that timeframe all of these allotments will have been monitored.

As stated previously, this decision on frequency and type of monitoring is applicable regardless of the implementation plan used. If, in order to demonstrate that the Association Implementation Plan is moving toward objectives, additional monitoring is needed, the association members may put forward additional monitoring plans and data for use in assessing the effectiveness of the association's plan.

Rationale

In this section, I will outline my rationale for the decision described above as it relates to the following:

- The 2006 Livestock Grazing ROD (USDA Forest Service 2006a) and Demonstration Project
- The Purpose and Need for the project
- Key issues.

2006 Livestock Grazing ROD and the Demonstration Project

When reviewing the 2006 Livestock Grazing ROD (USDA Forest Service 2006a), several points stand out to me. One is the long relationship that has existed between the grazing associations and the USDA Forest Service. We have been working together since the inception of the National Grasslands. Another is cooperation in management. A concept important to us is that we work together to conduct sound grazing principles on the National Grasslands. A point made by the SRT is that there is some uncertainty whether the goals and objectives from our Grasslands Plan (USDA Forest Service 2002a) can be met and how soon they can be met. The 2006 ROD discussed the validity and relevancy being measured by monitoring the health and diversity of the grasslands while meeting the public's expectations through site-specific decisions.

Within the 2006 Livestock Grazing ROD is the Demonstration Project with a Purpose, among other things, to "…develop and implement integrated allotment management plans pursuant to a collaborative process…." In addition, the 2006 ROD states that "…the Forest Service will seek, to the maximum extent practicable, to minimize any livestock grazing reductions in implementing the DPG LRMP [Grasslands Plan] …"

The record for this project shows that there was extensive consultation and coordination with MGA. However, there also might be disagreement on the final alternatives analyzed in the FEIS (USDA Forest Service 2013), an outcome that does not surprise me. This decision gives MGA and the USDA Forest Service a chance to take the collaboration and cooperation to the next level.

This decision does not start with reducing stocking rates; it starts with objectives and management tools. This decision emphasizes the need to actively manage the use of the range to achieve those goals. I encourage MGA, through this decision, to utilize range management specialists— whether they are USDA Forest Service, other agency, or private rangeland management specialists—to help develop allotment implementation plans. This decision emphasizes cooperative monitoring and adapting as we learn. I believe this meets the spirit and intent of the 2006 ROD.

Purpose and Need

My rationale for applying my decision on an allotment-by-allotment basis is that I believe this will do the best job in addressing the Purpose and Need for this project by not applying a one-size-fits-all approach. Each allotment has a different existing condition, requiring different actions to move toward the DFCs spelled out in the Grasslands Plan (USDA Forest Service 2002a). By selecting a customized (and customizable) approach, I am responding to the Need described to provide flexibility in management in order to more effectively meet goals and allotment-specific objectives in the Grasslands Plan. These improvements are anticipated to occur more effectively and would result in improved long-term rangeland health. Also of critical importance to me, my decision will continue and improve the use of livestock grazing to achieve a balance of other resources.

It is important to understand that key to this decision are the allotment objectives (Appendix B), the Grazing Management Toolbox (Appendix C), design criteria (Appendix D), and monitoring (Appendix E). Below I will outline why an alternative was selected for each allotment; however, this should not be construed as the final answer on which management tools from the Toolbox to apply to each allotment. As stated earlier, we will encourage MGA to bring forward a set of tools from the Toolbox that will move on-the-ground conditions toward allotment objectives.

For those allotments where I selected Alternative 3 or Alternative 4-Modified that utilizes the authorized use from Alternative 3, I decided that initial reductions in authorized use were not necessary for one or more of the following reasons: (1) the effects analysis did not show that livestock grazing was principally responsible for the need for action, (2) current conditions on the allotment are close to desired conditions and require minor management actions, and/or (3) the projected rate of recovery in an identified resource area, based on initial actions, was adequate to move the resource toward desired conditions.

For those allotments I have selected Alternative 4-Modified, where the modification is bringing forward an action listed as an adaptive management tool as an initial action tool or the initial action was deleted, the modifications are identified in bold face in the Allotment Decision Tables (Appendix B). The modifications include prescribed fire, riparian exclosures, woody draw exclosures, and range water developments as initial actions and have been identified by

allotment. I feel these modifications are necessary to more effectively move identified resources toward desired conditions.

I believe my decision allows for management flexibility, by allotment, through adaptive management and monitoring, to meet or move toward Grasslands Plan resource goals and objectives. It also copes with fluctuations in environmental and social conditions including, but not limited to, (1) annual changes in weather, (2) responsiveness to permittee requests for reasonable operational adjustments, and (3) responses to unforeseen or changing issues.

Key Issues

As identified above, the key issues associated with this project include:

- Riparian areas (FEIS [USDA Forest Service 2013], Chapter 1, p. 21)
- Green ash woody draws (FEIS, Chapter 1, p. 22)
- Herbaceous structure (FEIS, Chapter 1, p. 23)
- Vegetative seral stages (FEIS, Chapter 1, p. 24)
- Economics (FEIS, Chapter 1, p. 25)
- Drought (FEIS, Chapter 1, p. 25).

Below I discuss how my decision addresses the issues of economics and drought. Please refer to the Allotment Decision Tables (Appendix B), which contain the linkages to the resource-related issues and how my decision responds to them.

I have reviewed the key issues with the USDA Forest Service interdisciplinary team (IDT) regarding the needs for each allotment and how we can best reach the goals for individual allotments. The Grazing Management Toolbox (Appendix C) provides a great variety of techniques to be used within a management plan. As mentioned above, there may be times when techniques that work toward one goal may also conflict with another over the short term. That is a point to be recognized whether we implement the management tools I have outlined or MGA chooses an alternate set of tools. The important point is that we can together articulate how the choice of tools will in the long run help us meet all of the goals. And again, that may mean a staged set of tools, first addressing one issue then, as we are meeting that goal, beginning to use a second set of tools to achieve other goals. These tools have each been analyzed for use in the various allotments, the impacts have been displayed in the FEIS, and I believe these tools will provide the greatest chance of meeting the goals of proper functioning riparian areas, healthy woody draws, and appropriate herbaceous structure and plant composition.

Economics. Meeting, or moving impacted resources toward, Grasslands Plan (USDA Forest Service 2002a) goals and objectives often has an economic effect. That is why I am making the decision to strike a balance in improving resource conditions with reducing impacts to MGA members to the extent possible. Furthermore, by providing the option for MGA members to propose the management tools that they feel will result in an improved trend on their allotment, I

believe we will not only minimize the impacts on MGA members but this decision will produce the desired Grasslands Plan results and give MGA members a stake in the outcome. The greatest hope I have for a positive range health condition is through cooperative management that has ownership by the USDA Forest Service and MGA. Through active and conscientious management, I believe we can improve range health and improve forage production that benefits the American public and the individual rancher.

Drought. Drought is a prevalent factor on the LMNG and affects vegetation and resources associated with vegetation. The DPG Drought Strategy is intended to reduce the impacts that would be expected to occur.

PUBLIC COMMENT

Public involvement occurred at a variety of stages in the project. Early scoping resulted in 10 responses that were used to develop issues and alternatives to the proposed action. Thirteen responses were received on the DEIS (USDA Forest Service 2009b). Comments covered a wide variety of subjects including:

- Technical aspects relative to the methodology used to calculate initial estimated carrying capacity
- Requests to revisit and possibly modify Grasslands Plan goals, objectives, standards, and guidelines (USDA Forest Service 2002a)
- Requests to consider management actions other than livestock reductions to achieve the desired resource condition
- Requests to utilize the 9% average stocking reduction predicted under the Grasslands Plan rather than the range of reductions in authorized use identified under Alternative 4
- Request for more information and analysis in some cases
- Assertions that the proposed action (Alternative 3) did not meet the requirements of the Demonstration Project.

Detailed responses to comments on the DEIS (USDA Forest Service 2009) are contained in Appendix E of the FEIS (USDA Forest Service 2014), and responses to the comments on the SDEIS (USDA Forest Service 2011) are contained in Appendix F of this document.

Some commenters stated that because all of the recommendations provided by MGA were not included in the proposed action, it does not meet the Demonstration Project direction concerning development of the proposed action. To address this concern, Alternative 3A was developed and included in the SDEIS published on July 8, 2011.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

It is required by regulation that one or more environmentally preferred alternatives be disclosed. The environmentally preferable alternative is the alternative that will best promote the national

environmental policy as expressed in NEPA Section 101 (42 U.S.C. 55 § 4321). Ordinarily, the environmentally preferable alternative is that which causes the least harm to the biological and physical environment; it also is the alternative that best protects and preserves historic, cultural, and natural resources (36 CFR 220.3). For the North Billings Project, the environmentally preferred alternative is allotment specific. Because the conditions of the land vary between allotments, the management needs are different for each. Table 1 displays the environmentally preferred alternative, since the actions proposed will take us toward the objectives for resource conditions that have been outlined in the FEIS (USDA Forest Service 2013). Rangeland health is the key for this analysis and decision, and that is the core of my decision. The objectives outlined for each allotment in Appendix B do not change with any proposed implementation plan. As stated in the 2006 Livestock Grazing ROD (USDA Forest Service 2006a), there is uncertainty in managing range, and there may be a variety of techniques that will move us toward those goals. This decision focuses on those goals and objectives.

OTHER ALTERNATIVES CONSIDERED

In addition to the two alternatives I selected from and combined to apply to the various allotments in the project area, I also considered three other alternatives in detail. The following describes my rationale for choosing not to apply the management actions as described in those alternatives to any of the allotments in the project area. A more detailed comparison of these alternatives can be found in Chapters 2 and 3 of the FEIS (USDA Forest Service 2013).

Alternative 1

The Council on Environmental Quality regulations for implementing NEPA require that a no-action alternative be developed as a benchmark from which the agency can evaluate the proposed action. No action in livestock management planning is defined as no permitted livestock grazing (USDA Forest Service 1996; USDA Forest Service 2005 [FSH 2209.13, 92.31]).

Upon implementation of the decision and resolution of any appeals, the term grazing permit with MGA would be modified to terminate livestock grazing in the analysis area. Pursuant to FSH 2209.13, Section 16.24 (USDA Forest Service 2005), this alternative could not be implemented until 2 years after the notification of each affected permittee [36 CFR 222.4(4)(1)]. No permits would be issued for any of the 43 affected allotments. Because livestock grazing would no longer be permitted under this alternative, no mitigation measures for riparian habitat, woody draws, herbaceous structure, or composition would be completed. However, restoration projects could be planned and implemented, which would require a subsequent plan and NEPA decision.

Most range improvements currently in existence on the allotments would be abandoned. Subsequent decisions would need to be made regarding retention of any improvements (such as water developments) for other resource needs, and funding for maintenance would need to be secured. Any water developments not needed for wildlife or other purposes, and all fences, except National Grassland boundary fences or allotment boundary fences adjacent to other active grazing allotments, would be removed.

I did not select this alternative for implementation, because it does not meet several points of the Purpose and Need for this project. Specifically, Alternative 1 would eliminate grazing, which

would have profound impacts on the economic well-being of the ranching community associated with the project area as well as the economic well-being of nearby communities. Also, while it would provide the quickest recovery of impacted resources on a short-term basis, in the long term, invasive grasses are expected to expand to “invaded state” levels on large portions of the project area (FEIS [USDA Forest Service 2013], Chapter 3, p. 195). This alternative would also remove an important tool in grassland management, herbivory.

Alternative 2

This alternative would maintain the status quo. There would be no changes in authorized use numbers (AMs) of livestock, permitted season of use, kind or class of livestock, or grazing system (other than minor changes made, by exception, in the AOI).

The issues for this project are identified by comparing existing conditions to desired conditions. I did not select this alternative, because it perpetuates existing conditions and does not meet the Purpose and Need for the project. Under this alternative, management flexibility to adapt to changing conditions is limited, requiring additional NEPA analysis to adjust management actions beyond what can be addressed in AOIs. This alternative is not consistent with Grasslands Plan direction (USDA Forest Service 2002a).

Alternative 3A

Alternative 3A was created in response to comments received from MGA during the comment period on the DEIS (USDA Forest Service 2009b). It is identical to Alternative 3, with the exception of 18 added or deleted actions spread across 14 allotments. A detailed description of the creation of Alternative 3A is located in Appendix A of the FEIS (USDA Forest Service 2013).

I did not select this alternative for implementation, because in terms of effects, it is essentially the same as Alternative 3, with the exception of woody draws and plant composition. It would result in less improvement in woody draw conditions, improving woody draw conditions in only 25% of the allotments, and would also cause a decrease in the maintenance of native plant communities in the project area. My reasoning for not selecting this alternative is the same as for Alternative 2.

Alternatives Considered but not Studied in Detail

The FEIS (USDA Forest Service 2013) (Chapter 2) also considered four other alternatives, three of which were in response to public comment. The section in Chapter 2 of the FEIS titled Alternatives Considered but Dropped from Detailed Study discusses why these alternatives were not studied in detail. The FEIS analyzes five alternatives that I believe adequately address the issues, and the development of additional alternatives was not necessary. The array of alternatives is also representative of the suggested range of alternatives identified in the Demonstration Project.

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

I have evaluated this project to determine whether it would be consistent with federal laws and regulations. I have determined that it would be compatible. My rational follows.

National Forest Management Act

The NFMA and its implementing regulations govern National Forest and National Grassland planning. This project and my decision comply with the Grasslands Plan and with NFMA. The following is a discussion of the sections of the NFMA applicable to the North Billings Project.

Grasslands Plan Consistency

The Grasslands Plan (USDA Forest Service 2002a), supported by its FEIS (USDA Forest Service 2013), is the grasslands programmatic document required by the rules implementing the Forest and Rangeland Renewable Resources and Planning Act of 1974, as amended by the NFMA.

I have evaluated the selected alternative and compared it to the Grasslands Plan to determine whether the selected alternative is in compliance with grasslands-wide standards and guidelines. I have determined that the selected alternative meets the Grasslands Plan standards and guidelines, and that it will contribute toward reaching the Grasslands Plan goals and objectives.

The Demonstration Project, described in the 2006 Livestock Grazing ROD (USDA Forest Service 2006a), supplements the Grasslands Plan with additional direction that needs to be considered in the analysis of range resources. Below I address this direction in light of the North Billings Project.

One of the key goals of the Demonstration Project is "…to maintain or improve current on-the-ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM [animal unit month] levels and providing sufficient habitat for grassland species" (USDA Forest Service 2006a, p. 9).

The North Billings FEIS analysis shows that the existing condition of the following are less than the desired condition outlined in the Grasslands Plan:

- Riparian areas (FEIS, Chapter 3, Part 1, pp. 111–130)
- Woody draws (FEIS, Chapter 3, Part 1, pp. 130–166)
- Herbaceous structure (FEIS, Chapter 3, Part 1, pp. 166–186)
- Seral stages (FEIS, Chapter 3, Part 1, pp. 186–210).

I believe the information and analysis provided in Chapter 3 of the FEIS substantiates that management of livestock is the primary factor affecting the key resource issues identified in Chapter 2 of the FEIS. I recognize that other factors such as wildlife also have an effect (Chapter 3, Part 1), but livestock are the predominant herbivores in the project area. It will take a

combination of different grazing management tools, including adjusting authorized use in some cases, to address the resource concerns and meet or move toward desired conditions. I have selected the approach described above in order to balance addressing impacted resources and maintaining grazing levels to the maximum extent possible. This approach includes the following:

- The 2006 Livestock Grazing ROD (USDA Forest Service 2006a, p. 6) identified that the USDA Forest Service would incorporate the SRT recommendations in accordance with the DPG's Final Response to the Scientific Review Team Reports (USDA Forest Service 2006b). This has been carried out and is documented in different portions of Chapter 3, Part 1 (pp. 91, 94, 112, 116, 145, 169, 170, 176, and 214) and Appendix C (p. 8) of the FEIS.

- Part of the Demonstration Project identifies that the USDA Forest Service and MGA proposal would be carried forward in the NEPA process as the USDA Forest Service's proposed action. Alternative 3 was developed in conjunction with MGA and put forward as the proposed action in the DEIS (USDA Forest Service 2009b). However, MGA commented on the DEIS, stating that MGA wanted Alternative 3 revised to reflect all of MGA's recommendations. In response to this comment, Alternative 3A was developed and analyzed, and the anticipated effects were disclosed in the SDEIS produced in 2011(USDA Forest Service 2011).

- As indicated earlier, I have determined that management of livestock is the primary factor affecting resource conditions in the project area. This determination is based on current resource conditions and the analyses disclosed in Chapter 3 of the FEIS. The description of current resource conditions consists of field data collected and analyzed over a series of years in the project area. Information on field data collection is located in Chapter 3, Part 1, under the different resource areas and in the specialist reports located in the project record.

The Demonstration Project directs that monitoring data are needed to establish whether or not desired conditions have already been achieved before consideration of livestock number or AUM adjustments. This information exists and has been displayed in the FEIS, and, where it has been determined that resource conditions exist that require adjustments in authorized use in order to show the necessary improvements, I have made a decision to reduce authorized use, as displayed above in Table 1. There are a number of allotments where resource conditions (particularly herbaceous structure) are not directly attributable to livestock grazing, or where reductions in authorized use have not been deemed necessary to show needed improvements; for those allotments, I have made a decision not to reduce the allowable authorized use (see Appendix B).

Given the Demonstration Project language and my interest in supporting the local economy, authorized use will be reduced by no more than 10% per year for each allotment receiving a decrease in authorized use. This will phase in the economic impact to individual members. This 10% limit provides each rancher with some time to make ranch management decisions. I also want to emphasize that approximately 85% (see SDEIS, Table 3.5) of the authorized use in the North Billings Project will persist and continue to contribute to the local and national economy.

Viability

The Grasslands Plan (USDA Forest Service 2002a) identifies the following objective: "Within 15 years, for threatened, endangered, sensitive, and MIS [management indicator species], demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area." For Alternatives 3 and 4, the wildlife and botany reports indicate that there will be no loss of viability of threatened, endangered, and sensitive species or management sensitive species over the next 15 years. The LMNG is implementing its Grasslands Plan monitoring strategy, which is documented in annual reports incorporated here by reference. The FEIS (USDA Forest Service 2013) (Chapters 2 and 3) identifies that Alternative 4 will improve different resources and in so doing help move the LMNG toward the above Grasslands Plan objective. My decision to utilize a combination of Alternative 3, Alternative 4, and Alternative 4-Modified, will allow us to remain consistent with the Grasslands Plan Objectives positive trends in species viability while tailoring this range of alternatives to each individual allotment, (Table 1- Draft ROD- p10) allowing the flexibility to work with MGA and improve the overall health of the grassland while managing our range allotments.

Continued increases of invasive grasses that will occur in a significant portion of the project area under all alternatives are likely to adversely affect habitat conditions for six of the 14 sensitive plant species.

Consideration of Best Available Science

The FEIS, in Chapter 3, Part 1, identifies the various methodologies used to collect data for this analysis (USDA Forest Service 2013). The methodologies are referenced and explained in detail in the different specialist reports located in the project record. The Range section in Chapter 3, Part 1, of the FEIS addresses opposing views related to the calculation of initial estimated carrying capacity. Peer review of the process used to determine initial estimated carrying capacity is contained in the project record. Additional cooperative monitoring data have been provided, completing a 3-year data set from the years 2008, 2009, and 2010 within the project area that includes forage production at the allotment level. The data provided to date have been compared to the initial estimated carrying capacity analysis in an effort to use the best available data (Project Record, Section K, K-6, Final Report and Support Documentation, Range Report, Appendix D, pp. 247–262). The Range section of the FEIS also discloses the unavailability of actual use information and how the USDA Forest Service will address getting this information for the future. The References and Literature Cited section of the FEIS contains 30 pages of references and cited material used in the analysis of this project. Together, all of these indicate that the best available science was used in the analysis of this project.

Diversity

This decision is projected to improve resource conditions through a variety of initial management actions (see the Allotment Decision Tables in Appendix B). Further, this decision provides a plan, including monitoring and additional actions (adaptive management), to provide flexibility if improvements do not initially occur at the desired rate. As affected resources improve under this decision, the existing diversity of plant and animal communities is expected to increase as well. Thus, the project is consistent with NFMA's requirement for a "…diversity

of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan ...”

National Environmental Policy Act of 1969

NEPA establishes the format and content requirements for environmental analysis and documentation. The process of preparing the North Billings Project FEIS and ROD was completed in accordance with NEPA.

National Historic Preservation Act

The USDA Forest Service has consulted with the North Dakota State Historic Preservation Office to ensure compliance with the National Historic Preservation Act, as amended in 1999. The State Historical Society of North Dakota, after review of the Archeological Report, stated, “We concur with a ‘No Adverse Effect’ determination, and we concur with the proposed management recommendations as outlined in the conclusion” (NDSHPO 2006). The cultural report and documentation of concurrence by the North Dakota State Historic Preservation Office are located in the project record.

A cultural resource inventory will be mandated prior to any ground-disturbing action. The project sites will be surveyed and cultural sites will be recorded and evaluated in accordance with established criteria for nomination to the National Register of Historic Places. All significant cultural resources will be avoided and preserved in place. No infrastructure will be placed within the boundaries of known or newly discovered sites.

Endangered Species Act

This decision is consistent with the Endangered Species Act. The selected alternative was evaluated with regard to threatened and endangered animal and plant species. Findings are summarized in Chapter 2 of the FEIS (USDA Forest Service 2013). There are no known threatened or endangered wildlife species that nest, breed, or inhabit the LMNG. There are no threatened or endangered plant species on the LMNG. There are no wildlife or plant species proposed for federal listing, nor is there any proposed or designated critical habitat on the LMNG. This information is in the botany and wildlife specialist reports located in the project record.

Clean Water Act

The Clean Water Act is the principal law governing pollution control and water quality of navigable waterways of the United States. The objective of this act is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. By following the Grasslands Plan (USDA Forest Service 2002a), using the PFC protocol to assess stream conditions, conducting monitoring identified in the water quality section of the FEIS (USDA Forest Service 2013), and implementing best management practices to repair or sustain riparian health, compliance with the Clean Water Act is achieved.

Clean Air Act

The framework for controlling air pollutants in the United States is mandated by the 1970 Clean Air Act, as amended in 1977 and 1990. The Clean Air Act was designed to "protect and enhance" the quality of the nation's air resources. Stringent requirements were established for areas designated as "Class I" areas. Designation as a Class I area allows only very small increments of new pollution above already existing air pollution levels. Class II areas are currently all other areas of the country that are not Class I.

The project area is a Class II air shed; however, the Theodore Roosevelt National Park (TRNP) Elkhorn Ranch Site is immediately adjacent to the west side of the project area. The south unit of the TRNP lies 6 to 7 air miles south of the project area. The TRNP is a Class I air shed.

The use of prescribed fire is identified as an initial action in nine of the allotments contained in this analysis. Prior to initiating these proposed prescribed burns, a site-specific burn plan will be completed and the effects of prescribed fire on air quality will be addressed.

Environmental Justice

"Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority and Low-Income Populations" (59 FR 32), issued in 1994, ordered federal agencies to identify and address the issues of environmental justice (i.e., adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations). The environmental justice analysis conducted for the FEIS determined that the selected alternative will not have a disproportional impact on minority or low-income populations. The environmental justice analysis is located in the project record.

PRE-DECISIONAL OBJECTION OPPORTUNITY

The North Billings County AMP Revisions FEIS (USDA Forest Service 2013) and Draft ROD were subject to a pre-decisional objection period, pursuant to 36 CFR 218.

INFORMATION RELATIVE TO THE OUTCOME OF THE OBJECTION PERIOD WILL BE INSERTED HERE – DATES, NUMBER OF OBJECTIONS RECEIVED (IF ANY), AND RESOLUTION OF OBJECTIONS.

IMPLEMENTATION DATE

The project may be implemented immediately but is expected to be implemented during the grazing season of 2014.

CONTACT

For additional information concerning this decision, contact Ron Jablonski, District Ranger, or Nickole Dahl, Range Management Specialist, at the Medora Ranger District, 99 23rd Ave. W, Suite B, Dickinson, ND 58601, (701) 227-7800.

DENNIS D. NEITZKE
Grasslands Supervisor

Date

REFERENCES

Sedivec, K. K. and J. L. Printz. 2005. *Ranchers Guide to Grassland Management III*. North Dakota State University Extension Service. 268 pp.

USDA Forest Service. 2002a. *Dakota Prairie Grasslands (DPG) Land and Resource Management Plan*. Missoula, Montana.

USDA Forest Service. 2002b. *Record of Decision for Dakota Prairie Grasslands Final Environmental Impact Statement and Land and Resource Management Plan*. July.

USDA Forest Service. 2003. *Dakota Prairie Grasslands Oil and Gas Leasing Record of Decision*. Missoula, Montana.

USDA Forest Service. 2005. *Forest Service Handbook – Grazing Administration Handbook*. FSH 2209.13. September.

USDA Forest Service. 2006a. *Dakota Prairie Grasslands Livestock Grazing Record of Decision*, Missoula, Montana.

USDA Forest Service 2006b. *Dakota Prairie Grasslands Final Response to the Scientific Review Team Reports*. October 10.

USDA Forest Service. 2009a. *Grazing Agreement and Rules of Management Between Medora Grazing Association and United States Department of Agriculture Forest Service for the Period of 2009–2/28/2019*. Bismarck, North Dakota.

USDA Forest Service. 2009b. *Draft Environmental Impact Statement North Billings County Allotment Management Plan Revisions*. June.

USDA Forest Service. 2011. *North Billings County Allotment Management Plan Revisions Supplemental Draft Environmental Impact Statement*. Dickenson, North Dakota.

USDA Forest Service. 2013. *North Billings County Allotment Management Plan Revisions Final Environmental Impact Statement.* Bismarck, North Dakota.

Appendix A

Summary of Medora Grazing Association Involvement

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Appendix A

Summary of Medora Grazing Association Involvement

This appendix contains a list, and brief descriptions, of discussions related to the status of the North Billings County Allotment Management Plan (AMP) Revisions (North Billings) Project, information related to data-collection efforts, Demonstration Project discussions, and permittee meetings.

- May 5, 2004 – Informed the Medora Grazing Association (MGA) board of directors of initial groundwork that would begin that summer for the project area.
- June 11, 2004 – Informed the MGA members at the annual meeting of the initiation of the North Billings County AMP Revisions Project.
- November 2004 – Invited the MGA board of directors to include a tour of the North Billings Project area during the annual fall tours.
- July 6, 2005 – Discussed with the MGA board of directors the need to initiate permittee meetings to get involvement from MGA and its affected members on allotment-specific issues.
- August 3, 2005 – Informed the MGA board of directors of ongoing data-collection efforts and invited any interested directors/permittees to participate.
- October 11, 2005 – Reiterated the need to initiate permittee meetings to get involvement from MGA and its affected members on allotment-specific issues.
- November 9, 2005 – Set up dates with the MGA board of directors for the first round of permittee meetings.
- November 16, 2005 – January 5, 2006 – Met with the associated directors (the whole board was invited to attend), affected permittees, and applicable base property lessors to share comments, concerns, and requests between the USDA Forest Service and the specific permittees in the project area. Also, tried to ensure that maps for each allotment were correct for water developments, fence lines, and lands included.
- December 14, 2005 – Updated the MGA board of directors about the first round of permittee meetings and what the USDA Forest Service's next steps would be as far as taking the information gathered from the permittee meetings back to the USDA Forest Service interdisciplinary team (IDT).
- February 7, 2006 – Updated the MGA board of directors on the information gathered to date, the next steps of the IDT, and the need for additional permittee meetings to update the affected permittees.

- May 3, 2006 – Discussed with the MGA board of directors the need for a second round of permittee meetings to share allotment-specific issues identified by the IDT and how to address those issues. Also handed out a rough NEPA timeline developed for the IDT.

- May 19, 2006 – July 14, 2006 – Held a second round of permittee meetings with the associated directors, affected permittees, and applicable base property lessors to share allotment-specific issues identified by the IDT, proposals to address these issues, and the concept of writing the revised AMPs adaptively to allow for future flexibility. Additional comments, concerns, or ideas were taken from the permittees to bring back to the IDT. Permittees were also able to challenge identified issues if it was felt that their allotment did indeed meet the Grasslands Plan goals and objectives. These challenges would then have to be reviewed by the IDT.

- November 1, 2006 – Discussed with the MGA board of directors the idea of cooperative monitoring and the possibility of beginning in the North Billings Project area.

- December 6, 2006 – Updated the MGA board of directors on the data collected and permittee meetings held to date. Had a discussion on the NEPA process with the MGA board of directors so that they had an idea of how the process works. Reviewed some of the points of the recent 2006 Livestock Grazing ROD and Demonstration Project—specifically, how to proceed with the development of AMPs either through the traditional method of the USDA Forest Service, grazing association, and individual member or through an inclusive collaborative approach such as coordinated resource management.

- January 10, 2007 – Discussed with the MGA board of directors the need for a third round of permittee meetings. Discussed and reviewed with the board of directors the need to proceed with a strategy described in the Demonstration Project. The board of directors indicated to continue the development of the North Billings Project as we have been doing, i.e., the traditional USDA Forest Service, grazing association, and individual member process, and to incorporate adaptive management into the proposed action alternative. Reviewed another point of the Demonstration Project that incorporates and implements recommendations made by the Scientific Review Team, specifically, addressing the size of cows. The discussion included what kind of average weight or range of weights was typical of MGA members' cows, what method of calculation to use from the Grasslands Plan Appendix C, and that adjusting for cow size would be considered one of many tools within the adaptive management toolbox. The board of directors indicated that an average cow size ranging from 1,100 to 1,300 lb was representative of MGA, as we had discussed. The board of directors also indicated that they preferred to utilize the calculations described in Method Number 3 of Appendix C from the Grasslands Plan. Finally, we shared that a carrying capacity analysis for the project area would be conducted utilizing the Natural Resources Conservation Service's soil surveys as recommended by the Scientific Review Team as well. This information would be shared with the board of directors and permittees.

- October 3, 2007 – Reiterated the need to set up a third round of permittee meetings. Shared with the MGA board of directors that an initial estimated carrying capacity analysis has been completed, and that some ground trothing would be completed in the fall of 2007. Also

shared that this analysis had been reviewed by the Agricultural Research Service in Mandan, North Dakota.

- November 20, 2007 – December 27, 2007 – A third round of permittee meetings was held with the associated directors, affected permittees, and applicable base property lessors. The USDA Forest Service provided information about the initial estimated carrying capacity analysis completed for every allotment and discussed how one of the tools within the adaptive management toolbox, i.e., adjust animal unit months based on average cow size, would be applied if necessary. The Allotment Summary Sheet was also reviewed for its adaptive options. Once again, any concerns, comments, or suggestions that the permittee had were received and discussed.

- January 2, 2008 – Updated the MGA board of directors on the completion of the third round of permittee meetings and what would be coming up next in the NEPA process, public involvement. Shared with the board that a scoping letter should be coming out soon that would be sent to MGA, the associated permittees, applicable base property lessors, and the public. Finally, public meetings would be set up sometime in the spring of 2008.

- March 5, 2008 – Updated the board of directors on the NEPA process again, specifically, public involvement, the writing of a DEIS, a comment period for the DEIS, a comment analysis, and the writing of the FEIS and ROD with an appeal period. Discussed the concept of adaptive management again and how that fits into the NEPA process. Handed out the draft Allotment Summary Sheets for each allotment that includes the proposed action. Discussed how the proposed action, according to the Demonstration Project, has been developed to date and the need for a confirmation from MGA on development of the Demonstration Project and to proceed with the proposed action. Finally, a definition for MGA's preference was requested so the USDA Forest Service knows how to properly label the preference value.

- May 7, 2008 – Reiterated that the Allotment Summary Sheets handed out at the March 2008 board of directors meeting was the proposed action for each allotment within the North Billings Project area, not the AMPs, as those will have to be written based on the FEIS.

- May 22, 2008 – A cover letter for the scoping document was sent to MGA and its affected permittees and base property lessors among many other interested parties explaining the North Billings Project proposal, where to find the scoping document on the Internet, how to get a hard copy if preferred, and inviting comments on the scoping document's proposal.

- June 9, 2008 – Shared with the MGA board of directors the dates and locations of the scheduled open houses coming up June 17 and 18, 2008.

- June 17, 2008 – Open house public meeting held in Dickinson, North Dakota, for the North Billings Project. MGA representatives and several individual permittees attended.

- July 1, 2009 – A cover letter and CD were sent to MGA and its affected permittees and base property lessors, among other interested parties, explaining that the CD contained the DEIS for the North Billings Project for review and inviting comments on the project to be received

by August 24, 2009. A briefing paper was also faxed to MGA informing it of the DEIS and comment period.

- July 2, 2009 – A press release was faxed to MGA explaining that the North Billings Project DEIS had been sent out for review and comment.

- July 10, 2009 – The North Billings Project Notice of Availability for the DEIS and comment period was posted in the *Federal Register*.

- August 25, 2009 – A letter was sent to MGA and its affected permittees and base property lessors, among other interested parties, notifying them of an extension to the comment period for e-mail comments for the North Billings Project DEIS due to an erroneous e-mail address posted in the DEIS.

- September 4, 2009 – A letter was sent to MGA and its affected permittees and base property lessors, among other interested parties, notifying them of another extension to the comment period for the North Billings Project DEIS and inviting comments for the project to be received by October 10, 2009.

- February 4, 2011 – A letter was sent to MGA updating it on the status of the project and cooperative agency status with Billings County for providing expertise in the realm of economics and social issues.

Appendix B

Allotment Decision Tables

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Appendix B

Allotment Decision Tables

The following tables contain my decision for each allotment. As noted in the main text of this record of decision, I have chosen to apply my decision allotment-by-allotment, rather than using a one-size-fits-all approach to the whole project area. The modifications to the selected alternatives are identified in bold text within the tables below. See Objective Definitions below, and *North Billings County Allotment Management Plan Revisions Final Environmental Impact Statement* (USDA Forest Service 2013), Vol. 2, Chapter 3, for more specific discussions concerning each allotment. Grasslands Plan (USDA Forest Service 2002a) resource goals and objectives are summarized below for reference.

Riparian – Maintain 80% of riparian areas toward self-perpetuating plant and water communities that have the desired diversity and density of understory and overstory vegetation within site capability.

Woody Draws – Maintain 80% of woody draws in a healthy self-perpetuating condition with a multi-layer and multi-age class of herbaceous plants, shrubs, and trees according to site capabilities.

Seral Stage/Plant Composition	Early seral stages	10–15%
	Mid seral stages	65–75%
	Late seral stages	15–20%
Plant Structure	Low structure	10–20%
	Moderate structure	50–70%
	High structure	20–30%

Objective Definitions

Riparian

Proper functioning condition means that the stream has adequate stream bank vegetation, proper stream morphology (structure), or proper in-stream structures (e.g., woody debris and rock) present to dissipate stream energy during high flows. This results in benefits that include reduced erosion, sediment and bedload capture, floodplain development, water quality improvement, groundwater recharge, and stream bank root mass development.

Functional-at risk means that riparian areas are in a functional condition but one or more properties (such as soil, water, or vegetation) are impaired, which makes the riparian area susceptible to degradation.

Nonfunctional means that the riparian area is not functioning properly. Typically, nonfunctioning riparian areas do not provide adequate vegetation, channel properties, or woody

debris to dissipate stream energy associated with high flows and thus do not reduce erosion, improve water quality, capture sediment, etc.

Woody Draws

Healthy woody draws are defined as those woodlands that have self-perpetuating tree and shrub populations with diverse age classes, species composition, and multiple structural layers as habitat conditions permit.

At risk woody draws tend to exhibit a moderate distribution of tree age classes but lack consistent regeneration as expressed by sapling and young tree age classes. Desirable tall shrub (e.g., chokecherry and serviceberry) distribution tends to be patchy, and/or low shrubs (such as snowberry) dominate the shrub layer.

Unhealthy woody draws are generally characterized by old or decadent tree layers and a lack of younger age classes ranging from saplings to small-diameter trees. The understory is dominated by invasive grasses or short shrubs such as snowberry.

Herbaceous Structure

Low structure is defined as a visual obstruction reading between 0 and 1.49 in.

Moderate structure is defined as a visual obstruction reading between 1.5 and 3.5 in.

High structure is defined as a visual obstruction reading greater than 3.5 in.

Vegetative Seral Stage

Early seral stage is the plant community that occurs after a significant disturbance such as heavy, continuous, season-long grazing. Typical plant species include blue grama, threadleaf sedge, and clubmoss.

Mid seral stage is a plant community composition intermediate between early and late seral stages and can be persistent under relatively moderate and more stable environmental disturbances.

Late seral stage is a plant community that develops with extended periods of no or little disturbance and approaches composition of the historic climax plant community for a given habitat type or ecological site.

Vegetative States

Native or reference grass state is characterized by native grass species of the historic plant community and an absence of invasive non-native grasses.

Native-invaded state is marked by the presence of invasive grasses that may compose up to 40% of the relative grass canopy cover or up to 30% of the total forage biomass when production clipping data are available.

Planted-invaded state refers to broken lands planted to crested wheatgrass and subsequently invaded by invasive grasses at levels similar to the above.

Invaded grass state exhibits more than 40% relative grass canopy cover of invasive grasses or, when production clipping data are available, more than 30% of the total forage biomass when native grasses compose less than 40% of the total biomass. Seral stage was not assigned to these sites.

Invaded state occurs among broken land sites planted to crested wheatgrass and other invasive grasses (Kentucky bluegrass, smooth brome, etc.) compose more than 40% of the relative grass canopy cover, or more than 30% of the total forage production when crested wheatgrass composes less than 40% and production clipping data are available to determine these percentages. Seral stage was not assigned to these sites.

<table>
<tr><th colspan="2">Allotment 126</th></tr>
<tr><td colspan="2">Objectives
• Maintain proper functioning condition (PFC) on Whitetail Creek.
• Establish regeneration and/or increase survival of saplings in green ash hardwood draws.
➢ 31% healthy and 69% at risk.
• Manage for additional high structure on biologically capable habitats.
➢ 50% low, 50% moderate, and 0% high structure.
• Manage to increase late seral stages, and limit or decrease invasive grasses.
➢ 33% early, 50% mid (native-invaded and planted-invaded states), and 17% at invaded state.</td></tr>
<tr><th>Initial Actions</th><th>Adaptive Options</th></tr>
<tr><td>• Authorized federal AMs: 489
• Combine Allotments 126 and 128, and implement a seven-pasture rest/deferred-rotation grazing system.
• Treat Pastures 5 and 10 and the south part of Pasture 6 as crested wheatgrass pastures. Generally, graze these pastures within April 20th – June 15th.
• Install temporary electric fence in Pasture 5 to segregate crested wheatgrass areas from native grass areas.
• Develop a new water source in Pasture 5 to draw livestock away from woody draws and riparian areas.
• Utilize prescribed fire to reduce excessive litter and regenerate decadent “wolfy” crested wheatgrass areas throughout allotment.
• Utilize prescribed fire to stimulate regeneration in woody draws.</td><td>• Fence a woody draw.
• Maintain spring development in Pasture 6; ensure overflow is functional and operating properly.
• Utilize rest, fencing, or change in season of use if riparian falls below PFC.
• Adjust authorized use.
• Develop new water sources to draw livestock away from riparian areas.</td></tr>
<tr><td colspan="2">Monitoring
• Survey woody draws once every 3 to 5 years.
• Gather visual obstruction readings once every 3 years.
• Complete PFC survey once every 5 years.
• Collect vegetative composition and production data once every 3 to 5 years.</td></tr>
</table>

Decision Rationale

The actions as presented above have the most potential to move toward the identified objectives, because these actions would result in the forage being harvested by livestock during different periods of the grazing season from year to year. Native herbaceous plant communities along with crested wheatgrass pastures would have an opportunity for a recovery period during the growing season and during critical growing periods. These all provide potential to increase high structure. Levels of disturbance to woody draws would decrease. Also, promotion of regrowth, germination, and survival of woody species would occur, thereby providing opportunities for an overall increase in woody draw health. See supplemental draft environmental impact statement (USDA Forest Service 2011) Vol. II, pp. 23 and 25, and Vol. III, Appendix D, pp. 36–37, for more details.

Allotment 127

Objectives

- Maintain or improve current green ash hardwood draw conditions.
  - 80% healthy and 20% unhealthy.
- Manage for additional high structure on biologically capable habitats.
  - 100% low, 0% moderate, and 0% high structure.
- Manage to increase early and late seral stages, and limit or decrease invasive grasses.
  - 100% seral stages, 50% at native state, and 50% at native-invaded state.

Initial Actions	Adaptive Options
• Authorized federal AUMs: 345 • Continue a two-pasture deferred rotation between Pastures 2 and 3. • Improve allotment boundary fence between Allotment 127 and 280 to maintain proper stocking.	• Adjust authorized use.

Monitoring

- Survey woody draws once every 3 to 5 years.
- Gather visual obstruction readings once every 3 years.
- Collect vegetative composition and production data once every 3 to 5 years.

Decision Rationale

The actions as presented above have the most potential to move toward the identified objectives, because they would result in maintaining or enhancing woody draw conditions by slightly decreasing browsing and trampling disturbances. A lower grazing intensity would increase the potential for increased residual cover, thereby potentially increasing the amount of high herbaceous structure and improving the herbaceous structure distribution. Decreasing authorized use would also facilitate shifts toward late seral stages by decreasing livestock grazing and trampling disturbances. See supplemental draft environmental impact statement (USDA Forest Service 2011), Vol. II, p. 39, for more details.

<table>
<tr><th colspan="2">Allotment 128</th></tr>
<tr><td colspan="2">Objectives
• Start functioning at risk-downward trend and National Forest reaches on Whitetail Creek on an upward trend toward proper functioning condition. On the National Forest reach, reduce stream velocity to help the stream heal itself.
• Establish regeneration and/or increase survival of saplings in green ash hardwood draws. Reduce juniper encroachment.
➢ 63% healthy and 32% at risk.
• Manage for additional high structure on biologically capable habitats.
➢ 37.5% low, 62.5% moderate, and 0% high structure.
• Manage to increase early and late seral stages, and limit or decrease invasive grasses.
➢ 100% at mid seral stage, and all at native-invaded state.</td></tr>
<tr><td>Initial Actions</td><td>Adaptive Options</td></tr>
<tr><td>• Authorized federal AMs: 1,866
• Fence in developed spring located in southwest quarter of southwest quarter of Section 25, T144N, R101W (Pasture 1). Pipe water from spring to a tank located away from spring area.
• Control livestock distribution in pasture through stock tank management.
• Combine Allotments 126 and 128, and implement a seven-pasture complementary rest/deferred rotation grazing system.
• In Pasture 1, on Whitetail Creek, construct a 35-acre riparian exclosure. Build sediment traps/stream stabilization structures. No grazing of exclosure for first 3 years. If, after 3 years, the riparian vegetation is sufficiently recovered, grazing may be authorized on a limited basis.
• Utilize prescribed fire to reduce juniper encroachment.</td><td>• Harden one stream crossing/watering area upstream of headcut along Whitetail Creek in Section 6.
• Construct a 5- to 20-acre riparian exclosure above headcut on Whitetail Creek.
• Install stream structures below headcut on Whitetail Creek to help dissipate stream energy.
• Develop a riparian pasture within Pasture 1. To create this pasture, an existing range pipeline will have to be extended from Pasture 2 (Section 18) into Pasture 1 (Section 6).
• Riparian exclosure: At the end of Year 3, conduct vegetation survey. If survey reveals excessive litter, initiate compressed prescribed grazing. Prescribed graze in late or dormant season preferred. Prescribed grazing would be identified in annual operating instruction.
• Construct 9- and 22-acre riparian exclosures on Whitetail Creek in Pasture 1, Sections 6 and 31, respectively (Reaches 9 and 12).
• Adjust authorized use.</td></tr>
<tr><td colspan="2">Monitoring
• Survey woody draws once every 3 to 5 years.
• Gather visual obstruction readings once every 3 years.
• Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established.
• Collect vegetative composition and production data once every 3 to 5 years.</td></tr>
</table>

Decision Rationale

The actions as presented above have the most potential to move toward the identified objectives, because they would result in the forage being harvested by livestock during different periods of the grazing season from year to year. Native herbaceous plant communities along with crested wheatgrass pastures would have an opportunity for a recovery period during the growing season and during critical growing periods. These all provide the potential to increase high structure. The exclosure on Whitetail Creek would provide the best opportunity for riparian vegetation to reestablish itself. This, along with sediment traps and channel-stabilizing structures, would accelerate restoration of this reach. Levels of disturbance to woody draws would decrease in duration. Also, promotion of regrowth, germination, and survival of woody species would occur, thereby providing opportunities for an overall increase in woody draw health. See supplemental draft environmental impact statement (USDA Forest Service 2011) Vol. II, pp. 57–60, and Vol. III, Appendix D, pp. 36–37, for more details.

Allotment 129

Objectives

- Initiate action to start the degraded reach on Magpie Creek in Pasture 1 on an upward trend toward proper functioning condition.
- Increase the successful recruitment of woody species in green ash hardwood draws.
  - 56% healthy 44% at risk.
- Manage for additional high structure on biologically capable habitats.
  - 14% low, 86% moderate, and 0% high structure.
- Manage to maintain native plant communities with a range of seral stages, and limit or decrease invasive grasses.
  - 12.5% early, 75% mid, 12.5% late seral stages. 12% at native state and 88% at native-invaded state.

Initial Actions	Adaptive Options
• Authorized federal AUMs: 1,090, of which 1,000 AUMs are summer use and the remainder are winter use. • Reallocate Allotment 131 Pastures 1 and 2 to Allotment 129. Reallocate Allotment 129 Pasture 2 to Allotment 131. • In Section 3, develop water on fence line between Allotment 129 Pasture 1 and Allotment 131 Pasture 1, and reclaim or fence one reservoir in Allotment 131 Pasture 1 (west side). • Remove the boundary fence between Allotments 129 Pasture 2 and Allotment 131 Pasture 3 in the south half of Sections 11 and 12 to eliminate bottleneck in Allotment 131 Pasture 3. • Create a riparian pasture, installing a northwest-to-southeast fence in Pastures 1	• Extend range water pipeline from well in Allotment 131 Pasture 3 into Allotment 131 Pasture 1, and reclaim one reservoir in Allotment 131 Pasture 1 (east side). • In Allotment 129 Pasture 4, extend the existing range water pipeline from Section 15 to the northwest quarter of Section 23, T144N, R101W. • Reclaim developed spring located in the southwest quarter of the southwest quarter of Section 14, T144N, R101W. • Riparian exclosure: At the end of Year 3, conduct vegetation survey. If riparian vegetation has been established on 80% of stream banks and stream deposition is occurring, then initiate late- or dormant-season prescribed grazing. Prescribed

and 2 (Sections 10 and 11). To establish/enhance willows along Magpie Creek, rest pasture 1 year and then annually rotate the season of use beginning with dormant season grazing. • In Pasture 1, on Magpie Creek, construct a 94-acre riparian exclosure with no grazing for first 3 years.	grazing would be identified in annual operating instruction. • Construct 42- and 59-acre riparian exclosures on Magpie Creek in Pasture 1 in Section 10, respectively (Reaches 2 and 3). • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in the improvement in riparian function along Magpie Creek by enhancing channel bank strength, entrapping stream sediments, and allowing riparian vegetation to reestablish itself. The riparian pasture would also decrease livestock browsing and trampling disturbances, thereby providing the potential for increased woody draw conditions. Decreasing the intensity of livestock use would increase the potential to improve residual cover, thereby providing potential for increased high herbaceous structure. See supplemental draft environmental impact statement (USDA Forest Service 2011), Vol. II, pp. 75–77 and 83–84, for more details.	

Allotment 130	
Objectives • Maintain proper functioning condition on Magpie Creek. • Increase successful recruitment of tree and shrub seedlings in green ash hardwood draws. ➢ 27% healthy, 67% at risk, and 6% unhealthy. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 100% at mid seral stage and native-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 891, of which 677 AUMs are summer use and the remainder are winter use. • Winter graze Pastures 1, 2, and 6 on a rotating annual basis. • Use Pastures 8 and 9 as crested wheatgrass pastures, and graze early 2 out of 3 years before rotating to Allotment 302. In third year, start in Allotment 302 early on the	• Fence a woody draw. • Remove fence between Pastures 8 and 9 if combined herds are too confined in each pasture and resource conditions do not meet objectives. • Adjust authorized use.

crested wheatgrass areas temporarily fenced out in Pastures 1 and 2. • Recommend moving winter feeding activities from National Forest to private in Pastures 1 and 2.	
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in potentials for improved woody draw conditions by providing less livestock disturbances and the potential for regeneration of desired woody species. The actions will also contribute toward creating the opportunity for more high herbaceous structure. See supplemental draft environmental impact statement (USDA Forest Service 2011), Vol. II, pp. 102–103, for more details. Summer authorized use was adjusted from the original supplemental draft environmental impact statement proposed Alternative 4 values to reflect the overall 7% reduction in authorized use.	

Allotment 131	
Objectives • Increase successful recruitment of woody species in green ash hardwood draws. ➢ 56% healthy and 44% at risk. • Manage for additional high structure on biologically capable habitats. ➢ 33% low, 67% moderate, and 0% high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 20% early and 80% mid seral stages. 40% at native state, and 60% at native-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 273, of which 48 AUMs are summer use and the remainder are winter use. • Reallocate Allotment 131 Pastures 1 and 2 to Allotment 129. Reallocate Allotment 129 Pasture 2 to Allotment 131. • Pastures 1 and 2 would be utilized as summer pasture. • Remove the boundary fence between Allotments 129 Pasture 2 and 131 Pasture 3 in the south half of Sections 11 and 12 to eliminate the bottleneck in Pasture 3. • **Utilize prescribed fire to reduce juniper encroachment.**	• Fence individual woody draws in Pastures 2 and 3. • Replace the fence between Pastures 1 and 2. • Extend range water pipeline from well in Allotment 131 Pasture 3 into Allotment 131 Pasture 1. • Reclaim two reservoirs in Allotment 131 Pasture 1. • Adjust authorized use.

Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Collect vegetative composition data once every 3 to 5 years.
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreasing livestock browsing and trampling disturbances and create the potential for improving woody draw conditions. Decreased livestock use would leave more residual cover, thereby potentially increasing the amount of high herbaceous structure and improving the herbaceous structure distribution. Decreasing authorized use would also facilitate shifts toward late seral stages by decreasing livestock grazing and trampling disturbances. See supplemental draft environmental impact statement (USDA Forest Service 2011), Vol. II, p. 117, and Vol. III, Appendix D, pp. 36–37, for more details.

Allotment 132A	
Objectives • Manage allotment to maintain structure objectives. • Manage to maintain crested wheatgrass and native grasses while limiting or decreasing the Kentucky bluegrass. • Take one sample at invaded state.	
Initial Actions	**Adaptive Options**
• **Authorized federal AMs: 176.** • Continue to provide opportunity for growth and regrowth of native grasses and crested wheatgrass.	• Adjust authorized use.
Monitoring • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to maintain the identified objectives, because they would result in no change in current management, which has been identified to meet all objectives except for the seral objective. In the case of the seral objective, these actions appear to have the least impact to the transition toward invaded grass state. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 123–125, for more details.	

Allotment 132H	
Objectives • Increase successful recruitment of woody species in green ash hardwood draws. ➢ Only one woody draw in allotment and at risk. • Manage for additional high structure on biologically capable habitats. ➢ 33% low, 67% moderate, and 0% high structure. • Manage to maintain crested wheatgrass and native grasses and decrease Kentucky bluegrass. ➢ 80% at mid seral stage (planted-invaded state) and 20% at invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 364, of which 322 AUMs are summer use and the remainder are winter use. • Focus on early use of crested wheatgrass in Pastures 2 and 3. This would aid in drawing livestock away from woody draw. • **Develop a rangeland well in either Pasture 2 or 3. Locate a stock tank on the fence line separating Pastures 2 and 3.**	• Rest crested wheatgrass pastures every other year to achieve high structure objective. • Fence the woody draw. • Adjust authorized use. • **Continue use of temporary fencing to defer use of native grasses intermingled with crested wheatgrass in pasture.**
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in less livestock disturbances and grazing intensity, thus providing an opportunity for improved woody draw conditions and an increase in high herbaceous structure. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 136, for more details.	

Allotment 133	
Objectives • Maintain proper functioning condition on Blacktail Creek. • Increase the survival of seedlings/saplings, and stimulate shrub layers on green ash hardwood draws. ➢ 33% healthy and 67% at risk. • Manage for additional high structure on biologically capable habitats. ➢ 50% low, 50% moderate, and 0% high structure. • Manage to maintain crested wheatgrass and native grasses while limiting or decreasing Kentucky bluegrass and smooth brome. ➢ One sample at mid seral stage and at planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 198 • As needed, graze Pastures 1 and 2 early to stimulate crested wheatgrass.	• Fence a woody draw. • Stimulate crested wheatgrass through application of fire, mowing, haying,

• After coming from Blacktail Common, implement a two-pasture, fall-deferred rotation.	fertilization, etc. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreased levels of livestock browsing and trailing disturbances, thereby assisting the regeneration of desired trees and shrubs. A move toward a more balanced herbaceous structure distribution could also occur. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 149, for more details.	

Allotment 133D5	
Objectives • Limit the expansion or increase of invasive smooth brome and Kentucky bluegrass. ➢ One sample at invaded state.	
Initial Actions	**Adaptive Options**
• Continue current management, which involves haying 75% (60 acres) of the allotment one year and then haying the remaining 25% (20 acres) the next year.	• If management changes to allow livestock grazing, authorized use is 35 AUMs. • Adjust authorized use.
Monitoring • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 5 to 10 years.	
Decision Rationale The actions as presented above have the most potential to maintain the identified objective, because initially they would result in no change in current management, which has been identified to meet all objectives or not contribute toward a negative trend. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 154–156, for more details.	

Allotment 134
Objectives • Maintain proper functioning condition on Whitetail Creek. • Increase the survival of seedlings/saplings in green ash hardwood draws. ➢ 71% healthy, 15% at risk, and 14% unhealthy. • Manage for additional low and high structure on biologically capable habitats. ➢ 0% low, 100% moderate, and 0% high structure. • Manage to increase mid and late seral stages, and limit or decrease invasive grasses. ➢ One sample at mid seral stage and a planted-invaded state.

Initial Actions	Adaptive Options
• **Authorized federal AMs: 254** • Implement a twice-over grazing system annually, changing season of use within the rotation. • Alternate salt placement in Pasture 3 from one side of Whitetail Creek to the other at midpoint of grazing season or as needed.	• Implement a once-over deferred rotation. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in the potential for increased available forage by allowing for initial growth or regrowth in pastures every year. Also, the later used pastures may not have potential for regrowth, thereby providing opportunities for increasing both low and high herbaceous structure. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 165-167, for more details.	

Allotment 135	

Objectives
• Start Mikes Creek on upward trend toward proper functioning condition.
• Maintain current green ash hardwood draw conditions.
  ➢ 100% healthy.
• Manage for additional moderate and high structure on biologically capable habitats.
  ➢ 60% low, 40% moderate, and 0% high structure.
• Manage to increase the proportion of late seral stage and limit or decrease invasive grasses.
  ➢ 22% early and 88% mid seral stage. 33% at native state and 67% at native-invaded state.	

Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 1,559 • Initiate prescribed burning or mechanical treatment of encroaching juniper. • Implement a five-pasture deferred rotation with one herd (eliminate yearling herd) in Pastures 6, 7, 8, 9, and 10; improve and/or add boundary fence between Pastures 9 and 10. • In Pastures 8 and 9, on Mikes Creek, construct 64- and 40-acre riparian exclosures, respectively. No grazing of exclosures for first 5 years. • **Use artesian well in Pasture 8 to supply water in Pastures 8, 9, and 10 with**	• Adjust authorized use. • Herding.

pipeline system and tanks, or drill new well with shorter pipeline system and tanks.
• **Riparian Exclosure: At the end of Year 5, conduct vegetation survey. If riparian vegetation has been established on 60% of stream banks and active stream cutting has ceased, then initiate late- or dormant-season prescribed grazing. Prescribed grazing would be identified in annual operating instruction.**
• **Once Pasture 9 riparian exclosure has healed, consider moving exclosure to another unprotected, adversely affected reach within the pasture.**
• **Mikes Creek:**
  • **Pasture 10 – Construct two exclosures of 17 and 12 acres (Reaches 19 and 20).**
  • **Pasture 9 – Construct four exclosures of 12, 19, 13, and 16 acres in Reaches 21, 22, 23, and 24, respectively.**
  • **Pasture 8 – Construct two exclosures of 20 and 23 acres in Reaches 25 and 28, respectively.**	

Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition and production data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in the best opportunity for riparian vegetation to reestablish itself in the least amount of time and would increase the potential for recovery of the nonfunctional stream reaches. Initiating an upward trend in the proper functioning condition area of Mikes Creek is paramount in this allotment. A decreased grazing intensity would increase the amount of residual standing crop, and a deferred rotation system should begin to provide opportunities for improved herbaceous structure distribution. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 189–191, for more details.	

Allotment 136/139	
Objectives • Increase the survival of seedlings/saplings in green ash hardwood draws. ➢ 40% healthy, 40% at risk, 20% unhealthy. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% in moderate, and 0% in high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 20% early, 40% mid seral stages (native-invaded and planted-invaded state), and 40% at invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 285 • Use crested wheatgrass pastures (Pastures 136-1 and 139-1) as early season pastures. • Develop range water source, and construct a rangeland pipeline in Pasture 136-2 to replace lost water source located on adjacent private property.	• Fence a woody draw. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreased levels of livestock browsing and trampling disturbances, thus increasing the potential for woody species regeneration and improved woody draw conditions. Decreased livestock use should contribute to improved herbaceous structure distribution by maintaining crested wheatgrass tiller density and standing crop and by facilitating increased vigor of native grasses. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 203, for more details.	

Allotment 140	
Objectives • Maintain proper functioning condition on Blacktail Creek. • Increase successful recruitment of woody species in green ash hardwood draws. ➢ 100% at risk. • Manage for additional high structure on biologically capable habitats. ➢ 50% low, 50% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 100% at mid seral stages and planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 237 • Annually change season of use between Allotment 140 Pasture 4 and Allotment 230 Pasture 2.	• Initiate a three-pasture deferred rotation between Pastures 1, 4, and 5. • Use a rangeland drill to interseed Pasture 4 with native grass species.

• Annually change season of use between Pastures 1 and 5. • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.**	• Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreased levels of livestock browsing and trampling disturbances, thus facilitating increased growth and regeneration of desired woody species. Decreased livestock use would potentially promote retention of residual cover, contributing to improved herbaceous structure. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 213 and 216, for more details.	

Allotment 141	
Objectives • Maintain proper functioning condition on Green River. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ One sample at mid seral stage and planted-invaded state.	
Initial Actions	**Adaptive Options**
• **Authorized federal AMs: 177** • Continue to annually rotate season of use between Pastures 1 and 3. • Start deferred rotation May 1 in 1 of 4 years.	• Assess species composition to determine effectiveness of periodic early grazing period. • Adjust authorized use.
Monitoring • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the potential to move toward the identified objectives, because they would result in continued desired conditions on Green River. Early use of pastures should increase the potential for regrowth 1 in 4 years, thus providing opportunities to improve herbaceous structure distribution. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 224 (Riparian) and p. 226 (Herbaceous Structure), for more details.	

Allotment 142	
Objectives • Increase successful recruitment of woody species in green ash hardwood draws. ➢ 40% healthy and 60% at risk • Manage for additional high structure on biologically capable habitats. ➢ 0% low, 100% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 100% at mid seral stage and native-invaded and planted-invaded state.	
Initial Actions	**Adaptive Options**
• **Authorized federal AMs: 167** • Implement two-pasture deferred rotation, but defer start in Pasture 1 until June 1 and in Pasture 2 (crested wheatgrass) until May 15. • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.**	• Adjust authorized use. • Remove fence between Pastures 1 and 2, and annually change season of use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the potential to move toward the identified objectives, because they would result in the opportunity for recovery by desired graminoid species, thus providing the potential for increased high herbaceous structure. Fencing out a woody draw would decrease livestock browsing and trampling disturbances, thus increasing the potential for improvement in woody draw conditions. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 233 (Range Initial Actions) and p. 234 (Woody Draws Adaptive Options), for more details.	

Allotment 158	
Objectives • Increase successful recruitment of woody species in green ash hardwood draws. ➢ 69% healthy, 23% at risk, 8% unhealthy. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 78% low, 22% moderate, and 0% in high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 100% at mid seral stage, 20% at native state, 60% at native-invaded state, and 20% at planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 1,527 • Annually change season of use within the grazing rotation.	• Fence a woody draw. • Add Allotment 249 into the grazing rotation.

• Utilize crested wheatgrass in Pasture 4 as an early season pasture. • Continue use of once-over deferred grazing rotation. • Recommend relocation of winter feeding from National Forest to private pastures. • **Utilize prescribed fire on encroaching juniper.**	• Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreased competition between deciduous woody species and the junipers, improving seedbed conditions and promoting regrowth of green ash hardwood draw species. The actions would also result in a positive improvement in herbaceous structure. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 250 and pp. 254–255, for more details.	

Allotment 220	
Objectives • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% moderate, and 0% high structure. • Assess practicality (monitor) of managing for high herbaceous structure given the capability of the allotment. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 80% at mid seral stage (native-invaded state) and 20% at invaded state.	
Initial Actions	**Adaptive Options**
• **Authorized federal AMs: 160** • Continue to annually change season of use within the grazing rotation.	• Adjust authorized use.
Monitoring • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above will provide the opportunity to monitor and assess whether or not there is an ability to provide high structure within this allotment. In general, neither decreases nor increases in authorized use would be effective in controlling invasive species or increasing the native species component without a major change in the Grazing Plan. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 260–261, for more details.	

Allotment 221	
Objectives • Increase successful recruitment of woody species in green ash hardwood draws. ➢ 100% at risk. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% moderate, and 0% high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 75% at mid seral stage (planted-invaded state) and 25% at invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 174 • Initiate three-pasture deferred rotation with grazing commencing May 1. • Locate stock tank on fence line between Allotment 221 Pasture 3 and Allotment 272 Pasture 2. Tank would be supplied from proposed rangeland pipeline located in Allotment 272 Pasture 2.	• Remove fence between Allotment 221 Pasture 3 and Allotment 272 Pasture 2; adjust authorized use in both allotments to reflect removal of Allotment 221 Pasture 3. • Burn, mow, hay, or interseed to improve stand vigor and/or species composition. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreased levels of livestock browsing and trampling disturbances, thus facilitating increased regeneration of desired trees and shrubs. Also, the actions provide the potential to begin movement toward a balanced representation of herbaceous structure, particularly high herbaceous structure, by providing longer periods of regrowth in the first pasture in the rotation. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 274, for more details.	

Allotment 230	
Objectives • Maintain proper functioning condition on Blacktail Creek. • Increase successful recruitment of woody species in green ash hardwood draws. ➢ 67% healthy and 33% at risk. • Manage for additional high structure on biologically capable habitats. ➢ 50% low, 50% moderate, and 0% in high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 50% early and 50% mid seral stages. Native-invaded and planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 358 • Create a four-pasture deferred rotation utilizing Allotment 230 Pasture 1, Allotment 288 Pasture 2, Allotment 256	• Fence a woody draw in Pasture 1. • Adjust authorized use.

Pasture 2, and the proposed riparian pasture in Allotment 256. • Annually change season of use between Allotment 140 Pasture 4 and Allotment 230 Pasture 2.	
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in a movement toward improved herbaceous structure distributions. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 288, for more details.	

Allotment 237	
Objectives • Maintain proper functioning condition in Blacktail Creek. • Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws. ➢ 60% healthy and 40% at risk. • Manage for additional low and high structure on biologically capable habitats. ➢ 0% low, 100% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 100% mid seral stages, native-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 250 • Utilize Pasture 3 early, and change season of use in the remaining two pastures. • **Extend existing rangeland pipeline into Pasture 1, and add a stock tank.**	• Fence a woody draw. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in movement toward an improved representation of herbaceous structure. The additional stock tank would also benefit riparian conditions along Blacktail Creek by pulling livestock away from the riparian corridor and potentially away from adjacent woody draws. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 297 and 300, for more details.	

Allotment 239	
Objectives • Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws. ➢ 100% at risk. • Manage allotment to maintain structure objectives. • Increase establishment of native grasses, and decrease or limit invasive grasses. ➢ Four samples, all at invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AMs: 250 • Construct temporary north/south electric fence, and implement a deferred rotation. • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.**	• Compress season and alter season of use. • Construct a rangeland fence(s) dividing the allotment into quarters, and implement a deferred-rotation grazing system. Additional livestock water would also need to be developed once fencing was completed. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in removing or decreasing livestock browsing and trampling disturbances and would facilitate regeneration of desired woody species while balancing the potential livestock use in other woody draws by moving the exclosure fence to another woody draw as recovery occurs. These actions would also allow for the persistence of herbaceous structure levels; however, monitoring will be necessary to ensure a balance of structure levels so as not to potentially decrease the amount of low structure. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 308, 309, and 311–313, for more details.	

Allotment 240	
Objectives • Maintain proper functioning condition on North Creek and Spring Creek. • Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws. ➢ 30% healthy and 70% at risk. • Manage for additional high structure on biologically capable habitats. ➢ 33% low, 67% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 78% mid seral (native-invaded state) and 22% invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 876 • Create dependable water in Pasture 1 that would allow for a three-pasture deferred rotation. • Reclaim reservoir(s) in Pasture 1.	• Utilize Pasture 4 for early summer grazing 1 out of every 4 years. • Adjust authorized use.

• **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.** • **Complete use in Pasture 4 by March 15.**	
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of regeneration of desired woody species by removing or decreasing livestock browsing and trampling disturbances. Also, these actions should result in a positive improvement in overall herbaceous structure distribution by adjusting authorized use downward and providing periods of regrowth. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 324, 325, and 329, for more details.	

Allotment 241	
Objectives • Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws. ➢ 17% healthy and 83% at risk. • Manage allotment to maintain structure objectives. • Manage to increase late seral stages, and limit or decrease invasive grasses. ➢ 25% mid seral (native-invaded state) and 75% invaded state.	
Initial Actions	**Adaptive Options**
• **Authorized federal AMs: 359** • Continue to monitor the woody draw bottom in Pasture 7 to establish what is causing the adverse effects. • Fence out a woody draw in Pasture 1, and monitor response. • **Use prescribed fire in woody draws of Pastures 1 and 7 to treat a portion of the stand, and then fence the treated area**.	• Use Pasture 1 in summer rotation. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	

Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of regeneration of desired woody species and increasing woody draw conditions by removing or decreasing livestock browsing and trampling disturbances while providing information for increasing regeneration of woody species at this site and others. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 338 and 339, for more details.

Allotment 243	

Objectives
• Increase seedling/sapling understory survival in green ash hardwood draws.
  ➢ 67% healthy and 33% at risk.
• Manage allotment to maintain structure objectives.
• Manage to increase mid and late seral stages, and limit or decrease invasive grasses.
  ➢ 25% mid seral (native-invaded state) and 75% invaded state.	

Initial Actions	**Adaptive Options**
• **Authorized federal AMs: 375** • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.** • Implement two-pasture deferred rotation.	• Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of regeneration of desired woody species and increasing woody draw conditions by removing or decreasing livestock browsing and trampling disturbances. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 351, for more details.	

Allotment 244

Objectives
• Move Whitetail Creek back toward proper functioning condition.
• Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws.
  ➢ 75% healthy and 25% at risk.
• Manage for additional moderate and high structure on biologically capable habitats.
  ➢ 100% low, 0% moderate, and 0% high structure.
• Manage to increase early and late seral stages, and limit or decrease invasive grasses.
  ➢ One sample at mid seral stage and planted-invaded state.

Initial Actions	Adaptive Options
• **Authorized federal AUMs: 241** • Cross fence Pasture 2, north to south. Cross fencing will create a crested wheatgrass pasture on the east side of Pasture 2, which will be grazed early. The additional pasture, created through the cross fence, allows the implementation of a two-pasture deferred grazing rotation between remaining pastures.	• Treat Pasture 2 (west) as a riparian pasture, grazing it from 15 to 30 days per year maximum. • Fence a woody draw. • Move the south boundary fence to Whitetail Road. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in decreasing overall forage consumption in the uplands and riparian areas, providing reduced overland flow, which would reduce stream velocities and allow for establishment of riparian vegetation to build stream banks. These actions would also provide longer recovery intervals between grazing periods, thus benefiting riparian conditions. By decreasing livestock browsing and trampling disturbances, the actions would assist the regeneration and growth of desired woody species. Finally, by increasing residual cover, the potential for increasing the proportion of high herbaceous structure and improving the overall herbaceous structure distribution would occur. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 362–363 (Riparian), p. 364 (Herbaceous Structure), and p. 366 (Woody Draws), for more details.	

Allotment 248	
Objectives • Manage allotment to maintain structure objectives. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 25% mid seral stage (native-invaded state) and 75% invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AMs: 312 • Implement a two-pasture deferred rotation starting May 1.	• Monitor species composition, and adjust season of use if initial action does not decrease Kentucky bluegrass. • Adjust authorized use.
Monitoring • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would address the mixed plant composition of native and introduced species. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 375.	

Allotment 249	
Objectives • Maintain current green ash hardwood draw conditions. ➢ 100% healthy. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ One sample at mid seral stage and native state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 194 • Manage existing tank system to rotate use. • Change season of use – alternate turn-in dates over a 3-year period. First year turn in starts June, second July, and third August. • Rotate salt and supplement to draw livestock off ridge tops. • **Add a stock tank in the southwest quarter of allotment, or move a tank to southwest quarter.**	• Compress season of use. • Adjust authorized use. • Add Allotment 158 into the grazing rotation.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in a positive improvement in overall herbaceous structure distribution by adjusting authorized use downward and would provide periods of regrowth in areas of the allotment as the livestock grazing pressure is reduced. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 383–384, for more details.	

Allotment 256	
Objectives • Start Blacktail Creek and its unnamed tributary back toward proper functioning condition. • Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws. ➢ 50% healthy and 50% at risk • Manage for additional high structure on biologically capable habitats. ➢ 43% low, 57% moderate, and 0% high structure. • Manage to increase early seral stage, and limit or decrease invasive grasses. ➢ 70% at mid and 25% at late seral stages. All at native-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 1,678, with 154* of these federal AUMs suspended until monitoring shows objectives are being met.	• Fence a woody draw. • Utilize herding to move livestock off of Blacktail Creek. • In Pasture 2, create water gaps. Harden

• Construct approximately 1.5 miles of fence south of Blacktail Creek in Pasture 2 to create a riparian pasture. • Drill a stock well in the northwest quarter of Section 24 in Pasture 2; construct approximately 1.5 miles of water pipeline to supply two stock tanks, one located in the new riparian pasture and one in the southeast quarter of Section 24. • Create a four pasture-deferred rotation utilizing Allotment 230 Pasture 1, Allotment 288 Pasture 2, Allotment 256 Pasture 2, and the proposed riparian pasture in Allotment 256. • Fence existing reservoir and portion of adjacent woody draw in Section 25 in Pasture 2. • In Pasture 3, on Blacktail Creek, construct a 76-acre riparian exclosure. No grazing of exclosure for first 3 years. If, after 3 years, the riparian vegetation is sufficiently recovered, grazing may be authorized on a limited basis. • In Pasture 3, utilize drift fences, native materials, i.e., encroaching juniper trees and rocks, to control access to Blacktail Creek. *Suspend waived 154 AUMs associated with Pasture 3 that have been historically non-used.	gaps and trail crossing on Blacktail Creek in Section 24. • Create riparian pasture in Pasture 3. • Riparian Exclosure: At the end of Year 3, conduct vegetation survey. If survey reveals that vegetation and stream channel condition can withstand some grazing, initiate a late- or dormant-season compressed prescribed graze. Prescribed grazing would be identified in the annual operating instruction. • Construct three riparian exclosures in Pasture 2 on Blacktail Creek. The exclosures are 38, 19, and 27 acres in size, in Reaches 14, 15, and16, respectively. • In Pasture 3, construct a 23-acre riparian exclosure on Blacktail Creek (Reach 18). • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in reestablishment of riparian vegetation that protects stream banks and channels from erosion. They would reduce livestock browsing and trampling disturbances, thereby providing potential for improved woody draw conditions. The actions would also provide for potential positive changes in residual cover, thereby moving herbaceous structure toward project objectives. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 406–407, for more details.	

<table>
<tr><th colspan="2">Allotment 258</th></tr>
<tr><td colspan="2">Objectives
• Move functioning at risk-downward trend reach of Ash Coulee Creek toward proper functioning condition.
• Maintain current green ash hardwood draw conditions.
➢ 86% healthy and 14% at risk.
• Manage for additional moderate and high structure on biologically capable habitats.
➢ 60% low, 40% moderate, and 0% high structure.
• Manage to increase early seral stage, and limit or decrease invasive grasses.
➢ 80% mid and 20% late seral stages. All at native-invaded state.</td></tr>
<tr><td>Initial Actions</td><td>Adaptive Options</td></tr>
<tr><td>• Authorized federal AUMs: 1,694
• Manage livestock tank system to better distribute livestock.
• Extend pipeline proposed in Allotment 136, and place a livestock tank in north-central portion of Pasture 1 to draw cattle away from Ash Coulee Creek.
• Create a 3-acre riparian exclosure by installing a fence in the southwest quarter of the northeast quarter of Section 13 north of Ash Coulee Creek; allow prescribed grazing once riparian area has reached proper functioning condition (or if excess litter builds up) as directed by the annual operating instruction.</td><td>• Fence a woody draw.
• Add a tank to the existing rangeland pipeline in the southwest quarter of Section 7.
• Adjust authorized use.</td></tr>
<tr><td colspan="2">Monitoring
• Survey woody draws once every 3 to 5 years.
• Gather visual obstruction readings once every 3 years.
• Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established.
• Collect vegetative composition data once every 3 to 5 years.</td></tr>
<tr><td colspan="2">Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in improved uplands vegetation, which in turn reduces overland flow and would benefit the riparian condition. They would also provide the potential for the improvement in herbaceous structure distribution.</td></tr>
</table>

Allotment 272	
Objectives • Promote seedling/sapling survival in green ash hardwood draws. ➢ Two draws in allotment –50% at risk and 50% unhealthy. • Manage for additional high structure on biologically capable habitats. ➢ 50% low, 50% moderate, and 0% high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 60% at mid seral stage (native-invaded state) and 40% at invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 1,472 • Fence woody draw located in the southwest quarter of Section 30 in Pasture 2 with a temporary electric fence. • Construct 2.25 miles of rangeland water pipeline (also see Allotment 221) starting at the wellhead in Section 33 Pasture 1, and install one livestock tank in Section 29 and one in Section 30. • Manage tank system to rotate use in Pasture 1.	• Fence additional area in woody draw in Pasture 2. • Extend rangeland water pipeline, and install a livestock tank in Section 28 and Section 33. • Fence or remove dugouts and reservoirs, as necessary, to control animal distribution. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in removal of livestock browsing and trampling disturbances and facilitate the regeneration of desired trees and shrubs. Overall herbaceous structure distribution should also be improved. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 436 (Woody Draws) and p. 441 (Herbaceous Structure), for more details.	

Allotment 277
Objectives • Determine why the lower reach of Scairt Woman Draw is nonfunctional. Maintain proper functioning condition on Magpie and North creeks. • Establish tree regeneration and seedling/sapling survival in green ash hardwood draws. ➢ 50% healthy, 42% at risk, and 8% unhealthy. • Manage for additional high structure on biologically capable habitats. ➢ 17% low, 83% moderate, and 0% high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 63% at mid seral stage (native-invaded and planted-invaded states), 12% at late seral stage (native state), and 25% at invaded state.

Initial Actions	Adaptive Options
• Authorized federal AUMs: 1,243 • Install stock tank in Section 24 that would be supplied from the existing pipeline located in Pasture 1. • Fence dam in southeast quarter of southwest quarter of Section 24 in Pasture 1 to control livestock access to water. • Maintain current twice-over grazing system. • Continue to manage tanks to distribute livestock. • Continue to monitor Scairt Woman Draw to determine the cause of its nonfunctional status. • Move hay lot in Pasture 5 from present location to the southwest corner of the pasture. • **Install a stock tank in Pasture 2.**	• Fence a woody draw. • Adjust grazing system if structure and plant composition objectives are not met. • Adjust stocking level to account for underutilized invasive grass component and/or overutilized native grass component. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in better control of livestock distribution by controlling where water is available for livestock, thereby promoting areas of use and areas of regrowth where more residual cover could be attained for increased herbaceous structure. They would also have the potential for improving woody draw conditions by decreasing livestock browsing and trampling disturbances. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 453–455, for more details.	

Allotment 278

Objectives
• Maintain proper functioning condition on Whitetail Creek.
• Increase seedling/sapling understory, and enhance shrubs in green ash hardwood draws.
  ➢ 50% at risk and 50% unhealthy.
• Manage for additional low and high structure on biologically capable habitats.
  ➢ 0% low, 100% moderate, and 0% high structure.
• Manage to increase mid and late seral stages, and limit or decrease invasive grasses.
  ➢ Two samples at early seral stages and planted-invaded state.

Initial Actions	Adaptive Options
• Authorized federal AUMs: 230 • Utilize Pastures 1, 2, and 3 as crested wheatgrass pastures. • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.**	• Rehabilitate or fence reservoir in Pasture 2. • Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of the regeneration of desired woody species and improved conditions by removing livestock disturbances such as browsing and trampling. These actions would also begin to adjust the herbaceous structure toward project objectives. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 466–467, for more details.	

Allotment 281	

Objectives
• Increase successful recruitment of woody species in green ash hardwood draws.
  ➢ 20% healthy, 60% at risk, and 20% unhealthy.
• Manage for additional moderate and high structure on biologically capable habitats.
  ➢ 100% low, 0% moderate, and 0% high structure.
• Manage to increase early and late seral stages, and limit or decrease invasive grasses.
  ➢ One sample at mid seral stage and planted-invaded state.	

Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 270 • Develop water source in northeast corner of Pasture 1 to draw livestock away from woody draws. • Annually change season of use in the grazing rotation. • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.**	• Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Collect vegetative composition data once every 3 to 5 years.	

Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of increased woody draw regeneration by decreasing livestock browsing and trampling disturbances. These actions would also begin to adjust the herbaceous structure toward project objectives due to increased levels of residual cover. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 479, for more details.

Allotment 282

Objectives
- Fantail Creek is still being affected by a natural event. At this point, no action is necessary. Need to start Whitetail and Magpie creeks on an upward trend toward proper functioning condition.
- Maintain current green ash hardwood draw conditions.
  - 81% healthy and 19% at risk.
- Manage allotment to maintain structure objectives.
- Manage to increase early seral stage, and limit or decrease invasive grasses.
  - 8.5% early, 58% mid, 25% late, and 8.5% invaded grass state.
  - 8.5% native state, 8.5% planted state, 75% native-invaded state, and 8% invaded state.

Initial Actions	Adaptive Options
• **Authorized federal AMs: 2,123** • Move Pasture 5 boundary fence to ridge top in the southeast portion of Pasture 5. • Continue modified deferred-rotation system, changing season of use within the rotation. • Manage water tanks to better distribute use along Magpie Creek. • Reduce sagebrush encroachment on terrace along east side of Pasture 6. • Move fence from northeast corner of Pasture 5 to the west. • In Pasture 6, on Lower Magpie Creek, construct a 167-acre riparian exclosure with no grazing for first 3 years. If, after 3 years, the riparian vegetation is sufficiently recovered, grazing may be authorized on a limited basis.	• Fence a woody draw. • Create a riparian pasture through construction of a fence south of Magpie Creek in Sections 4, 5, and 6. • If created, the riparian pasture would require an additional water source. • If riparian vegetation has been established on 80% of stream banks and active stream cutting has ceased occurring, then initiate late- or dormant-season prescribed grazing. Prescribed grazing would be identified in annual operating instruction. • Construct 92- and 178-acre riparian exclosures on Magpie Creek in Pasture 6. The 92-acre exclosure is located in Sections 4, 5, and 9 (Reach 5). The 178-acre exclosure is located in Sections 6 and 1 (Reach 8). • Adjust authorized use.

Monitoring
- Survey woody draws once every 3 to 5 years.
- Gather visual obstruction readings once every 3 years.
- Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established.
- Collect vegetative composition data once every 3 to 5 years.

Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in the best opportunity for riparian vegetation to reestablish itself in the least amount of time, stabilizing and building stream banks. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 500 (Riparian), for more details.

Allotment 283	
Objectives • Maintain proper functioning condition on Whitetail Creek. • Maintain current green ash hardwood draw conditions. ➢ 100% healthy. • Manage for additional high structure on biologically capable habitats. ➢ 50% low, 50% moderate, and 0% high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 33% early and 67% mid seral stages, all at planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AMs: 300 • Continue current management system (winter grazing/feeding for herd coming from common, Allotment 301) and monitor. • Develop rangeland well, which may be located in this allotment or Allotment 300. Construct a water pipeline to supply two stock tanks. A stock tank would be located in each allotment. **Stock tank to be located in northwestern end of Pasture 4.**	• Adjust authorized use.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 5 years. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in maintenance of desired conditions for both riparian and woody draw areas. Also, because it does not appear that adjusting authorized use, at least initially, would affect herbaceous structure and by placing the stock tank near the existing water source, changes to herbaceous structure are expected to be minimal due to already established livestock distribution around the existing water sources. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 512–513, for more details.	

Allotment 286	
Objectives • Start on upward trend in proper functioning condition on Betsy Creek. • Increase successful recruitment of woody species in green ash hardwood draws. ➢ The single woody draw is at risk. • Manage for additional moderate and high structure on biologically capable habitats. ➢ 100% low, 0% moderate, and 0% high structure. • Manage to increase late seral stage, and limit or decrease invasive grasses. ➢ 33% early and 67% mid seral stages, all at planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 236 • Implement three-pasture deferred rotation. • Construct water lot between Pastures 2 and 3. • **Fence half of the woody draw; evaluate its effectiveness as needed. Consider rotating fence to other half once initial fenced area has recovered.**	• Construct water lot between Pastures 1 and 3. • Adjust authorized use. • Mechanically treat clubmoss to promote native grass species.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in minimized livestock disturbances and improved uplands vegetation. This would reduce overland flow and stream velocities, allow for the establishment of riparian vegetation, build stream banks, facilitate regeneration of desired woody species, and begin to adjust the herbaceous structure distribution toward project objectives. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 524 (Riparian) and p. 525 (Herbaceous Structure), for more details.	

Allotment 287
Objectives • Start unnamed tributary of Blacktail Creek back toward proper functioning condition. • Promote survival of seedling/saplings and shrubs in green ash hardwood draws. ➢ 33% healthy, 50% at risk, and 17% unhealthy. • Manage allotment to maintain structure objectives. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ One sample at mid seral stage and native-invaded state.

Initial Actions	Adaptive Options
• Authorized federal AUMs: 577 • Manage stock tanks to draw livestock away from woody draws and to control distribution. • Maintain current grazing system, but change season of use within rotation.	• Fence a woody draw. • Use fencing to improve upon natural barrier separating Pastures 2 and 3 to control livestock access. • Add livestock tank in north half of Section 26 in Pasture 3, and manage stock tanks to control livestock distribution. • Adjust authorized use. • Fence reservoir in Pasture 3.
Monitoring • Survey woody draws once every 3 to 5 years. • Gather visual obstruction readings once every 3 years. • Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established. • Collect vegetative composition data once every 3 to 5 years.	
Decision Rationale The actions as presented above have the most potential to move toward the identified objectives, because they would result in improvement in the uplands vegetation, thus reducing overland flow and further benefitting riparian conditions. They could also provide a slight benefit to woody draw conditions. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 543 (Riparian and Woody Draws), for more details.	

Allotment 288	
Objectives • Increase seedling and sapling survival and tall shrub layers in green ash hardwood draws. ➢ 100% at risk. • Manage for additional high structure on biologically capable habitats. ➢ 50% low, 50% moderate, and 0% high structure. • Manage to increase early and late seral stages, and limit or decrease invasive grasses. ➢ 100% at mid seral stages, all at native-invaded and planted-invaded state.	
Initial Actions	**Adaptive Options**
• Authorized federal AUMs: 216 • Create a four-pasture deferred rotation utilizing Allotment 230 Pasture 1, Allotment 288 Pasture 2, Allotment 256 Pasture 2, and the proposed riparian pasture in Allotment 256. • Manage stock tanks to control livestock distribution. • **Fence a woody draw; evaluate its effectiveness as needed. Consider rotating fence to another woody draw once initial woody draw has recovered.**	• Utilize a temporary electric fence to diagonally fence Pasture 2 northwest to southeast to create crested wheatgrass pasture. • Adjust authorized use.

Monitoring
- Survey woody draws once every 3 to 5 years.
- Gather visual obstruction readings once every 3 years.
- Collect vegetative composition data once every 3 to 5 years.

Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of increased woody draw conditions by decreasing the level of browsing and trampling disturbances. These actions would also increase residual cover levels that are projected to improve the herbaceous structure. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 551, 552, and 554 (Woody Draws and Herbaceous Structure), for more details.

Allotment 289

Objectives
- Maintain proper functioning condition on North Creek. Maintain Scairt Woman Draw at proper functioning condition, and move National Forest portion toward proper functioning condition.
- Improve seedling regeneration and sapling and shrub survival in green ash hardwood draws.
  - 45% healthy, 33% at risk, and 22% unhealthy.
- Manage for additional moderate and high structure on biologically capable habitats.
  - 75% low, 25% moderate, and 0% high structure.
- Manage to increase early and late seral stages, and limit or decrease invasive grasses.
  - 90% mid and 10% late seral stages, all at native-invaded state.

Initial Actions	Adaptive Options
• Authorized federal AUMs: 1,862 • In Pasture 3, manage livestock tanks to more effectively draw cattle away from woody draws. • Add pipeline and a stock tank in both Pastures 2 and 3.	• Fence a woody draw. • Split Pasture 3 with a north/south fence, and implement a three-pasture deferred rotation. • Adjust authorized use.

Monitoring
- Survey woody draws once every 3 to 5 years.
- Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency.
- Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established.
- Collect vegetative composition data once every 3 to 5 years.

Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in moving livestock concentrations away from the riparian stream corridors, thus minimizing trailing and trampling in the riparian area and allowing for herbaceous and woody riparian vegetation recovery. These actions would also reduce livestock use. This reduction in use would leave more residual cover and thereby move toward or meet herbaceous structure distribution. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 566 (Riparian) and p. 572 (Herbaceous Structure), for more details.

<table>
<tr><th colspan="2">Allotment 300</th></tr>
<tr><td colspan="2">Objectives
• Move functioning at risk-downward trend reach of Magpie Creek toward proper functioning condition.
• Increase successful recruitment of woody species in green ash hardwood draws.
➢ 50% healthy and 50% at risk.
• Manage for additional moderate and high structure on biologically capable habitats.
➢ 67% low, 33% moderate, and 0% high structure.
• Manage to increase early and late seral stages, and limit or decrease invasive grasses.
➢ 100% at mid seral stage and native-invaded state.</td></tr>
<tr><td>Initial Actions</td><td>Adaptive Options</td></tr>
<tr><td>• Authorized federal AUMs: 524
• Develop rangeland well, which may be located in this allotment or Allotment 283. Construct a water pipeline to supply two stock tanks. A stock tank would be located in each allotment.
• Fence and reclaim spring in the southeast quarter in Section 28.
• Rehabilitate entrenched livestock trails inside the water lot located in the northeast corner of the allotment (limit access to water lot until riparian vegetation is reestablished).
• Remove fence on west side of livestock alleyway in Section 27.</td><td>• Cross fence allotment, dividing the allotment into two pastures.
• Extend pipeline by three-quarters of a mile from new tank in Section 28 toward Magpie Creek, and add a stock tank in Section 27. Rehabilitate water lot.
• Adjust authorized use.</td></tr>
<tr><td colspan="2">Monitoring
• Survey woody draws once every 3 to 5 years.
• Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency.
• Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established.
• Collect vegetative composition data once every 3 to 5 years.</td></tr>
<tr><td colspan="2">Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in minimized livestock trailing, trampling, and loafing, allowing for herbaceous and woody riparian vegetation recovery along Magpie Creek. Lentic riparian habitat would also reestablish over time as a result by reclaiming the spring development. These actions would also decrease erosion problems and livestock browsing and trampling disturbances to provide some potential for improved woody draw conditions. They would also contribute to achieving or moving toward structure objectives. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 582, 586, and 587, for more details.</td></tr>
</table>

<table>
<tr><th colspan="2">Allotment 301</th></tr>
<tr><td colspan="2">Objectives
• Need to move functioning at risk-downward trend reach toward proper functioning condition on Magpie Creek.
• Increase successful recruitment of woody species in green ash hardwood draws.
➢ 47% healthy, 35% at risk, and 18% unhealthy.
• Manage for additional high structure on biologically capable habitats.
➢ 22% low, 78% moderate, and 0% high structure.
• Manage to increase early and late seral stages, and limit or decrease invasive grasses.
➢ 73% mid and 9% late seral stage (11% native state and 89% native-invaded state) and 18% invaded state.</td></tr>
<tr><td>Initial Actions</td><td>Adaptive Options</td></tr>
<tr><td>• Authorized federal AUMs: 1,734
• Repair existing water developments that would offer more management opportunities.
• Install a cross fence in Pasture 1, and implement a four-pasture deferred rotation.
• Fence out two spring areas, and install check valve to dump water back into riparian areas once stock tanks are full.
• Move existing water tanks away from seeps/boggy areas.</td><td>• Increase livestock numbers, and shorten season of use.
• Construct a 42-acre riparian exclosure on Magpie Creek in Pasture 1, Section 20 (Reach 1).
• Adjust authorized use.</td></tr>
<tr><td colspan="2">Monitoring
• Survey woody draws once every 3 to 5 years.
• Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency.
• Complete proper functioning condition survey once every 3 years and then once every 5 years if a positive trend has been established.
• Collect vegetative composition data once every 3 to 5 years.</td></tr>
<tr><td colspan="2">Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in the improvement of riparian conditions by minimizing livestock trailing and trampling and allow for herbaceous and woody riparian vegetation recovery. Additionally, the actions should improve uplands vegetation, thus reducing overland flow and further benefiting the riparian conditions. These actions would also decrease livestock browsing and trampling disturbances, thus facilitating improvements in woody draw conditions. They would also increase the amount of residual cover near the end of the grazing season, which would contribute toward improved herbaceous structure distribution. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, pp. 601–603 and 607 (Herbaceous Structure) for more details.</td></tr>
</table>

<table>
<tr><th colspan="2">Allotment 302</th></tr>
<tr><td colspan="2">Objectives
• Maintain proper functioning condition on Magpie Creek.
• Increase survival rate for seedlings and saplings in green ash hardwood draws.
➢ 50% healthy, 40% at risk, and 10% unhealthy.
• Manage for additional moderate and high structure on biologically capable habitats.
➢ 83% low, 17% moderate, and 0% high structure.
• Manage to increase early and late seral stages, and limit or decrease invasive grasses.
➢ 100% mid seral stages, all at native-invaded and planted-invaded state.</td></tr>
<tr><td>Initial Actions</td><td>Adaptive Options</td></tr>
<tr><td>• Authorized federal AUMs: 1,051
• Change season of use between Pastures 1 and 2. Temporarily fence crested wheatgrass areas, and graze early every third year (see Allotment 130).
• Fence three reservoirs to control access to water in Pasture 2. Manage tank and reservoirs to control animal distribution.</td><td>• Adjust authorized use.</td></tr>
<tr><td colspan="2">Monitoring
• Survey woody draws once every 3 to 5 years.
• Gather visual obstruction readings annually for 3 years, and then reevaluate survey frequency.
• Complete proper functioning condition survey once every 5 years.
• Collect vegetative composition data once every 3 to 5 years.</td></tr>
<tr><td colspan="2">Decision Rationale
The actions as presented above have the most potential to move toward the identified objectives, because they would result in facilitation of increased woody draw conditions by decreasing browsing and trampling disturbances. These actions would also result in increased levels of residual cover and improve herbaceous structure distribution. See supplemental draft environmental impact statement (Forest Service 2011), Vol. II, p. 621, for more details.</td></tr>
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Appendix C

Grazing Management Toolbox

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Appendix C

Grazing Management Toolbox

Adjust animal unit months (stocking rate) by # of head &/or # of days.
Adjust animal unit months based on average cow size.
Adjust season of use.
Allow early turnout on native pastures 1 out of 3 years on inventory permits.
Construct and/or remove cross fences.
Construct fence to create riparian unit—allow grazing under riparian grazing dates.
Construct fence to exclude livestock from areas of concern (riparian, wooded draws, springs, wetlands, etc.).
Construct livestock water development (well, pipeline, tanks, windmill, reservoir, dugout, or spring).
Construct temporary fence to control livestock distribution patterns.
Construct water gap to limit livestock access on stream.
Construct/harden stream crossings.
Defer native pastures until June 1 or until development of the three-and-a-half leaf stage for key graminoid species.
Fertilize crested wheatgrass areas.
Hay or cut-and-leave crested wheatgrass areas.
Implement best management practices for riparian pastures.
Implement deferred grazing system.
Implement Dakota Prairie Grasslands drought management strategy.
Implement prescribed burns.
Implement rest-rotation grazing system.
Implement twice-over grazing system.
Incorporate a range rider to disperse livestock throughout a pasture (herding).
Incorporate private “off permit” land into rotation.

Interseed pasture with native grass species.
Maintain existing developments to reestablish use.
Manage salt and supplement locations.
Manage water availability/access at water developments.
Mechanical brush management.
Move winter feeding areas off of National Forest System lands.
Reallocation of pastures (change allotment boundary).
Remove/reclaim water development (well, pipeline, tanks, windmill, reservoir, dugout, or spring).
Rest for one or more seasons.
Restore/enhance riparian vegetation, i.e., willow planting.
Scarify clubmoss areas within a pasture.
Utilize biological controls for noxious weed control in woody draws.
Utilize non-native grass pastures early to defer grazing on native grasses.

Appendix D

Design Criteria for All Implementation Plans

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Appendix D

Design Criteria for All Implementation Plans

Design criteria are actions that need to be included in all implementation plans to reduce impacts of proposed activities. They include any requirements that must be complied with by law, regulation, or policy and such elements as best management practices, Grasslands Plan (USDA Forest Service 2002a) standards and guidelines, and standard operating procedures.

Design Criteria

Place salt and supplement to draw livestock away from woodlands and riparian areas.
On native pastures, defer turnout until June 1 or until the three-and-a-half leaf stage is reached for key native graminoid species, e.g., western wheat, green needle, and needle-and-thread. On inventory permits, early turnout on native pastures is allowed 1 out of 3 years.
Rotate placement of salt and supplement to minimize effects of concentrating livestock, trailing, etc.
Locate any new water source in uplands away from woodlands and riparian areas.
For allotments requiring an animal month (AM)/animal unit month (AUM) reduction: • If monitoring shows that resource objectives are being met before full implementation of the AM/AUM reduction has occurred, then no further reduction in AUMs will be implemented. • If, after the reduction in AMs/AUMs is complete, monitoring shows that resource objective(s) have not been met but a significant sustained upward trend is evident, then further AUM adjustments will not occur unless continued monitoring indicates the upward trend is not being sustained. • If, after the reduction in AM/AUMs is complete, monitoring shows that resource objective(s) are not being met and there is a stagnated or downward trend, then, as an adaptive option, further AM/AUM adjustments may be initiated. • Temporary increases in AUMs may be granted if monitoring indicates that resource objectives are being exceeded.
If stocking rate adjustments are needed, annual reductions will generally not exceed 10%.
Move oilers, creep feeders, and supplement feeders out of woodland and riparian areas.
When drought conditions occur, the DPG drought strategy will be followed. Permittees will be notified verbally and in writing that reductions in numbers and/or seasons may be anticipated.
Ground-disturbing activities—such as installation of water developments, pipelines, fences, or exclosures—will require both heritage resource and sensitive species surveys approval by a Forest Service archeologist, botanist, and wildlife biologist prior to construction.

All new fencing will be built according to the standards identified in the Grasslands Plan, Appendix B.
All new or reconstructed water developments will include wildlife access and escape ramps.
Areas disturbed by rangeland improvement will be seeded with native species using certified weed-free seed mixtures prescribed by the Forest Service botanist.
Burn plans will be developed and approved for all prescribed fires prior to implementing on-the-ground actions.
Assess prescribed burn areas to determine appropriate stocking levels. Defer prescribed burn areas from livestock grazing for a portion or all of the following growing season to ensure regrowth of forage species unless there is a specific reason to graze early.
Range improvements will be maintained to standard by the allotment permittee prior to turning livestock into the affected pasture.
Install floats and/or shut-off values to regulate inflow to livestock watering tanks.

Appendix E

Monitoring Measures/Protocols

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Appendix E

Monitoring Measures/Protocols

Along with the allotment objectives, the Grazing Management Toolbox, and design criteria, monitoring is key to the decision described in this record of decision. Why monitor?

- Healthy, vigorous, and productive rangelands are essential to the sustainability of livestock and other multiple uses on National Grasslands.
- Important changes in rangeland health usually occur gradually and oftentimes are too subtle to notice through casual observations.
- Rangeland health deteriorates before livestock production will indicate a problem. Livestock can compensate through preferential grazing to a point. By the time a reduction in livestock performance is noticed, it may take years for the rangeland to recover.
- Monitoring is essential to determine whether the Grasslands Plan (USDA Forest Service 2002a) goals and objectives are being met. Monitoring provides the ability to continually adjust management strategies as needed.
- Monitoring will help achieve an understanding of how much benefit is being received from a change in grazing management or from investments in range improvements.
- Monitoring provides a record of environmental and resource conditions, events, and management practices that may influence rangeland condition or health.
- Monitoring is conducted to evaluate when management strategy changes are needed to better meet the identified Grasslands Plan goals and objectives.

The frequency of examination of an allotment will vary depending on the complexity of administrative and management concerns. All actions taken to correct problems and the results are to be documented.

Each allotment will be <u>examined and documented</u> with sufficient frequency and intensity to make the following determinations:

- The Grazing Agreement, Allotment Management Plan (AMP), and annual operating instructions (AOIs) are being complied with.
- Suitable progress is being made in meeting management objectives as specified in applicable National Environmental Policy Act decisions and AMPs, consistent with Grasslands Plan goals and objectives.
- Any need for change of direction or emphasis for subsequent AOIs or refinement and update of the AMP is being detected.

Compliance Monitoring

Compliance monitoring should be conducted and documented throughout the grazing season as part of the terms and conditions of the grazing permit to ensure the following:

- AOIs/AMP/Grazing Agreement
  - Authorized number of cattle are in the correct pasture at specified times; record actual "on" and "off" dates of each pasture move (entered in INFRA by USDA Forest Service)
  - Salt and supplemental feeders (tubs, licks) are no closer than ¼ mile from water developments, riparian areas or blowouts, and roads
  - Dead animals are disposed of in accordance with Rules of Management
  - Electric fence is appropriately signed
  - Excess use is processed
  - Approval for non-use is requested and, if appropriate, received
  - Base property requirements are met
  - Grazing permits are validated
  - Deferred maintenance records are maintained (entered in INFRA by USDA Forest Service)
- Range Improvements
  - Fences/gates are maintained with user-friendly closures
  - Water developments are maintained (windmills, dugouts, wells, pumps, pipelines, reservoirs, springs, and stock tanks maintained with functional escape ramps)
  - Dugouts are monitored for presence of algae, odor, livestock usage, water level, extent of bare soils, and trailing
  - Improvements are built and maintained to specifications, functioning properly as intended.

Short-Term (Annual) Monitoring

Periodic inspections are necessary for proper allotment management and administration of livestock grazing on National Forest System lands. When properly conducted, the allotment inspection will prevent problems or detect them so they can be resolved quickly. Information obtained through the inspection will also lead to improved coordination of uses and range inventory data. Participation in the allotment examination by the grazing permittee(s), pasture directors, range staff, and/or other interested parties, such as resource specialists, is desirable and should be encouraged.

Short-term monitoring includes determining whether forage utilization is meeting Grasslands Plan or AMP residual structure objectives. Forage utilization checks, which include the elements

listed below, are conducted during pasture move dates and at the end of the grazing season to determine utilization of key species:

- Dominant plants: Identify the three to five most prolific species present at the site.
- Primary forage species: Identify the three to five primary forage species. These are most often the species that experience the most use during the time the pasture is grazed (Sedivec/Printz 2005, p. 159). Utilization should be monitored for those grass species that are (a) desired by the type of livestock being grazed and (b) meet management objectives.
- Landscape appearance transects (Exhibit A), utilization mapping (Exhibit B), ocular estimate
- Vegetation structure measurements (Robel) (Exhibit C)
- Photo points (conducted throughout growing season) in upland and riparian areas (Exhibit D)
- Precipitation – rain gauges established on allotment or pasture level or other local sources
- Inventory and treatment of noxious weeds, poisonous plants, and supporting documentation.

Long-Term Monitoring (Conducted Every 5 to 10 Years Depending on Site and AMP Objectives)

Long-term monitoring is the measurement of changes in plant community composition, cover, and structure and in the soil resource conditions over time (Exhibits E and F). It is critical to detect changes in the rangeland early enough to make necessary adjustments in grazing management strategy or other management practices. Long-term rangeland condition and trend information is necessary to make these adjustments. Interpretations of long-term monitoring should be done by those with experienced journeyman-level expertise.

The following should be evaluated as part of the long-term monitoring process to determine rangeland/riparian health:

- Rills
- Water flow patterns
- Pedestals and/or terracettes
- Bare ground
- Gullies
- Wind scoured, blow-out, and/or depositional areas
- Litter movement
- Soil surface resistance to erosion (soil stability kits)

- Soil surface loss or degradation
- Plant communities (species composition [quadrats and nested frequency forbs], basal cover [10-pin frame], and production [quadrats])
- Compaction layers (bulk density and root penetration depth)
- Functional/structural groups
- Plant mortality/decadence
- Reproductive capability of perennial plants
- Green line to green line, width and composition measurements across riparian areas
- Changes in plant composition, bare ground, etc., (trend plots), riparian function.

Exhibit A. Landscape Appearance Method (Herbaceous)

This method provides a reasonably accurate estimate of general forage utilization. It is especially helpful when livestock use must be estimated over large areas with few examiners. For this method, an ocular estimate of forage utilization is made from the general appearance of the rangeland. Utilization levels are determined by comparing observations with the written descriptions of each utilization class.

Equipment:

- Baseline Information Form and Landscape Appearance Method Form (see Figure EA-1)
- Camera and Photo Information Sheet
- Transect reference stake (optional)

Procedure (Herbaceous Species):

- Select a representative site, and complete the Baseline Information Form.
- Once the transect site has been selected, take a photograph looking down the transect with a re-locatable bearing point (prominent feature in the background such as a rocky point or tree) in the photograph.
- Determine approximately how many samples you will take. This will vary depending on the size and shape of the site and the degree of grazing use. Generally, if the site has been grazed lightly or moderately, take at least 30 samples per transect. If the site has been closely grazed, take at least 20 samples per transect. Then determine the distance between observation points (this is referred to as the ***sample interval***). **Record the sample interval in the *Sample Int.* blank at the top of the Landscape Appearance Method Form.** Generally, a sample interval of 20 to 30 ft works well for this method.
- Determine how many paces or steps will give you the selected sample interval, and begin pacing toward the bearing point (use either paces or steps—paces are simply two steps). When the predetermined number of paces or steps is reached, examine the immediate area in front of you, and determine the Class Interval by reading the Description of the Landscape Appearance on the Landscape Appearance Method Form. It is helpful to visualize a 20- to 30-ft half circle immediately in front of where you are standing. If you are using a 20-ft sample interval, the half circle will be 20 ft. When using a 30-ft sample interval, it will be 30 ft. Usually, you will only be able to accurately assess the plants within about 20 to 30 ft of where you are standing. Choose the description that applies, and record your findings as a tally dot in the appropriate row. Repeat.
- After reaching the end of the transect, total the dots in each row, and record in the Number by Class column (Column B). Then multiply Column B by Column A for that row, and record in Column C.
- To calculate the average utilization, divide the total of Column C by the total of Column B.

LANDSCAPE APPEARANCE METHOD FORM (Herbaceous)

Transect ID: __LA-A1_____ **Date:** 8/10/2013_____ **Observer:** _E. Smith_____

Unit Name: ____East_____ **Pasture Name:** 12_____

Kind/Class of Animal: Cow/Calf **Period of Use:** 7/15_ to _8/15_ **Sample Int:** _30 Feet_

Herbaceous Species

Class Interval	A Mid Point	Dot Count	B Number by Class	C No. X Midpt	Description of Landscape Appearance
0-5%	2.5		3	7.5	The rangeland shows no evidence of grazing, or negligible use.
6-20%	13		6	78	The rangeland has the appearance of very light grazing. The herbaceous forage plants may be topped or slightly used. Current seedstalks and young plants are little disturbed.
21-40%	30		12	360	The rangeland may be topped, skimmed, or grazed in patches. The low-value herbaceous plants are ungrazed, and 60 to 80 percent of the number of current seedstalks of herbaceous plants remains intact. Most young plants are undamaged.
41-60%	50		9	450	The rangeland appears entirely covered as uniformly as natural features and facilities will allow. 15 to 25 percent of the number of current seedstalks of herbaceous species remains intact. No more than 10 percent of the number of low-value herbaceous forage plants has been utilized.
61-80%	70		4	280	The rangeland has the appearance of complete search. Herbaceous species are almost completely utilized, with less than 10 percent of the current seedstalks remaining. Shoots of rhizomatous grasses are missing. More than 10 percent of the number of low-value herbaceous forage plants has been utilized.
81-94%	88		3	264	The rangeland has a mown appearance, and there are indications of repeated coverage. There is no evidence of reproduction or current seedstalks of herbaceous species. Herbaceous forage species are completely utilized. The remaining stubble of preferred grasses is grazed to the soil surface.
95-100%	97.5		0		The rangeland appears to have been completely utilized. More than 50 percent of the low-value herbaceous plants have been utilized.
		Total	37	1439	
	Avg. Util.	=	C/B	1439/37	= 39%

Figure EA-1. Example of Landscape Appearance Method Form.

Exhibit B. Grazing Use Mapping

Mapping livestock utilization patterns across the allotment can be a useful management tool. Most importantly, it serves to help establish key areas and identify distribution problems. This information can then be used to make modifications in the Allotment Management Plan or annual operation instructions. To map livestock use, the grazing unit being mapped is visually examined, and the boundaries of the use-intensity classes are sketched freehand on maps or overlays.

Equipment:

- Baseline Information Form
- Topographic or planimetric map of the grazing unit/allotment (or overlay)
- Camera and Photo Information Sheet

Procedure:

- Use mapping should be done shortly after the livestock leave the grazing unit.
- In order to calibrate or "key in" the eye of the examiner, a number of transects using the Landscape Appearance Method (herbaceous and/or browse, as appropriate) should be conducted. Enough transects should be completed to enable the examiner to consistently recognize the appropriate use-intensity class for a large area. This should be done prior to mapping any grazing units.
- Each time a new plant community is encountered, the examiner should conduct a transect using the Landscape Appearance Method (meadow type, aspen type, open pine type, etc.).
- The Stubble Height Method may also be used when use mapping. The plant community (usually a riparian area) is delineated, and the average stubble height is recorded.
- It is helpful for the examiner to obtain or create a map showing the boundaries of different plant communities or ecological sites. Using the field map, the examiner then rides or walks across the site (meadow for instance) in a zigzag pattern and maps the use within the following six use categories: none (0–5%), slight (6–20%), light (21–40%), moderate (41–60%), heavy (61–80%), and severe (81–100%). In most cases, do not attempt to map sites at smaller than a 5-acre scale. However, if key/critical areas smaller than 5 acres occur (such as creeks, springs, and seeps), the degree of use on these sites should be noted on the map.
- Complete the map with a legend indicating mapping unit, utilization, and/or stubble height.
- Complete the Baseline Information Form for each grazing unit (pasture) mapped, and take field notes of conditions observed while mapping.
- Take photographs showing utilization intensities in representative areas within the grazing unit. Take additional photographs as needed to show unique concerns, opportunities, comparisons, etc.

Mapping use patterns involves traversing the management unit (allotment, pasture, etc.) to obtain a general concept of utilization patterns. When mapping use zones, the following class delineations can be used (slight to none, 0–20%; light, 21–40%; moderate, 41–60%; heavy, >60).

See Figure EB-1 for an example of a use map.

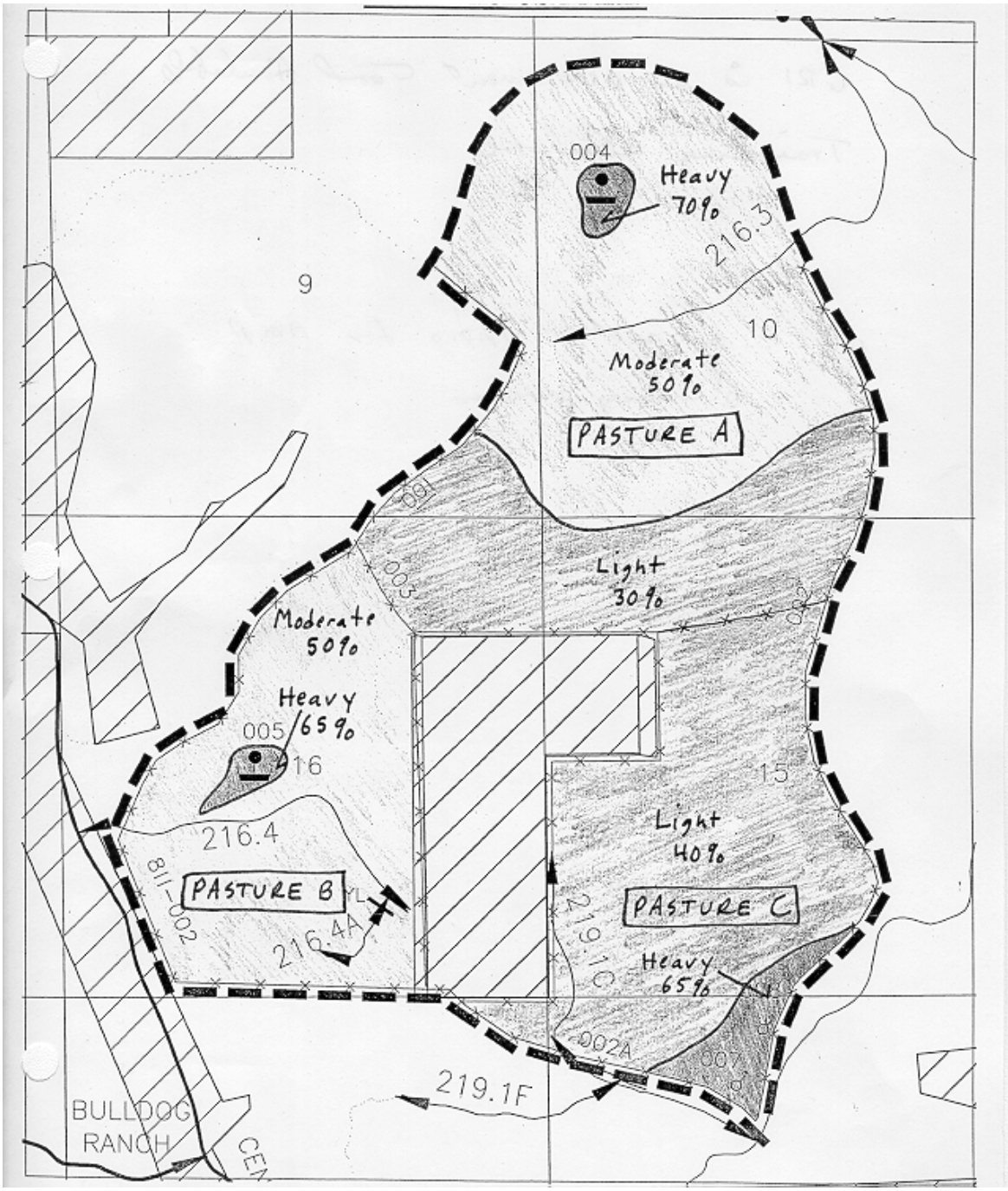

Figure EB-1. Example of a grazing use map.

Exhibit C. Visual Obstruction Reading

The purpose of monitoring autumn visual obstruction readings (VORs) is to assess the level of attainment of the Grasslands Plan objectives regarding vegetative structure.

Equipment:

Each VOR pole is a 3-cm-wide round wooden (or metal) dowel that is marked with 1-in.-wide alternating bands of white and gray from the bottom of the pole upward. Alternate bands are numbered starting with 1 on the lowest band (see Figure EC-1). A "sighting rope" is attached to the VOR pole at a point 1 m from the bottom of the VOR pole. The sighting rope is attached to a "sighting pole" at a point 1 m from the bottom of the sighting pole. When stretched taut, the rope distance between the sighting pole and VOR pole is 4 m (see Figure EC-2).

Procedure:

Transects contain 20 stations spaced every 10 paces (20 steps). Station 1 is at the transect's start point. Station 20 is at the transect's end point. If any "doglegs" are necessary on-the-ground to stay within a single vegetative community, take a Global Positioning System reading of the start of the dogleg, new transect end, and azimuth of the dogleg.

Secure the VOR pole so it is standing straight up at the sample point (this can be done using a spike at the bottom of the pole if the ground is unfrozen and soft or by using a holder – see Figure EC-2). Stretch the sighting rope taut. From the 1-m-high mark on the sighting pole, look at the top of the VOR pole. Look down the VOR pole until your gaze encounters screening vegetation. Record the lowest VOR pole band that is wholly or partially visible (see Figure EC-1). Record data on a Field Sheet (see Figure EC-3). Take four readings at each station. Readings should be offset from each other by 90 degrees.

Data are recorded after the first killing frost. This varies from year to year, but the VOR field season typically starts in mid to late September. VOR readings can be taken until snow interferes with the VOR readings. A light dusting of snow will not affect VOR readings. Any snow accumulation, however, would affect VOR readings. Therefore, VOR readings should not be taken when any accumulated snow is present. Any snow conditions that result in a "matting" or "crushing" of the vegetation due to snow moisture levels or amounts ends the VOR field season. This varies from year to year but typically occurs in late November. VOR readings should not be taken when there is sustained wind of 20 miles per hour or more; note, however, that wind has little or no effect on readings of very short vegetation.

VISUAL OBSTRUCTION READINGS (VOR)

READ DOWN THE POLE, RECORD THE LOWEST BAND YOU CAN SEE.

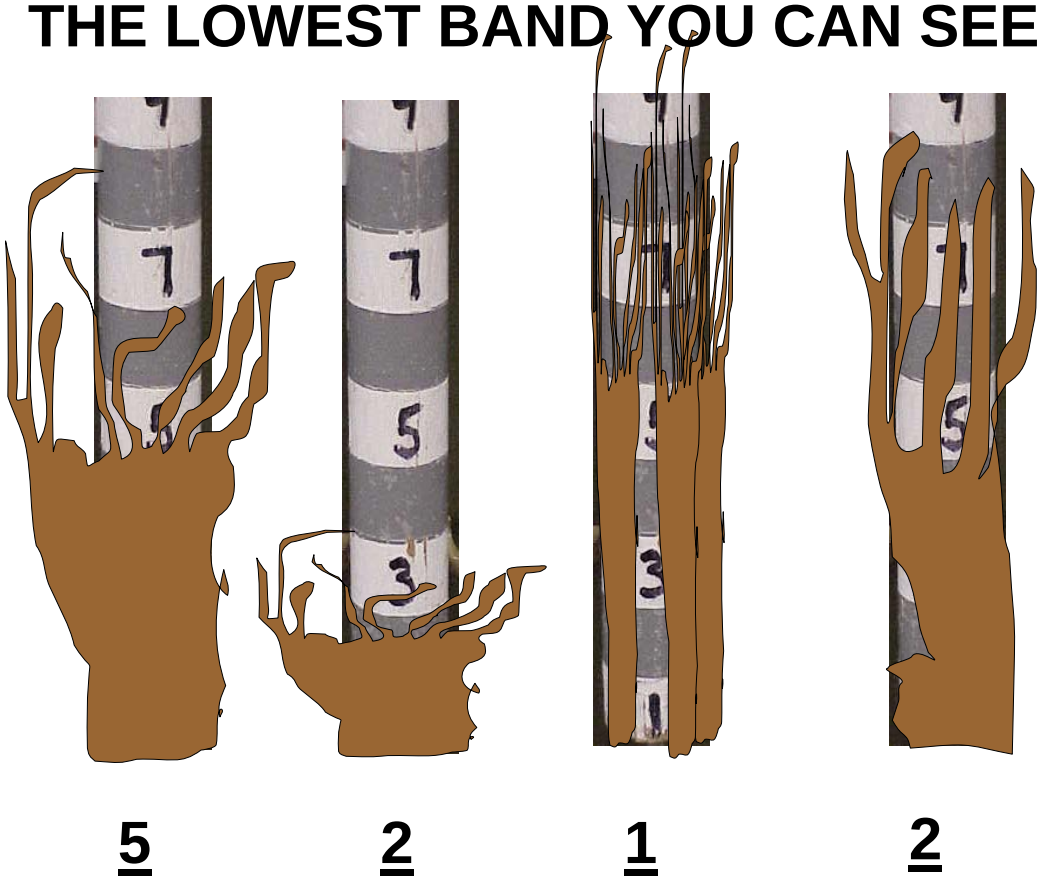

Figure EC-1. Numbered bands on a VOR pole.

Figure EC-2. Photograph of VOR monitoring: (A) recorder using field form, (B) reader using sighting pole and sighting rope to standardize height and distance for reading VOR pole, and (C) holder holding VOR pole for the reader.

VOR FIELD FORM
TRANSECT #_____ COUNTY_____

DATE_____ RECORDER/READERS_____

ALLOTMENT_____ PASTURE_____

DOMINANT VEG._____

STATION	A	B	C	D	AVE.
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
TOTALS					

*Sampling interval = 10 paces (20 steps).

COMMENTS:

Figure EC-3. Example of a field form.

Exhibit D. Riparian (Proper Functioning Condition – PFC) Rating

Date: Riparian Area:

ID Team: Reach ID:

	NA	Optimal	Sub-Optimal	Marginal	Poor
Stream Bank Conditions Extent to which erosion is occurring, or has the potential to occur.		**Stable** No evidence of erosion or bank failure.	**Moderately Stable** Infrequent small areas of erosion, mostly healed over.	**Moderately Unstable** Up to 50% of banks have areas of erosion	**Unstable** Many eroded areas, “raw” areas frequent, 51–100% of the bank has erosional scars.
Bank Vegetation Conditions The amount of the stream bank that is covered by vegetation.		**>90%**	**71-90%**	**51-70%**	**<50%**
Extent of Grazing Pressure The extent of grazing impacts and its effect on streamside vegetation and in-stream pools.		**Minimal or Not Evident** Almost all plants are allowed to grow naturally, little evidence of manure accumulation, little trampling near in-stream pools.	**Evident** Only moderate impacts on stubble height, only scattered manure present, in-stream pools are being used by cattle but are not significantly impacted	**Obvious** Patches of bare soil or closely cropped vegetation area common.	**High** Patches of bare soil or closely cropped vegetation area common, less than 25% of the potential stubble height is remaining, grazing is affecting plant species composition, manure accumulation is very high, cattle are using in-stream pools and are having severe impacts on pool vegetation and water quality.
Comments:					

Photo Checklist for Riparian Monitoring

Name of Riparian/Wetland Name _____

Date: _____ Segment/Reach ID: _____

ID Team Observers: _____

Allotment/Pasture: _____

Direction Facing: Upstream / Downstream

Photo ID	Lat:	Long:	Relevance to which Monitoring Question?	Relevance, Description, or other Noteworthy attributes

Exhibit E. Plant Community Composition (Seral Stage) Monitoring

Several plots have been randomly selected throughout the planning area to determine seral stage, basal cover, and production. These plots are commonly referred to as "NDSU [North Dakota State University] Plots" or "Cooperative Monitoring Plots," herein referred to as plots. Plots are 75-m × 75-m transects laid out on the cardinal directions. Of the 205 previously randomly selected plots, at least 20% will be selected (predetermined) on key areas and monitored in Years 3 to 5 to determine whether seral stage objectives are being met. Allotments comprising <320 acres will not be monitored for seral stage unless intensive management is implemented within those allotments.

Key area plots will be selected and are those within the predominant site within the allotment that should be capable of and likely to show a response from management actions and have adequate representation of key species. An interdisciplinary team should be used to select these areas.

The double-weight estimate or double-sampling method is designed to determine biomass by species by providing a measure of the relative contribution of various species to the total biomass (based on dry matter content) for a site. Plots will be sampled using the double-weight estimate method to determine species composition and biomass values. Within each plot, six 1.92- ft^2 circular plots will be sampled along each 75-m transect, with a total of 12 quadrats sampled per plot. Among these 12 quadrats, at least two will be clipped to calibrate observers. Within each plot, general observations will be made to include other species present, rodent use, insect infestations, fire, or other uses/disturbances of the site that can have considerable impact on vegetation and soil resources.

Double sampling requires the establishment of a weight for each species occurring in the area to be sampled. All weight units are based on the current year's growth.

Procedures for Establishing Weight Units

1. Decide on a weight unit that is appropriate for each species. A weight unit could be an entire plant, a group of plants, or an easily identifiable portion of a plant and can be measured in either pounds or grams.
2. Visually inspect a representative weight unit.
3. Harvest and weigh the plant material to determine the actual weight of the weight unit.
4. Maintain proficiency by harvesting at least two samples per 12 sampled to check estimates of production.

Estimating Production of a Single Quadrat

1. Estimate production by counting the weight units of each species in the quadrat.
2. Convert weight units for each species to grams or pounds.
3. Harvest and weigh each species to check estimate of production.

4. Repeat the process until proficiency in estimating is achieved.
5. Keep the harvested material for air drying and weighing to convert from green weights to air-dry weights.

Sampling Process

1. Harvest, weigh, and record the weight of each species in the quadrats. Harvest all herbaceous plants originating at the ground level.
2. Correct estimated weights by dividing the harvested weight of each species by the estimated weight for the corresponding species on the harvested quadrats. This factor is used to correct the estimates for that species in each quadrat. A factor of more than 1.0 indicates that the estimate is too low. A factor lower than 1.0 indicates the estimate is too high.

After quadrats are estimated and harvested and correction factors for estimates are computed, air-dry percentages are determined by air drying the harvested materials or by selecting the appropriate factor from an air-dry percentage table. Values for each species are then converted to air-dry pounds per acre for all quadrats. Average weight and percentage composition can then be computed for the sample area.

Calculations

1. On the form shown in Figure EE-1, record estimated weights for each species occurring in each quadrat in the appropriate column (Estimated or Clipped Weight per Species sections).
2. Quadrats that were harvested are circled. The estimated weights for these quadrats are totaled and shown in Column 3. The total harvested weights are shown in Column 4. Harvested weights for each quadrat for each species are not shown on the form, only the total for each species.
3. Column 5 is the actual dry weight for each species from the quadrats that were clipped.
4. The Quadrat Correction Factor (QCF), Column 6, is calculated by dividing Column 4 by Column 3.
5. Column 7 is determined by dividing the dry weight by the green weight. In the sample, the clipped weights were not air dried; the percent dry weights shown in Column 7 were taken from the dry weight conversion table.
6. The total estimated weights for each species for the entire plot are shown in Column 8.
7. The average yield (Column 9) is determined by multiplying the total estimated weight of each species (Column 8) times the QCF (Column 6) to adjust for the error in estimating weights and then multiplying that times the percent dry weight (Column 7) to determine the adjusted dry weight or the Average Yield (Column 9).

8. The Average Yield for each species (Column 9) it totaled at the bottom of the form for the composition totals.
9. Percent Composition (Column 10) is calculated by dividing the average yield for each species (Column 9) by the composition totals.

An example of a completed double-weight sampling form is shown in Figure EE-2.

Weight Estimate Quadrat

Record the weights of all plants within the vertical projection of the quadrat even though the base is not within the quadrat. Do not record weights of portions of plants outside the vertical projection of the quadrat even though the base *is* within the quadrat. See Figure EE-3 for an illustration of a vertical quadrat.

Page of

Date	Examiner	Allotment Name & Number	Plot Number	Pasture

Transect Location	

	Estimated or Clipped Weight Per Species												Wt Clipped Plots			QCF	%Dry	Wt. All	Avg.	Pct.
Plant Name	(Circle Plots that are Clipped) (2)												Est	Clip	Dry		Wt.	Plots	Yield	Comp
(1)	1	2	3	4	5	6	7	8	9	10	11	12	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Totals																				

Figure EE-1. Double-weight sampling form.

Page 1 of 1

Production

Study Number 13N-41E-27-04	Date 9/30/95	Examiner Rex Johnson	Allotment Name & Number Round Mtn 11078	Pasture Ridge
Transect Location 2 miles north of Jack's well on the left hand side of the road.			Quadrat Size 9.6 sq. ft.	Transect Bearing 225°

Plant Name	Plant Symbol	Estimated or Clipped Weight Per Species (Circle Plots that are Clipped) (3)										Wt Clipped Plots			QCF	%Dry	Wt All	Avg	Pct
												Est	Clip	Dry		Wt	Plots ›	Yield	Comp
(1)	(2)	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9	P-10	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Black Grama	BOER 2	12	16	5		16	8		3	8	3	8	9		1.12	55	71	43.7	12
Curly Mesquite	HIbe	7		12	7		4	9		3		12	13		1.08	60	42	27.2	8
Blue Grama	BOGR 2	3	4	3	7	4		1	8		5	8	7		.87	60	35	18.3	5
Sideoats Grama	BOCU		8		1		12	5		7	3	3	4		1.33	55	36	26.3	7
Bush Muhly	MUPO2					3						3	3		1.00	55	3	1.6	1
Sixweeks Grama	BOBA			1					6	2	6	7	8		1.14	60	15	10.3	3
3-AWN	ARIST			10				5			8	18	16		.88	60	23	12.1	3
	VUOC					3	1			3	3	3	2		.66	55	10	3.6	1
	GiliA	3		5	8		1		2	12	1	6	7		1.16	40	32	14.8	4
Lotus		2	1		3	5		1	5		6	6	7		1.16	40	23	10.7	3
Lupin			3	2		6	1	7		2	1	3	4		1.33	40	22	11.7	3
Pepperweed					2		2		3	4	3	3	4		1.33	40	14	7.4	2
Burroweed	HAGR	25		18	12			30		7		18	20		1.11	65	92	66.4	18
Mesquite	PRJU		32			20	45		15		28	28	31		1.10	50	140	77	21
Wolfberry	Lyph			20				12		15		20	22		1.10	65	47	33.6	9
Totals																		364.7	100

Figure EE-2. Example of a completed double-weight sampling form.

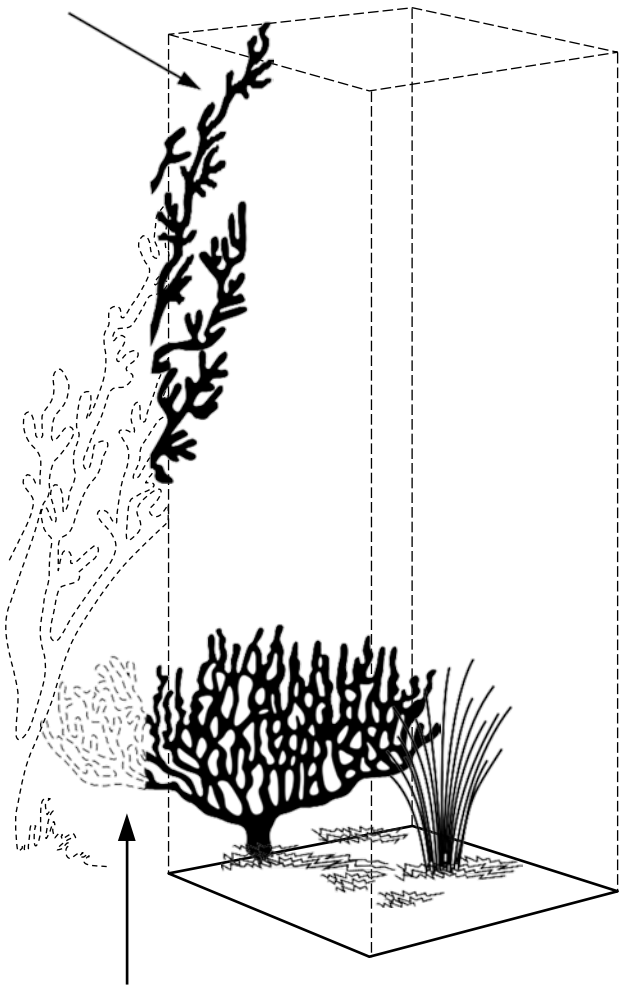

Figure EE-3. Illustration of a vertical quadrat.

Exhibit F. Woody Draw Monitoring

Woody draw monitoring will be conducted using two methods to assess whether management actions are resulting in the desired conditions. In 1987, a cooperative woody draw partnership was initiated between the North Dakota Game and Fish Department and the USDA Forest Service to monitor woody draw conditions. This agreement included 17 randomly located permanent plots within the study area. These sites will be sampled every 5 years via the cooperative agreement using the established protocol.

In addition to the North Dakota Game and Fish Department plots, 227 randomly selected plots were previously sampled. At least 20% of these plots will be selected (predetermined) on key areas and monitored in Years 5 and 15 to determine whether woody draw objectives are being met. Allotments comprising <320 acres will not be monitored for woody draws unless intensive management is implemented within those allotments. The protocol will follow the USDA Forest Service 1998 methodology (see supplemental draft environmental impact statement [Forest Service 2011], Vol. I, p. 133), except no minimum acreage for a sample site and complexes or inclusions identified by a change in the dominant tree and/or shrub species will be delineated.

Attributes of Healthy, At Risk, and Unhealthy Condition Classes

Some of the bulleted points below are not absolute, and it is necessary to make evaluations based on a combination of factors. For example, several sites with <359 saplings/acre were rated as healthy, because the tall shrub layer was extensive and presented good understory substrate conditions for woody regeneration, or there was good distribution of other size classes, including small-diameter trees that indicated successful regeneration was occurring. Conversely, some sites with more than 359 saplings/acre were rated at risk, because the majority of saplings were associated with basal suckering from relatively few mature trees, and/or there were few trees in the next smallest size classes because saplings were surviving.

Healthy: Site contains relatively continuous tall shrub layers, usually with prominent deciduous saplings, and multiple size or age classes of established trees. The understory of tall shrub layers is often composed of bare mineral soil and decomposing plant litter that creates optimum conditions for woody regeneration. Although snowberry may comprise an understory layer, it is not the dominant shrub. The following are attributes that indicate healthy woody draw conditions:

- Deciduous tree sapling (>2.5 ft tall and less than 1-in. diameter at breast height [DBH]) densities of at least 359/acre, with the majority derived from independently establishing plants rather than clumps of multiple basal sprouts with unreliable establishment success
- Deciduous size classes between 1 and 4 in. DBH of at least 150 trees/acre
- Average canopy cover of chokecherry and/or serviceberry of at least 24% throughout the woody draw.

At Risk: Tall shrub layers and any tree saplings tend to be confined to small patches on the steepest or least accessible portions of the site involving short side-slopes, eroding banks, or

vertical cuts. The majority of trees are represented by large DBH size classes with successful tree regeneration confined to local patches. Snowberry is generally the dominant shrub throughout the site, or the understory is dominated by grasses such as Kentucky bluegrass and smooth brome. The following are attributes that indicate at-risk woody draw conditions:

- Deciduous tree sapling densities of at least 89/acre with the majority derived from independently establishing plants rather than basal suckers
- Deciduous size classes between 1 and 4 in. DBH of at least 35 trees/acre
- Average canopy cover of chokecherry and/or serviceberry of at least 11% throughout the woody draw.

Unhealthy: Tall shrub layers and tree saplings are generally absent or confined to very few patches, as described above. The vast majority of trees are represented by large DBH size classes, and many are dead or dying with little or no evidence of recent regeneration. Tall shrub layers are absent or very patchy, and snowberry is the dominant shrub, or the understory is dominated by dense grasses with poor substrate conditions for woody regeneration. The following are attributes that indicate unhealthy woody draw conditions:

- Deciduous tree sapling densities less than 89/acre, not including dense clumps of basal suckering from existing trees
- Deciduous size classes between 1 and 4 in. DBH less than 35 trees/acre
- Average canopy cover of chokecherry and/or serviceberry less than 11% throughout the woody draw.

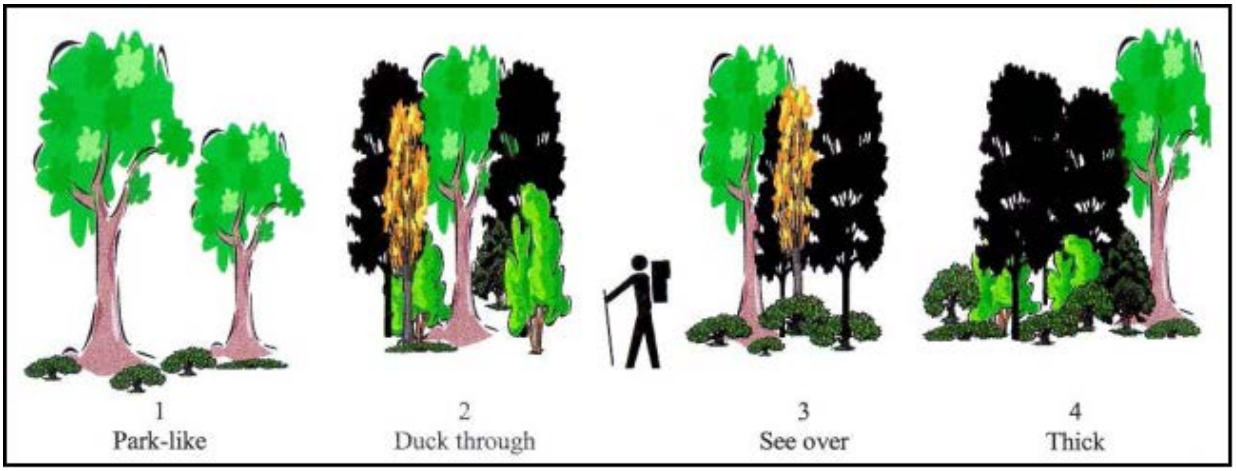

Figure EF-1. Illustration showing various canopy levels..

Appendix F

Response to Comments for the Supplemental Draft Environmental Impact Statement

North Billings County Allotment Management Plan Revisions

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A – Badlands Conservation Alliance

A-1 – BCA rejects Alternative 1, the no action, no permitted livestock grazing alternative, on both ecological and social grounds as the Northern Plains evolved with grazing, and we want to see family ranches remain on the land. Keeping good family ranches on the ground is desirable for both historic and traditional reasons. It could also prove advantageous to communities and to the resource itself as oil and gas development expands in western North Dakota.
RESPONSE: Comment noted. The No Action Alternative is required to be considered by law and policy. As noted in the FEIS the No Action alternative would not meet the Purpose and Need for the proposal and would not utilize livestock herbivory as an important tool in vegetation management on the grasslands.

However, with current existing conditions in the project area, we will admit that this is the first time BCA has considered whether there may be a better way to provide needed grazing other than the current system. The expansion, scale, and break-neck speed of oil development onto much of western North Dakota's private lands heightens the importance of maintaining excellent wildlife habitat on the Little Missouri National Grassland (LMNG), including the project area. Quality habitat is woefully absent at present.

BCA opposes Alternative 2 as it is the management prescription that brought us to the current striking difference between existing and desired conditions in the project area. This cannot continue.
RESPONSE: Comment noted. Alternative 2, continuation of current management, is an important tool of comparison between the various alternatives considered.

Alternative 3 and 3A seem a metered, potentially sanctioned march to decreasing productivity for rangeland conditions, and thus the livelihood of those dependent upon them. Most certainly they seem an acquiescence to continuing deterioration of the unique natural resource that is the Little Missouri National Grassland.

We are not convinced that Alternative 4, while making some beneficial modifications to bring range management on the LMNG up to more contemporary rangeland practices, recognizes or responds to the immediate need for attention to spread of invasive grasses and the narrow timeframe in which we need to act in order to slow or ameliorate such consequences.

There is an overarching element in this SDEIS process that BCA finds unsettling. It is evidence that we, all interested parties and users of the Little Missouri Grassland, and specifically the project area, are "positioning" ourselves for something outside the good and final sustainability of the resource.

There is no single "culprit" in this statement. It has expressed itself throughout the process and it originates with no single source or user. BCA is concerned that such positioning comes at a time when industrial expansion in western ND threatens a resource in whose

values we all are sustained. And, that those shared values will be the loser in the game. We are hoping we are wrong.
RESPONSE: Alternatives 3, 3A, and 4 provide a range of alternatives for the decisionmaker form his decision from. The analysis describes the differences in anticipated effects for all of the alternatives considered.

On a lighter note, BCA wholeheartedly appreciates some of the formatting changes and substantive additions/clarifications made between the Draft EIS and the Supplemental Draft EIS. BCA wants to acknowledge the efforts of your staff for these efforts and express support for those additions which we want held over into the final decision.

- Reformatting of Chapter 3, Part 2 and the consolidation of all allotment maps into Appendix B is helpful to reviewing parties. Thank you.
- The expanded discussion and identification of Trigger Points clarifies timing of adaptive management actions, making it easier for all interests to conceptualize on the ground realities and visualize a definable process.
- Inclusion of water quality monitoring for the Little Missouri River within the project area and at the confluences with Whitetail and Mikes Creeks, and PFC surveys on Magpie Creek should be carried over into the Final on this project. Thank you.
- BCA appreciates USFS recognition of our concern and inclusion of language in Chapter 2, Table 2.4 – Design Criteria stating: "If monitoring shows that resource objectives are being met, before full implementation of the AM/AUM reduction has occurred, then no further reduction in AUMs will be implemented."
- We appreciate your communication with the Medora Grazing Association detailing required actual use information and completion of year end reviews with each permittee to verify or amend Annual Operating Instructions to reflect past season actions and numbers (per SRT recommendation and Association Grazing Agreement).

RESPONSE: Comment noted.

BCA offers the following clarifications to the USFS' Response to Comments for the DEIS and how that response plays out in the SDEIS alternatives.

- Our objective in supporting addition of a forage reserve to the Grazing Management Toolbox (F-9) was in general need across the entire Little Missouri National Grassland, and was NOT intended within the boundaries of the North Billings County project area.

  We have been involved in the acquisition and NEPA process for the Elkhorn Ranchlands since the Eberts family first offered it as an addition to the Elkhorn Ranch Unit of Theodore Roosevelt National Park. While we do not see the Grasslands Plan amendment and the grazing management plan for the Elkhorn Ranchlands as the ONLY opportunity into the future for establishment of a forage reserve(s), it is certainly the most obvious and practicable at the present time. And, we think all interests should be considering its potential benefits when examining existing conditions and grazing decisions on the North Billings project area.

BCA's call for a forage reserve was under a section of our comments on the North Billings DEIS that spoke to drought management, oil and gas development's impacts on the spread of invasive grasses, and global climate change - none of which were specific ONLY to the project area; all of which· are relevant to the decision making process.

RESPONSE: This comment is outside the scope of this analysis. The determination of whether (and what form) the Elkhorn Ranchlands will be a forage reserve is to be determined as part of the Amendment process. The decision on management of the North Billings project area is separate from that determination.

- BCA finds that the Forest Service is not giving the attention warranted to the spread of invasive grasses in the North Billings project area. While this is a difficult topic requiring intensive management strategies, we do not find any of the Alternatives seriously addressing the problem. Response F-6 suggests that ranch logistics would be "complicated." Considering that continuing spread would result in ever decreasing quality of both forage for livestock and wildlife habitat, it seems some new, if "complicated," management strategies are worthwhile. The downward spiral of native grasses from irretrievable to that which approaches irreversible is not acceptable. Especially without a concerted battle.

BCA does NOT concede, however, that removing livestock grazing from the equation is THE answer or that livestock are the singular vector for the spread of invasive grasses. Nor can intensive and pointed management under the direction and hands of the Forest Service, grazing associations and/or individual permitted ranchers alleviate all problems.

Heightened awareness of this situation needs to cross the sights of all Grasslands users with responsibility put on the backs of all. Every oil company, every oil sub-contractor, every oilfield worker, every truck driver, every out of state tourist, every ATV enthusiast, every Sunday afternoon driver, every hiker and biker and birdwatcher and marathon runner, every hunter and school bus driver and fossil dig and researcher, and every employee of the Forest Service should be aware of the threat. Educate the public. Take action.

It is certain that livestock grazing is a significant vector for spread of invasive grasses. And, on that account, we would ask further consideration of management strategies be included in this project, with vigilant attention to new scientific findings as research progresses:

Flexibility in configuration of allotments.
Timely burning of invasives to weaken their productivity and competition with natives.
Timed increase of livestock density over short periods to weaken invasives.
Establishment of a more cooperative relationship among grazing partners to facilitate attention to control practices.
Attention to grazing rotations and their impacts on spread of invasives.
Discontinuation of all hay feeding on FS land, and use of invasive-free hay where headquarters herds share FS pastures.
Hiring of additional cattle where allotment partnering proves unsuccessful.

Traditional use of herding where applicable.
Targeted attention to those areas such as water sources and other disturbance where invasives are particularly a problem and can be manipulated.

Discussion with project leader Dahl on August 29, 2011, directed BCA to include the following additional comments on the spread of invasive grasses in the project area and the LMNG as a whole. These comments were invited for inclusion here, and we hope the FS will consider them wherever and however applicable, refraining from simply passing them off as not relevant to this project. Ultimately, they are.

Oil and gas development has significantly contributed to spread of invasive grasses on the LMNG. Anticipated expansion has the potential to exacerbate existing conditions and nullify all efforts made by other users, including livestock grazers. BCA does not believe livestock grazers have the sole responsibility for carrying out controls.

Therein, we recommend further study and implementation of oil and gas relevant practices into the future, which may include among other actions and findings:
As regards travel management planning, negotiate with oil companies to insure that no further two-track roads are created by ranchers who have been using oil roads to administer grazing privileges. A case by case strategy may be the most effective.

As regards annual assessments for travel management, consider manipulating oil traffic in such manner that industry plans development around access and limited/concentrated travel routes.
Emphasize invasive species locations in the botany survey for applications for permit to drill.
Consider adding restrictions in operating plans to deter spread of invasives.
Consolidate information as gathered and use with the same discretion as eagle nests or sensitive species when siting oil infrastructure.
Require oilfield equipment to be monitored and cleared of invasive materials, similar to attention given to spread of Aquatic Nuisance Species.
Include past and current oil infrastructure on allotment maps as a reference and to aide in future decision making.

RESPONSE: We appreciate the comment relative to invasive grasses and have included, in the Toolbox, a variety of tools which can be utilized to reduce the spread of invasives. Many of the actions suggested by the commentors are included as options that can be utilized in implementing the North Billing Project. If additional tools are needed at future dates additional site specific NEPA can be completed to include those tools in the Toolbox. Refer to Chapter 3 of the FEIS for analysis of this resource concern. Comments related to oil and gas development are outside the scope of this project.
See Response to Comments C-3.82, C-3.201, C-3.208, and the last page of comments submitted for Allotment 239 regarding invasive species issues.

A-3 - As we have stated previously, we believe it is time and past time for the Forest Service and Bureau of Land Management to revisit the Dakota Prairie Grasslands/Montana State Office Oil and Gas Leasing Record of Decision, which was based on a Reasonably Foreseeable

Development Scenario that has little or nothing to do with the technology currently available and the on-the-ground reality of today.

RESPONSE: As stated previously oil and gas development is outside the scope of this project.

We continue to encourage all expedience in finalizing development and implementation of a Dakota Prairie Grasslands Drought Management Strategy, and initiation of a similar decision-making document that addresses potential climate change impacts into the future.
RESPONSE: Comment noted. The Drought Strategy for the DPG has been completed and will be implemented as necessary.

We cannot close without saying that BCA does not take the significant livestock reductions in Alternative 4 lightly. We are discouraged that previous management has allowed the huge gap between existing and desired conditions. We recognize that this will cause hardship for some and perhaps even a change in lifestyle for others. This is regrettable. However, if the range resource is to be sustainable into the future, it is also necessary.

As *Actual Use* has been sought by the Forest Service in trying to determine on the ground livestock numbers and actions, BCA would like to better understand actual economics and social make-up of the families and ranching circumstances connected to a decision such as this project. We found this discussion in the SDEIS helpful, but abstract and it left us with deeper questions.

For instance, it would have been helpful to know:

How many distinct family units graze on the project area.
How many of those families live on the associated ranch.
How many base properties are owned; how many are leased.
Of those leased, are owners also members of the surrounding communities.
What percentage of permitted ranchers depends solely on their association with the LMNG for their livelihood.

We seek this information to gain a clearer understanding of the economic and social parameters currently at play on the LMNG. And, to recognize trends that will influence best decision-making into the future.
RESPONSE: We entered into an MOU with Billings County relative to providing economic data for use in this project. The data they provided, and other readily available data, was utilized in the analysis disclosed in the FEIS. The data utilized provided a comparison of the social and economic impacts of the alternatives, as necessary for consideration in this analysis.

Finally, BCA again asks that Alternative 4 be revised to include more intensive attention to spread of invasive grasses. It is otherwise our preferred alternative. In particular, we support the inclusion of the Scientific Review Team's recommendation of adjustment for animal unit forage demands with changes in cow/calf size. We agree that the starting point for establishing Authorized Use should be estimated livestock Carrying Capacity. We generally, if not

completely, support the attention to realistic budget expectations that impact initial actions and adaptive management.
RESPONSE: Comment noted.

B - McKenzie County Grazing Association

McKenzie County submits the following comments on the Supplemental Draft Environmental Impact Statement (SDEIS), 2011 for the North Billings County Allotment Management Plan Revisions. McKenzie County agrees with the technical comments submitted by both Billings County and the Medora Grazing Association (MGA).

1. Demonstration Project

B-1 - The Demonstration Project (DEMO Project) was authorized by the 2006 Livestock Grazing ROD that adopted the revised Grasslands Plan. The Demonstration Project established additional measures that were to be taken in development of proposed actions related to livestock grazing. Specifically, the Demonstration Project directed that the Grazing Association be intimately involved in the development of those proposed actions (see Kimbell 2006 p. 16-17, and EA Appendix 3 for details).

The Demonstration Project says the Forest Service (FS) and the Association will develop the proposed action together. The FS developed the proposed action in the Draft EIS by themselves. In the North Billings SDEIS the FS developed a MGA Alternative based on the Associations input to the DEIS. This does not following the direction in the Demonstration Project.
RESPONSE: The Forest Service believes that the directions of the Demonstration Project were followed to develop the proposed action alternative (see SDEIS Volume III Appendix A for a detailed explanation of the development of Alternatives 3 and 3A.

B-2 - As stated in the 2006 ROD and Scientific Review Team (SRT) report, monitoring is vital to federal land management. Monitoring will be needed to establish whether desired conditions have already been achieved or, if progress is being made to achieve desired conditions, before consideration of livestock number or AUM adjustments.

One key goal of the Demonstration Project is to maintain or improve current on-the-ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species.

There will be no cuts in permitted AUMs without monitoring showing that livestock are principally responsible for not meeting the desired condition, and that the cuts are the only ecologically practicable and economically feasible means available for meeting the desired condition. In these circumstances, the Forest Service will work with the grazing associations to minimize livestock grazing reductions.

The FS has again not followed the direction in the Demonstration Project. The FS not only doesn't have any monitoring data to base the reductions on, they failed to work with the Association to minimize livestock grazing reductions. This is evidenced in the use of data collected during four of five years of drought.

MGA and the FS needed to work in careful consultation, coordination, and cooperation on this project. It is obvious the FS failed to follow any direction in the Demonstration Project.
RESPONSE: The commentor is correct that monitoring data is required to determine desired conditions have been met or if progress is being made towards them. Data collected in the North Billings Project area has shown that in several areas, key issues included in the EIS, adequate progress has not been made. Alternatives analyzed in the EIS are intended to address those issues in varying ways. These alternatives include, but are not limited to, adjustments in livestock numbers and AUM adjustments.

See Response to Comments C-3.15 and C-3.135. Sufficient monitoring has been conducted to show that woody draws and plant composition do not meet desired conditions.

See Response to Comments C-1.2, C-1.3 and C-3.102. In addition, only 2004 qualified as a potential drought year, not "four out of five" unspecified years.

2. Drought

B-3 - In March of 2011, Forest Service Chief Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops: ***"The FS will not use a drought year as the basis for any analysis."*** (Emphasis added).

The FS collected their data between 2004 – 2008. The years of 2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year at 77% of normal. The FS uses the data and assessments from 2004 as the baseline year for all of the resource objectives. Billings County is justifiably surprised that the SDEIS has used drought year data for its riparian area readings, actual use numbers, and high structure assessments.
RESPONSE: Comment noted, however, stocking rate determinations are based on many factors, not solely drought year production. Drought is a common occurrence in the Northern Great Plains; therefore, data collection should represent the range of variability in climatic conditions.

Also, of the three nearest weather stations (Grassy Butte, Fairfield, and Trotter's), the only station to meet the Grasslands Plan definition of drought was Trotter's in 2004. No other station showed precipitation levels that met this level (less than 75 percent of average) during any of the years listed. See Response to Comments C-1.3 and C-3.102.

3. Use of Best Available Science

B-4 - Forest Service Chief Tom Tidwell is committed to working with NDSU and relying on the university's research and data. The FS has agreed to a study conducted by NDSU to determine what is actually biologically capable on the Dakota Prairie Grasslands. The FS is using scientific researchers from NDSU in determining the proper rangeland management practices for this area, and it is logical for the USFS to wait for the research to be completed prior to moving forward with the new management plans.
RESPONSE The DPG is cooperating with NDSU in a study to validate biologically capable sites. New information is always being collected. When conducting analysis and developing alternatives use of the best available data is necessary, and it what was utilized in the North Billings Project.

B-5 - McKenzie County believes it is important for the FS to follow the Demonstration Project. When science proves changes are needed to the DPG Plan, the FS needs to amend the plan. This has been proven several times to the FS, but the FS has failed to follow the DEMO Project.
RESPONSE: The Forest Service has followed the Demonstration Project as noted throughout the FEIS and in the Draft ROD, Appendix A. The Grasslands Plan, including the 2006 Livestock Grazing ROD, is the guiding document for the management of the Little Missouri National Grassland. At such point as data becomes available that shows that the Plan needs to be further amended, we will do so.

C – Medora Grazing Association (MGA) and Billings County Identical Comments

C-1 Billings County Cover Letter to Comment

C-1.1 – Careful review of the SDEIS by consultants, Van Elsbernd and Dale Naze, retained by the county and MGA, demonstrate that the SDEIS revisions actually increase the adverse impacts on the community, custom and culture, as well as the economy. This is very disappointing and as established in the attached comments, entirely unjustified.
RESPONSE: Comment noted.

C-1.2 – The consultant analysis, which relied on the SDEIS, scientific consultations, and project files, revealed a singular number of material errors that call into question the SDEIS findings which are the basis for the proposed grazing reductions. The major conclusions include the following:

1. The SDEIS proposes in the preferred Alternative 4, initial average reductions in livestock grazing of 15% and provides for greater reductions in the future in Alternatives 3, 3A, and 4. From the outset, the SDEIS will directly harm the custom, culture and heritage of the area, and western North Dakota.

RESPONSE: Appropriate stocking levels are the key component affecting a variety of resource objectives including sustainable levels of livestock forage (Briske et al 2011, 2008, Derner and Hart 2007, Dormaar et al 1997, Eckert and Spencer 1987, Hart 1999,

Hart et al 1993, Heitschmidt 1987, Heitschmidt and Walker 1996, Holechek et al 1989, 1999, KSU 1994, NRCS 1997, Pieper and Heitschmidt 1988, Smart et al 2005, Vermeire et al 2008, Whitman and Wali 1975, Wilson 1986). No grazing system will consistently increase the level of appropriate grazing to sustain these resources, and there is general consensus that moderate stocking levels of 50 percent or less utilization are required to sustain desired productivity and resource conditions (Holechek et al 1999, Lewis et al 1956, Houston and Woodward 1966). Current levels of Authorized Use in several allotments greatly exceed the initial estimated carrying capacity (see Botany specialist report, pages 80 - 82). It is therefore appropriate to analyze the effects and potentially reduce stocking levels to these values in order to work towards achieving resource objectives. To imply that stocking levels need to be maintained at current levels of Authorized Use that many would consider unsustainable in order to sustain the custom and culture of western North Dakota is contradictory. There are prominent indications that native plant communities and associated forage values are not being sustained as a result of increasing invasive species, and this circumstance along with other effects of current grazing levels are contributing to the impediment of Grasslands Plan resource objectives.

Additionally, the degree of effect from potential livestock reductions on the culture of western North Dakota would appear to be overestimated by levels of reported use that are appreciably less than current Authorized Use for most allotments, even when excluding reductions during 2005 for drought conditions of 2004 (Botany specialist report, Appendix F, Table F2).

Although additional future reductions in stocking levels are possible, reductions are only one of several potential management tools and the allotment level effects analysis indicates that reductions in themselves will not always contribute to achieving resource objectives.

C-1.3 – 2. The stated reasons for the reductions are false and misleading. It is impossible to know whether the 43 grazing allotments within the North Billings project area are consistent with the Forest Plan because the SDEIS uses data primarily from drought years to conclude that current livestock grazing is not consistent with the Grasslands Plan objectives. Use of drought data to support these conclusions violates basic rangeland science principles as well as the stated direction of the Forest Service Chief Tidwell in March of 2011, when he pledged that the Forest Service would not to use drought data to base agency findings or decisions. Because the data used in the SDEIS are invalid, the SDEIS conclusions that the livestock grazing program does not conform to the Dakota Prairie Grasslands (DPG) Plan objectives are equally invalid.
RESPONSE: The commentor does not reference where they reviewed precipitation data to base their classifications of drought, i.e. severe, moderate, or average. The Forest Service's definition of drought is any year or sequence of years when annual precipitation amounts are less than 75 percent of average (Grasslands Plan, Appendix G). A review of climate data from the High Plains Regional Climate Center reported for Trotters, Grassy Butte, Fairfield, and Medora sites (four sites surrounding or within the vicinity of the project area) results in the following conclusions. In the year 2004, two of the four sites' annual

precipitation classified as drought years. In both 2007 and 2008, one of the four sites classified as drought. Aside from these station totals, the remaining years and sites' annual precipitation totals ranged from 82 percent to 147 percent of average. This would seem to reflect a natural range of variability for annual precipitation. If the years that data was collected during drought years are skewed, then certainly the years that are above normal would display skewed results, as well. Drought is a common occurrence across the landscape, and the Forest Service believes that data collected should represent the range of variability in climatic conditions; therefore all data utilized by the Forest Service to describe existing condition in the project area is valid to draw the conclusions displayed in the SDEIS. See also Response to Comment C-3.160.

C-1.4 – 3. Billings County concludes that the Forest Service limited the data used to measure consistency with the DPG Plan objectives to drought years in order to justify the grazing reductions now proposed. The Forest Service could have used the more recent North Dakota State University (NDSU) data but excluded most of it on the unsupported basis that it was "inadequate" or "deficient." Since the Forest Service helped design and approved the study and its protocols, the dismissal of the data on the basis of inadequacy is not credible.
RESPONSE: See Response to Comment C-1.5

C-1.5 – 4. There are numerous other material errors in the use of the data, including the exclusion of the NDSU research. Billings County can only conclude that the more recent NDSU data and reports were excluded because they suggested that current MGA grazing practices are consistent with the Grasslands Plan objectives and FS had to manipulate the data and the process to justify the grazing reductions that it decided to adopt more than two years ago.
RESPONSE: See Response to Comment C-1.3. The commentor is incorrect, the Forest Service did incorporate the available cooperative monitoring data collected by North Dakota State University (NDSU) in the SDEIS analysis where appropriate (see individual resource methodologies in the SDEIS Volume I, Chapter 3). The Forest Service also reviewed data collected after the issuance of the SDEIS to see if any of the analyses would change based on the additional information. This review has been shared with the decision maker in order to make an informed decision and is included in the Errata.

C-1.6 – 5. The 2009 economics report on the "Effects of Proposed FS Grazing Cuts on Ranch Operations on the MRD, commissioned by Billings County, states: "The prognosis that existing ranches in North Billings County can absorb 10 to 40 percent grazing cuts and remain economically viable is unfavorable."
RESPONSE: The final report the commentor cites, no longer makes these claims. Instead the report now concludes, "The prognosis that existing ranches in North Billings County can absorb 10 to 40 percent grazing cuts and remain economically viable is low" (see Billings County Economics report dated April 5, 2010).

C-1.7 – 6. The FS selectively quoted the NDSU economics report to support their conclusion, "Overall, though, the national grasslands and forests of the Northern Great Plains play a minor role in the total production of cattle and sheep." This single statement omitted the report's conclusions that the reductions would adversely affect local agriculture community. This

is unfortunately representative of the biased information and data manipulation found throughout the SDEIS.
RESPONSE: The quotation provided is not from the NDSU report, it was from page 241 (SDEIS Volume I Chapter 3), where the Forest Service economist compiled information to provide a Land Base Overview and Settlement History. In fact it is preceded by the following statement, "Livestock production from National Forest System (NFS) lands on the Northern Great Plains is very important to the people who hold grazing permits." The Forest Service has provided a summary of the findings from the NDSU report as well as a comparison of the modeling approaches, which included a critique of how well the analysis assumptions compare and represent the situation in the project area.

C-1.8 – 7. The economic impact to the area from the first round of grazing reductions will be well over $3 million dollars. If the reductions are as much as 40% or more, the economic impact to the area would be well over $10 million per year by the end of the first 10 year planning period. Because the SDEIS uses the actual use data from drought years to minimize the reductions and economic impacts, it is more difficult to estimate the actual reductions proposed.
RESPONSE: In the final NDSU report there is no longer any estimate provided for total economic impacts (Billings County Economics report 2010). In fact, the report does not even analyze a 15 percent initial reduction. It analyzes 10, 20, and 30 percent reductions each with an assumption that ranches all operate with 90 percent of revenues from cow calf enterprises, which overestimates the true situation in the North Billings project area. The statement that grazing cuts will lead to herd reductions is a point the Forest Service accepts could happen in some instances, and explains why the regional economic impact analysis conducted by the Forest Service looked at not only the loss of cattle marketings associated with reduced National Forest System (NFS) lands grazing but also the impacts of herd reductions as the higher impact end of the spectrum analyzed. This was done by looking at the impacts of removing all affected cattle that spend any time grazing NFS lands during the year for each alternative.

C-1.9 – 8. In March of 2011, Forest Service Chief Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops: *"The FS will not use a drought year as the basis for any analysis."* (Emphasis added). The Chief also pledged to work with local university institutions in developing research. The county finds the exclusion of the NDSU work, whose protocols were approved and partly funded by the Forest Service, inexplicable. The County further understands that the NDSU data and summaries flatly contradict the SDEIS discussion and specialist reports as they pertain to seral stage, and the project area's biological capability to produce high structure.
RESPONSE: The cooperative monitoring data collected by NDSU does not contradict the Botany specialist report about seral stage/plant composition because the data was fully utilized, completely supported, and strengthened conclusions of the Forest Service existing condition analysis of Vegetative Seral Stages. The commentor does not provide specific examples of the contradictions it alleges. See Response to Comments B-3, C-1.3, C-1.5, and C-3.160.

C-1.10 – 9. The FS collected their data between 2004-2008. The years of 2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year at 77% of normal. The FS uses the data and assessments from 2004 as the baseline year for all of the resource objectives. Billings County is justifiably surprised that the SDEIS has used drought year data for its riparian area readings, actual use numbers, and high structure assessments.
RESPONSE: **2004 was not the primary year for collecting resource data in the project area (see SDEIS Volume 1 Chapter 3 pages 111-221 and Response to Comments C-1.3 and C-3.102).**

C-1.11 – 10. Using data from drought years to support the conclusion that the 43 allotments included in the North Billings project area do not conform to Forest Plan objectives violates the most basic natural resource management principles as well as Chief Tidwell's promises to North Dakota.
RESPONSE: **Data from multiple years, not just the drought year of 2004, were utilized in developing the alternatives. In addition, a resilient, healthy stream rated at proper functioning condition (PFC), should remain at PFC during a drought, flood, i.e. extreme conditions. That is the rationale for the rating (Pritchard et al, 1998).See also Response to Comments C-1.3, C-3.102 and B-7.**

C-1.12 – 11. The FS and MGA shared the cost of having NDSU collect baseline data on the project area in 2008, 2009, and 2010. The FS only used the 2008 data to determine seral stages. The rest of the 2008 data, 2009 and 2010 data was not used in the SDEIS. If the Forest Service had used the data, the SDEIS would have to reach very different conclusions.
RESPONSE: See Response to Comments C-1.5, C-3.102, and C-3.153.

C-1.13 – 12. Chief Tidwell also committed to working with NDSU and relying on the university's research and data. The SDEIS excluded most of the NDSU data and research and this too does not conform to Tidwell's representations.
RESPONSE: See Response to Comment C-1.5.

C-1.14 – 13. The reason the NDSU data was omitted from the SDEIS analysis is that it did not support the FS conclusions regarding resource conditions or the role of livestock grazing. Inclusion and disclosure of the NDSU data would have precluded the FS from adopting the open-ended livestock grazing reductions now proposed in any one of the three so-called adaptive management alternatives.
RESPONSE: See Response to Comments C-1.5, C-3.102, and C-3.153.

C-1.15 – 14. Billings County filed comments on the first DEIS in October of2009. Sadly, almost two years later, the revised document does not reflect or respond to those comments. The SDEIS states that Alternative 3A is in response to the MGA comments. This is not accurate, because Alternative 3A includes the same proposed reductions found in the 2009 DEIS. The SDEIS does not respond to the National Environmental Policy Act (NEPA) issues raised, including failure to adequately address the scientific controversies, failure to consider a reasonable range of alternatives, and failure to adequately address the cumulative

impacts. The SDEIS alternatives do not respond to the specific criteria in the 2006 Livestock Grazing Record of Decision for the Grasslands Plan.
RESPONSE: The Forest Service believes that the SDEIS has responded to all commentors' comments from the DEIS and provided a reasonable range of alternatives (see ROD, 2013). In Alternative 3A, the initial action proposed for Authorized Use is to continue livestock grazing at Preference levels; however, adaptively Authorized Use adjustments are one of several options that could be implemented after an IDT has reviewed monitoring data displaying whether identified objectives have been met or moving towards Grasslands Plan objectives (SDEIS Volume I Chapter 2, pages 46 - 47). NEPA issues identified in the SDEIS were analyzed at both the landscape and individual allotment levels for their effects, thus the creation of both Chapter 3 Parts 1 and 2. Additionally, a more thorough discussion of the scientific controversies was included in the SDEIS such as the Carrying Capacity Analysis (Volume I Chapter 3, pages 86 - 89). Throughout Chapter 3 Part 1 (SDEIS Volume I, pages 105 - 108, pages 124 - 128, pages 161 - 165, pages 183 - 186, pages 206 - 210, pages 218 - 221, and pages 255 - 260) in the discussion of the cumulative effects, an extensive discussion of past, present, and future activities is included and discussed relative to how they are anticipated to interact with the effects of the proposed actions by alternative.

Billings County urges the Medora Ranger District to do the following:

C-1.16 – Revise the FEIS to exclude the drought data and to include the NDSU data, particularly as it may apply to production for purposes of determining biological capability, proper functioning condition (PFC) of riparian areas and woody draws, and seral stage.
RESPONSE: See Response to Comments C-1.4, C-1.9, C-1.12 and C-3.153.

C-1.17 – Revise all of the findings regarding consistency of the current grazing program with the Grasslands Plan objectives in light of the fact that drought data cannot be used; riparian PFC work sheets failed to conform to well-established protocols by not identifying other causes of nonfunctioning conditions; seral stage was read where non-native species are abundant, and the high structure readings were taken after snowfall had flattened the grasses.
RESPONSE: The Forest Service monitoring protocol for the Riparian resource was followed by the contractor and the IDT (see SDEIS Volume I Chapter 3, page 113). Causal factors are documented when they can be determined whether they are in the control of Forest Service management or not. For example, the PFC data sheet assessing Mikes Creek in Allotment 135 pastures 8 and 9 (Project Record, Supporting Documentation – Watersheds, L-54) lists road construction and oil & gas activity as causal factors.

See Response to Comments C-1.3, C-3.194 and C-3.199. See Response to Comment D-2.18 and the Wildlife specialist report (page 53) for details surrounding VOR data collection. In contrast to 2004, when there was no snow and less than one percent herbaceous high structure across the project area, in 2005, which included a snow event that put off data collection for a month for snow to clear, seven percent of the VOR transects were in high

structure. In addition, low structure went from 53 percent in 2004 to 29 percent in 2005 despite the snow that had fallen a month previous to the 2005 survey.

C-1.18 – Because of the errors in either the development of the data or its use, the Forest Service cannot impose livestock grazing reductions since it has no credible data to show that such reductions are needed or that the current grazing program is not consistent with the DPG Plan. The 2006 Grazing ROD required monitoring data but as shown in the comments, the data used by the Forest Service is also not monitoring data. If the Forest Service were to use the NDSU reports and underlying data, it would find that most of the areas conform to the Grasslands Plan objectives now.
RESPONSE: See Response to Comment C-1.3, C-1.4, and C-1.9. The Livestock Grazing ROD for DPG (2006) requirements were followed for the North Billings project, and NDSU data incorporated as it became available.

C-1.19 – Adopt Alternative 2 with conservation practices, which are an integral part of the MGA management.
RESPONSE: The decision maker has chosen to provide an opportunity for the MGA and its members to develop an implementation plan on an allotment by allotment basis, utilizing the Grazing Management Toolbox that addresses the identified objectives for the given allotment (see ROD 2013 for more details).

C-1.20 – In coordination with MGA, write a monitoring program that will be funded each year to facilitate the development of sound and credible data about on-the-ground conditions, including other causal factors, such as energy development;
RESPONSE: A reasonable monitoring plan is described in the ROD (2013) that includes monitoring from the Forest Service, MGA and its members, and potential cooperative monitoring partners as funding is available.

C-1.21 – Enter into an agreement with NDSU to continue monitoring to add to the baseline data assessment already performed by NDSU;
RESPONSE: The Forest Service does have an agreement with NDSU to collect cooperative monitoring data that is funded through 2014. After 2014, agreements are dependent upon available funding.

C-1.22 – Cease vetoing or obstructing conservation practices, including range structures, as part of Alternative 2, in light of the fact that the Grasslands Plan deleted the "no net increase in range structures" policy.
RESPONSE: The Forest Service does not have a "no net increase in range structures" policy. The commentor is referring to a policy that was proposed early in the development of the Grasslands Plan, but was removed in the final plan. Also, the Forest Service has, does, and will continue to authorize conservation practices that include range structural developments as needed to address resource concerns or replacement when the proper NEPA analysis can be accomplished.

C-1.23 – Billings County appreciates that fact that the above remedies are costly but the gravity and extent of the errors, as evidenced in the several hundred pages of analysis, leaves Billings County no choice but to insist on this solution.
RESPONSE: Comment Noted.

C-2 Medora Grazing Association (MGA) Cover Letter to Comment
Refer to Responses to Comments to Billings County Cover Letter, letters were nearly identical.

C-3 Billings County & MGA Comments

C-3.1 – In the "To Whom it May Concern" letter dated July 1, 2011 that accompanied the Supplemental Draft Environmental Impact Statement (SDEIS) the Forest Service (FS) states:

- The Medora Ranger District, Dakota Prairie Grasslands (DPG) proposes to use an adaptive management approach to continue to permit livestock grazing on the allotments.

Comment: The FS has already pre-selected an Alternative that has to have adaptive management in it. This eliminates Alternative 1 and 2 from further consideration as viable Alternatives.
RESPONSE: Regulation 40 CFR Section 1502.14(e) of the CEQ regulations states "Identify the agency's preferred alternative or alternatives if one or more exist, in the draft [environmental impact] statement…." At the time of the DEIS, the responsible official for this project did not have a preferred alternative. After review of information provided during the comment period on the DEIS, the responsible official has identified Alternative 4 as the preferred alternative for this project proposal (SDEIS Volume I, Summary page xviii), which incorporates adaptive management.

C-3.2 – In the "To Whom it May Concern" letter dated July 1, 2011 that accompanied the Supplemental Draft Environmental Impact Statement(SDEIS) the Forest Service (FS) states:

42. Based on analysis, I will decide through alternative selection, whether or not to continue livestock grazing on all or portions of the 43 allotments and if so, under what terms and conditions so as to meet or move towards Grasslands Plan goals and objectives in a timely manner.

Comment: The Deciding Officer states his decision is whether or not to continue livestock grazing on all or portions of the 43 allotments. This decision has already been made in the 2006 Livestock Grazing Record of Decision (ROD) for the DPG. It states:

43. This decision authorizes grazing on the Dakota Prairie Grasslands through the issuance of grazing agreements and/or grazing permits, which will comply with the provisions of the Dakota Prairie Grasslands Plan as finalized by this ROD. This decision to authorize

grazing satisfies the requirements of the Rescission Bill (Section 504 of Public Law 104-19, 7/27/95).

44. A no grazing alternative was considered but eliminated at the FEIS level because the Great Plains (including the DPG) evolved with several natural ecological disturbance processes, including herbivory (grazing). Grazing is an important process in achieving desired vegetation and habitat conditions to address rangeland and forest health and other issues.

The Deciding Officer also states "under what terms and conditions so as to meet or move towards Grasslands Plan goals and objectives in a timely manner." The DPG Plan objectives do not have to be met but they do have to move towards Plan goals and objectives. The "timely manner" part of this is what comes into question. Just how fast do those objectives have to be met? The Grassland Plan is built on the premise of using long term monitoring to determine whether the goals and objectives were correct or not. Long term monitoring is defined as 10+ years. The FS is using monitoring for this project on a much shorter scale, 3-5 years, trying to make adjustments that cannot be justified because it is too short a timeframe to determine if the actions taking warrant adjustment.
RESPONSE: The 2006 Livestock Grazing Record of Decision for the DPG does authorize grazing on the DPG, however it also stipulates that Allotment Management Planning will be conducted on a landscape or multiple allotment level, which is the point where changes in whether and how much grazing will continue to be permitted on each allotment.

On page 55 of the SDEIS Volume I Chapter 2, the Forest Service identifies that it is important to note that resources may be monitored more or less frequently than identified in Table 2.5 if the responsible official decides there is a need to do so. It continues by stating that completing needed monitoring will require a coordinated collaborative effort between the Forest Service, its agent the Medora Grazing Association, and others such as the North Dakota State University and Dickinson State University.

On page 53 of the SDEIS Volume I Chapter 2, it also states that monitoring includes both grasslands-level analysis and evaluation. Grasslands-level monitoring is discussed at length in Chapter 4 of the Grasslands Plan and is not reiterated here. Project-level monitoring is the focus of this section of the SDEIS.

C-3.3 – In the SDEIS, Volume 1, Abstract, it states:

- The purpose of this project is to continue livestock grazing while meeting or moving toward the goals and objectives of the Dakota Prairie Grasslands Land and Resource Management Plan (Grasslands Plan).

Comment: This statement was not in the DEIS. What was in the DEIS was: The purpose of this project is to ensure that the project area is meeting or moving toward management direction of the Dakota Prairie Grasslands Land and Resource Management Plan (Grasslands Plan). The FS and MGA agree at this point that the purpose of this project is to continue livestock grazing.

The disagreement comes as to the level of livestock grazing. The DEMO Project states: One key goal of the Demonstration Project is to maintain or improve current on-the-ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species. This "key goal" gets lost as the FS makes every effort to make maximize wildlife over livestock grazing, even when there is no justification to do so.
RESPONSE: The commentor does not provide specific examples of where wildlife is "maximized" over livestock grazing. We feel that the goals of the project are clearly defined, and in line with the goals described in the Demonstration Project and Grasslands Plan.

C-3.4 – In the SDEIS, Volume 1, Data Accuracy, it states:

- The Forest Service uses the most current and complete data available.

Comment: This is not true. Science and data are available that if used would change the impact of the Grassland Plan and certainly this project. NDSU has provided the DPG with this science and data but the FS has refused to acknowledge it and calls it "inadequate" science.
RESPONSE: See Response to Comment C-1.5. Also, the Data Accuracy statement is merely a disclaimer statement to inform the readers of the document that 1) the Forest Service uses the most current and complete available data, and 2) that some of the data comes from GIS products which can have differing levels of accuracy.

C-3.5 – In the SDEIS, Summary of the SDEIS, page i, it states:

- The Forest Service (FS) proposes to continue to permit livestock grazing on these allotments through a program of actions that maintains and/or moves resource conditions towards meeting the Grasslands Plan objectives and desired on-the ground conditions.

Comment: This does not match the "Purpose and Need" statement from the cover letter which states: "The Medora Ranger District, Dakota Prairie Grasslands (DPG) proposes to use an adaptive management approach to continue to permit livestock grazing on the allotments." At this point only alternatives with "adaptive management" are viable alternatives.
RESPONSE: The Forest Service disagrees with this comment since the cover letter available on the internet does not discuss the Purpose and Need of the project. The Purpose and Need for the project is discussed on pages 11 and 12 (SDEIS Volume I Chapter 1).

C-3.6 – In the SDEIS, Summary of the SDEIS, Purpose & Need, page iv, it states:

- The project specific need for action is created by the disparity between what is present (existing condition) and what is wanted (desired condition) of a resource.

Comment: Under the "Purpose and Need" there is no mention of the purpose stated in the Abstract: The purpose of this project is to continue livestock grazing while meeting or moving

toward the goals and objectives of the Dakota Prairie Grasslands Land and Resource Management Plan (Grasslands Plan). The FS identifies that now is the need for action, i.e. livestock reductions, because it has been determined there is a disparity between what is present (existing condition) and what is wanted (desired condition) of a resource. The "wanted" or "desired condition" is what many perceive to be a wildlife emphasis of the DPG over livestock grazing, which MGA believes will result in reductions that will drive many of its members off of the range.
RESPONSE: See Response to Comment C-3.3. Additionally, the commentor is presuming that livestock reductions are the only tool to address the need for action identified in the second table for each individual allotment (SDEIS Volume II, Table XXX.2) which is simply not the case. Several tools have been identified to address resource issues.

C-3.7a – Footnote #2 at the bottom of page iv, states:

- A requirement of the Demonstration Project is to "determine if Plan Goals and Objectives are achievable or need modification, and monitor progress towards meeting the resource objectives." The analysis completed for North Billings determined that the Plan goals and objectives are achievable; therefore, modification to the Plan is not needed and has not been incorporated. However, monitoring progress towards meeting the resource objectives is an integral component of the proposed action.

Comment: The DEMO Project states the following:

- The purpose of the Demonstration Project is to: 1) develop and implement integrated AMPs collaboratively with the respective grazing associations that share in the management of grazing on the National Grasslands; 2) to determine if LRMP Goals and Objectives are achievable or need modification; and 3) monitor progress towards meeting resource objectives.

The FS fails to include #1 above in the footnote. This exclusion of working collaboratively with the respective grazing associations will carry forward through the SDEIS and the FS fails to work collaboratively with the association as directed in the DEMO Project.
RESPONSE: While the commentor is correct that all 3 parts are included in the Purpose of the Demonstration Project on p. 8 of the 2006 ROD, the fact that item #1 was not included in the footnote does not mean that it has not been followed throughout the North Billing Project planning. The Forest Service has worked collaboratively with the MGA to develop the proposed action as is directed by the Demonstration Project.

C-3.7b The FS goes on to state that their analysis determined that the Plan goals and objectives are achievable; therefore, modification to the Plan is not needed and has not been incorporated. This is not true. There has been significant science and data presented to the FS to correct their definition of "biologically capable" to the point an amendment of the Plan is needed. The DEMO Project states:

- If a project is not consistent with the finalized Grasslands Plan guidelines, the deciding official has three options: 1) modify the project to be consistent; 2) develop an administrative record, to Administrative Procedure Act (APA) standards, explaining why deviation from the guideline(s) is a better way of achieving desired conditions and objectives of the plan; or 3) amend the plan (see Forest Service Handbook 1909.12 and 36 CPR 219.7(a)(2)(iii)).

The DPG should amend the plan and modify the North Billings Project to be consistent with the corrected definition of biologically capable according to the latest science and data.
RESPONSE: In the 2006 Forest Service Final Response to the SRT, it is stated high structure will only be required of biologically capable areas (2006 Final Response to the SRT Reports p. 5). It goes on to define the habitat types that are considered biologically capable for the Little Missouri National Grassland (2006 Final Response to the SRT page 5).

C-3.7c In the DEIS under Purpose and Need on page x, it states:

- There is a need for continued livestock grazing to support local families and communities. Local ranch families depend on forage on these NFS lands to augment their own lands and raise livestock to provide an income for their families. Much of their income is spent locally and contributes to the general economic well-being of the community.

This statement is not included in the SDEIS. MGA requests that it be included in the SDEIS and be made a "Key Issue."
RESPONSE: The SDEIS does recognize the commentor's concern; economics is listed as one of the key issues (see SDEIS Volume I Chapter 1, page 25).

C-3.8 – In the SDEIS, Summary of the SDEIS, Purpose & Need, page v, Table S.2 identifies which resources are of concern to this analysis. On page vi vegetative structure is identified as one of those resources. It states in the existing situation:

- Survey data from 1996 to 2005 show High structure ranged from 1 to 20 percent, Moderate structure ranged from 56 to 71 percent, and Low structure ranged from 23 to 53 percent.

Comment: The Scientific Review Team (SRT) stated that because a standard protocol was not in place until 2006 for the Robel pole visual obstruction readings (VOR) methodology on the DPG, that all data between 1995 and 2005 not be used. MGA requests that all survey data between 1996 and 2005 not be used by the FS on the North Billings project.
RESPONSE: The Forest Service reviewed the report's of the SRT dated May 2005 (SRT Issue II-1, page 12), the Dakota Prairie Grasslands initial position on the SRT Report dated June 20, 2005 (SRT Issue II-1, page 7), and the Dakota Prairie Grasslands final response to the SRT reports dated October 10, 2006 (SRT Issue II-1, page 7). The Forest Service does not find anywhere in these reports that the SRT states that because a

standard protocol was not in place until 2006 for the Robel pole visual obstruction readings (VOR) methodology on the DPG, that all data between 1995 and 2005 not be used. The commentor also does not supply a reference to were the SRT states this. See DPG Final Response to the SRT Reports 2006, DPG Response to SRT Issue II - 1 page 7.

C-3.9 – In the SDEIS, Summary of the SDEIS, Decision Framework, page vii, it states:

- The District Ranger is the responsible official who will decide, through alternative selection, **whether or not to continue livestock grazing** on all or portions of the 43 allotments and, if so, under what terms and conditions so as to meet or move toward meeting Grasslands Plan objectives in a timely manner.

Comment: As stated in Comment #2 above, the Deciding Officer's states his decision is whether or not to continue livestock grazing on all or portions of the 43 allotments. This decision has already been made in the 2006 Livestock Grazing Record of Decision (ROD) for the DPG. Also, this statement is not in line with "Purpose" for the project.
RESPONSE: Refer to Response to Comment C-3.2 above.

C-3.10 – In the SDEIS, Summary of the SDEIS, Key Issues, page viii, it states:

- An issue is an effect on a physical, biological, social, or economic resource. An issue is not an activity in itself; instead, it is the projected effects of the activity that create the issue. For example, livestock grazing is an activity, but its effects on a resource can form an issue.

Comment: Webster's definition of "issue" is a result, a consequence; a point, a matter or question to be disputed or decided. Livestock grazing may be the activity, but it effects (more grazing or less grazing) makes it an issue by the definition above and in Webster's dictionary. Its effect on the social and economic community can form an issue. MGA requests that the Deciding Officer make livestock grazing a key issue.

The FS looks at the regional or state level when they consider the economic resource. Instead of just looking at jobs and income, consider the culture and community in the economic analysis.
RESPONSE: The SDEIS is recognizing the commentor's concern by identifying economics as one of the six key issues in the project area (see SDEIS Volume I Chapter 1, page 25). See also response to C-1-19.

C-3.11 – In the SDEIS, Summary of the SDEIS, Key Issue #1, Riparian Areas, page viii, it states:

- There is a concern that livestock grazing is adversely impacting intermittent streams through excessive use of riparian vegetation, trampling and trailing of stream banks, loafing, etc.
- Some causes of stream degradation include livestock grazing and road impacts.

Comment: The summary for Riparian Areas first lists livestock grazing as adversely impacting intermittent streams. The last sentence includes road impacts as a cause for stream degradation. There are other causes of stream degradation, i.e. floods from extremely wet years such as 2010 and 2011 and drought. The FS focuses its analysis on livestock, discounting other effects. Considering only one activity in this analysis can lead an agency to the wrong conclusions in its efforts to correct a perceived problem. The FS schedule should open its analysis up to analyze other effects so they can present what is really happening in the riparian areas.
RESPONSE: The PFC surveys analyzed were conducted between the years 1997 and 2007. The floods of 2010 and 2011 had not occurred yet, therefore would not have had an impact on the analysis. Roads, drought and floods may contribute to adverse conditions. These contributing factors would be noted in the Watershed specialist report, and would have been considered in the cumulative effects section (SDEIS Volume I Chapter 3, pages 127 and 128). Streams reaches rated as NF or FAR-D should have corrective action taken within three years (Grasslands Plan, page 1-11 Guideline 13). Therefore, within the scope of this EIS livestock management adversely impacting intermittent streams through excessive use of riparian vegetation, trampling and trailing of stream banks, loafing, etc. needs to be corrected, other impacts that are occurring would be addressed in separate NEPA analyses. See also the Response to Comment C-1.17.

C-3.12 – In the SDEIS, Summary of the SDEIS, Key Issue #2, Green Ash Hardwood Draws, page ix, it states:

- The woody draws are generally in good condition; however, there is a concern that effects from livestock grazing (including browsing, trampling, lounging, etc.) are adversely affecting the distribution of tree and shrub age classes in green ash hardwood draws.

Comment: The same comment made above for Riparian Areas applies to Woody Draws.
RESPONSE: Besides adverse effects from livestock, other factors affecting woody draw conditions were identified and discussed under the Introduction and Cumulative Effects in both the SDEIS (Volume I Chapter 3, pages 130 - 132, 144 - 147, and 161 - 165) and the Botany specialist report (pages 5 - 8, and 73 - 76). Discussions included rationale of why livestock related disturbances were the principle factor of not meeting desired conditions. No other land use under Forest Service management exerts as great an effect on woody draw conditions and any potential changes in other resource management besides controlling invasive grasses would result in minimal improvement of woody draw conditions. The North Billings SDEIS focuses its analysis on livestock management while recognizing cumulative effects from other actions. However, changing management of other actions is outside of the scope of this project.

Research cited in the SDEIS and Botany specialist report correlated poor woody draw and/or riparian conditions with high livestock disturbances and good conditions with low livestock disturbances.

C-3.13 – In the DEIS, Key Issue #2, page xiv, it states:

- It is recognized that there are some natural forces, such as, late frosts and lack of wildfire, both of which affect woodlands, however, livestock grazing appears to be the primary force affecting the health of the green ash woody draws.

Comment: The FS does not provide any analysis or data to support this statement.
RESPONSE: See Response to Comment C-3.12.

C-3.14 – In the SDEIS, Summary of the SDEIS, Key Issue #3, Vegetative Structure, page x, it states:

- There is a concern that livestock grazing has affected the mosaic of vegetative structure in the project area, which has generally resulted in too little High structure and too much Low structure in light of Grasslands Plan structure objectives.

- Visual Obstruction Reading (VOR) surveys conducted in the project area for 2004 and 2005 show High structure ranging from 0.6 to 7 percent, Moderate structure ranging from 47 to 64 percent, and Low structure from 30 to 53 percent. These surveys were conducted on biologically capable lands within the project area. VOR surveys conducted from 1996 to 2001 in Billings County show High structure ranging from 3 to 8 percent, Moderate structure ranging from 47 to 83 percent, and Low structure from 11 to 49 percent. VOR surveys specific to the project area conducted between 1996 to 2001 show High structure ranging from 5 to 20 percent, Moderate structure from 56 to 70 percent, and Low structure ranging from 23 to 36 percent.

Comment: As stated in comment #8 above, the Scientific Review Team (SRT) stated that because a standard protocol was not in place until 2006 for the Robel pole visual obstruction readings (VOR) methodology on the DPG, that all data between 1995 and 2005 not be used. MGA requests that all survey data between 1996 and 2995 not be used by the FS on the North Billings project.

Most of the vegetative structure write up for the SDEIS has been taken from the Wildlife Specialist Report prepared by Arden Warm, Wildlife Biologist on the Medora Ranger District. Specialist Warm chose to use 2004 and 2005 as the years for his analysis.

In March of 2011, Forest Service Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops:

- The FS will not use a drought year as the basis for any analysis.

Specialist Warm states in his report that 2004 was a "drought year" for the North Billings Project area. Specialist Warm was wrong. It was a "severe drought". Analysis of any project based on a severe drought year is flawed and should not be used. MGA requests the FS not use Specialist Arden Warm's report in the North Billings project.
RESPONSE: See Response to Comments C-1.3 and C-3.8. See also Response to Comment D-2.1.

C-3.15 – In the SDEIS, Summary of the SDEIS, Key Issue #4, Vegetative Seral Stages, page xi, it states:

- The current distribution of seral stages across the project area is approximately 7 percent in early seral stage, 72 percent in mid seral stage, and 5 percent in late seral stage.

Comment: The FS states the existing situation for the seral stages, but fails to give a trend as far as moving towards or moving away from meeting objectives. As it is stated in the abstract at the beginning of this report, the purpose of this project is to continue livestock grazing while meeting or **moving toward the goals and objectives** of the Dakota Prairie Grasslands Land and Resource Management Plan (Grasslands Plan). Until the FS can determine which direction the seral stages are moving, usually through long term monitoring, they cannot justify the reductions in livestock numbers they are proposing.
RESPONSE: Plant composition, of which seral stage is a derived estimate, is a reflection of current management and disturbance processes on the landscape. When livestock management is similar from year to year, as it generally is in the project area, plant composition should remain relatively constant with slight fluctuations according to climatic variability. The continuation of current or similar management over the next 10 to 15 years should therefore result in the persistence of current plant composition. If current plant composition does not meet desired conditions, changes in management are entirely justified if predicted effects of changed management are supported by current practices, professional judgment, or the best available principles of range science. Trends of plant composition can therefore be predicted based on current plant composition and the effects of current or proposed management. Most range scientists cite proper stocking levels as the primary or most important tool of management to achieve sustainable forage and other rangeland values (Briske et al 2008, Derner and Hart 2007, Dormaar et al 1997, Eckert and Spencer 1987, Hart 1999, Hart et al 1993, Heitschmidt 1987, Heitschmidt and Walker 1996, Holechek et al 1989, 1999, KSU 1994, NRCS 1997, Pieper and Heitschmidt 1988, Smart et al 2005, Vermeire et al 2008, Whitman and Wali 1975, and Wilson 1986). So an adjustment in Authorized Use levels is justified if it is predicted to most successfully move resource conditions towards Grasslands Plan objectives.

C-3.16 – In the SDEIS, Summary of the SDEIS, Key Issue #4, Vegetative Seral Stages, page xi, it states:

- Approximately 16 percent of the sample sites are at an Invaded Grass State (NRCS, 2009) and not included in the seral stage analysis.

Comment: How many acres of the project area are in an invaded grass state? This will have a tremendous impact on acres meeting or moving towards objectives.
RESPONSE: A precise inventory has not been completed but it is estimated that 9,273 acres of NFS land were rated to be in an Invaded Grass State, while 8,598 acres involved broken land/crested wheatgrass. In addition to the 16 percent of the NDSU and sere plot sites rated to be in an Invaded Grass State, another 10 percent of sites were near a threshold of

transitioning to an Invaded Grass State. Only 8 percent of the sites were rated to be in a Reference State with only minor traces of invasive grasses. It is agreed that unchecked invasive species dominance will have an impact on Grasslands Plan resource objectives.

C-3.17 – In the SDEIS, Summary of the SDEIS, Key Issue #5, Economics, page xi, it states:

- Calculating potential impacts to an individual permittee is very complicated and requires information not readily available.
- The NDSU analysis looks at the effects of two of the four alternatives in terms of changes in gross sales and net revenues from cow-calf operations and debt repayment capabilities.

Comment: Because it is very complicated and requires information not readily available, the FS fails to look at the impacts to the individual member. Social and economic impacts from this size of reduction have a tremendous impact at the local community and individual level. If the FS doesn't calculate potential impacts to an individual member, then the economic analysis is not worth a whole lot. MGA requests the FS calculate potential impacts to individual members.

By only looking at the regional and state economics, the FS can easily wash away the impacts of the upcoming decision.
RESPONSE: The Forest Service utilized the best available economic information in its analysis. Billings County requested cooperating agency status which was approved through an agreement that indicated they would provide social and economic expertise and review for this project. The county's economic analysis report did not provide individual member data in order to do this type of an analysis either. Both the Forest Service and Billings County's economic analysis were based on models for various situations (see SDEIS Volume I Chapter 3, pages 224 - 233).

C-3.18 – In the SDEIS, Summary of the SDEIS, Key Issue #6, Drought, pp. xi- xii, it states:

- Lack of precipitation during the growing season (April through July) has a major impact on the production of forage.

Comment: Just as drought can have a major impact on the production of forage, so can an unusually high amount of precipitation. However, increases in livestock numbers given for excess forage produced during high moisture years is not addressed anywhere in the SDEIS. The main emphasis for the SDEIS is on grazing reductions. MGA requests the FS address what it will do in high precipitation years, as occurred in 2010 and 2011.
RESPONSE: The SDEIS does provide for temporary increases if monitoring indicates that resource objectives are being exceeded (see SDEIS Volume I Chapter 2, Table 2.4 – Design Criteria page 49 fourth bullet of the fifth design criteria). Also, through the MGA grazing agreement under the rules of management, a permittee may request an increase in permitted use to the board of directors and Forest Service (MGA Grazing Agreement

2009, III. Rules of Management, B. Distribution of Grazing Privileges, 6. Temporary Permits, pages 24 and 25).

C-3.19 – In the SDEIS, Summary of the SDEIS, Key Issue #6, Drought, pp. xi- xii, it states:

- The DPG currently does not have a unit-wide drought strategy but is in the process of creating one. During this interim period a modification of the drought strategy identified in the 2005 NE McKenzie Allotment Management Plan Revisions FEIS will be used. Once the DPG drought strategy is completed it will replace the interim strategy.

Comment: The modification of the drought strategy is further explained in the Wildlife Specialist Report by Arden Warm. He states:

- Stocking Guidelines from Reece (1991): This is the core of this review. Reece states on page 1: "Stocking rate is the most important tool for grazing management, especially under drought conditions." And: "Stocking rates for individual pastures should be based upon target levels of defoliation for key species." However, Reece's strategy is tailored to the private lands manager NOT the public lands manager. Wildlife is mentioned once and that is the context of "causing drought-like conditions." Habitat is not mentioned once. Further, a simple look at page 5 shows the private lands manager bias.

- Conclusion
  - Utilizing Reece (1991) as a Drought Management Strategy will require adapting from a private lands manager perspective to a public lands manager perspective. This will require re-visiting the stocking guides as put forth in Reece which assumes minimizing financial hardships versus reducing "adverse impacts of droughts to food and cover for prairie grouse and other wildlife." First and foremost is the 50% bias which does not seem to fit with research.

  - The positive aspect of adopting and adapting Reece is the potential for a more timely response time to dry conditions. This would help alleviate impacts to the vegetation and other resources.

Since the FS is using the Wildlife Specialist Report for much of the SDEIS, it would be safe to assume that Mr. Warm's modifications will be adopted by the FS in the FEIS. MGA requests the FS adhere to the draft drought strategy developed and implemented in the 2005 NE McKenzie Allotment Management Plan Revisions FEIS. The former Grassland Supervisor commended the McKenzie County Grazing Association process and results from implementing the draft drought strategy in 2008. Mr. Warm is obviously after the highest reductions that can be achieved to provide for the maximum habitat for wildlife, even if it isn't needed.
RESPONSE: The DPG has adopted a Drought strategy for the Western Grazing Associations (Peak Oct, 2011). This will be implemented and integrated into the process through the ROD.

C-3.20 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, page xii, it states:

- *It is important to note that Authorized Use under all the alternatives, except Alternative 1, can be adjusted annually to account for situations that require additional resource protection. Examples include drought, grasshopper outbreaks, over-utilization of a pasture, etc. These adjustments are temporary in nature and normally encompass a single grazing season. However, if a resource has been severely affected, adjustments may be of longer duration.*

Comment: The FS refers to making annual adjustments that are reductions only. They do not refer to increases in stocking when precipitation and forage production are above normal, i.e., 2010 and 2011. MGA requests that the FS adds increases in stocking to this section.
RESPONSE: See Response to Comment C-3.18.

C-3.20a This is also why the tool box does not need to contain the following management actions. They can be handled in the AOIs:

The tools that should not be included in the tool box are:

- Adjust AUMs (stocking rate) by# of head &/or# of days.
- Adjust AUMs based on average cow size.
- Adjust season of use.
- Allow early turnout on native pastures one out of 3 years on inventory permits.
- Defer native pastures until June 1, or until development of the three-and-a-half leaf stage for key graminoid species.
- Implement DPG drought management strategy.
- Incorporate a range rider to disperse livestock throughout a pasture (herding).
- Maintain existing developments to reestablish use.
- Manage salt and supplement locations.
- Manage water availability/access at water developments.
- Utilize non-native grass pastures early to defer grazing on native grasses.

All of the above management tools are managed every year in the AOI. The only reason to keep these tools in the Tool Box is so the FS can make permanent reductions or permanent adjustment in stocking rates without going through the NEPA process again. Any adjustments in preference, stocking rates, for cow size and season of use need to undergo the NEPA process before the FS can make those changes. After all, isn't that why this NEPA project is being conducted?
RESPONSE: While it is true that some of the commentor's indicated tools have been implemented through AOIs historically, now is the time to analyze and disclose to the public the effects of multiple management tools and how those tools will move resources towards Grasslands Plan objectives. Once AMPs have been written, the AOI will document from year to year how that AMP has been implemented, and the Forest Service can monitor its effectiveness towards obtaining Grasslands Plan objectives.

It is not necessary to initiate new NEPA if management changes are within the scope of documented effects. Adaptive management provides that tool that allows for flexibility since possible adjustments have already been analyzed so long as monitoring indicates that the environmental effects do not exceed the bounds of those anticipated in the final decision.

C-3.21 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 1, page xiii, it states:

- Since livestock grazing would no longer be authorized under this alternative, no mitigation measures for riparian habitat, woody draws, herbaceous structure, or seral stages would be completed.

Comment: The FS implies that no other activities impact the resources other than livestock grazing. This is not true. MGA requests the FS consider the other activities that can and do impact the resources. By portraying livestock grazing as the only activity that causes a disturbance affecting resources FS shows its bias against livestock grazing.
RESPONSE: The SDEIS should have indicated that no other livestock related mitigation measures would be completed; however, in the next sentence in this paragraph it goes on to say that restoration projects could be planned and implemented they just would not be a part of this proposal (SDEIS Volume I Summary, page xiii). Additionally, there is a section that discusses past, present, and reasonably foreseeable actions that recognize other activites that can affect Grasslands Plan objectives (see SDEIS Volume I Chapter 3, pages 76 - 84 for more details). Pages 125, 162, 163, and 184 of the SDEIS (Volume I Chapter 3) again identify past and present actions that have or may occur within the project area.

C-3.22 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiii, it states:

- As identified in Chapter 1, the proposed action for this project is to continue to permit livestock grazing at Preference, **initially,** on the 43 allotments in the project area through a program of actions that maintains and/or moves resource conditions towards meeting the Grasslands Plan objectives and desired on-the-ground conditions. This is to be achieved through implementation of initial actions and application of adaptive options, including the tool box if initial actions fail or cannot be implemented.

Comment: The Forest Service calls this Alternative the "proposed action." As outlined in the Demonstration Project, it states the following:

- The purpose of the demonstration project would be to develop and implement integrated allotment management plans pursuant to a collaborative process with the respective grazing associations that share in the management of grazing on the National Grasslands, to determine if Plan Goals and Objectives are achievable or need modification, and monitor progress towards meeting the resource objectives.

- The pre-NEPA process would be completed in careful consultation, coordination, and cooperation with the grazing associations representing their members working in concert with the Forest Service.

- The working groups' or Forest Service and the grazing associations and their members' proposals would be carried forward in the National Environmental Policy Act (NEPA) process as the Forest Service's proposed action for the AMP and any related LRMP amendments, provided they are consistent with existing law.

- The range of alternatives might include, but are not limited to: 1) the proposed action, which would be the approach agreed to by the grazing associations and the Forest Service.

The MGA and FS did not develop the proposed action. Having three (3) meetings with the MGA Board and saying the "proposed action" has been developed by both parties is not true. This alternative was developed by the FS and MGA never agreed to it. The primary reason Alternative 3A was developed was so the FS could claim that they listened to MGA and this is the grazing association's alternative. This alternative was never agreed to by MGA either. Therefore, the FS failed to meet the requirements of the Demonstration Project.
RESPONSE: The Forest Service had three sets of meetings with the MGA director and individual grazing association permit holders and lessors in the case of leased base property to develop a proposed action. The Demonstration Project does not indicate that the proposed action is required to be agreed to by the grazing association. However, it does say that the process on how to proceed in the development of the proposed action should be agreed to (The Livestock Grazing ROD for DPG FEIS and LRMP, 2006, Demonstration Project Provision #8, page 17). Refer to Appendix A of the Draft ROD for the North Billings Project for a complete detailing of the coordination and work between the Forest Service and MGA throughout the development of the North Billings Project.

The FS shows its bias that Alternative 3 will not work by saying that no cuts will be implemented at first, "initially," but cuts will take place because this alternative cannot reach plan objectives.
RESPONSE: Alternative 3 does not propose any initial adjustments in Authorized Use. In order for this tool, "Adjustments in Authorized Use," to be implemented, Adaptive Management dictates that monitoring will need to display that the resource is not moving towards identified goals and objectives for that allotment. Adaptive Options and other Toolbox tools would not be implemented without monitoring showing the need for a change in management (see SDEIS Volume I, Chapter 1 pages 15 - 17 and Chapter 2 pages 53 - 61). The analysis displays the anticipated effects of implementing each alternative.

C-3.23 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiii, it states:

- Tables x.2 and x.3 (identified by allotment number rather than chapter number) contained in each of the individual allotment write-ups in Chapter 3 Part 2, contain

information identifying existing and **desired conditions,** need for action, initial management actions, and a set of adaptive options to address identified resource concerns for each allotment in the project.

Comment: Desired Conditions are not evident in Tables x.2 or x.3.
RESPONSE: The commentor is correct, desired conditions were not repeated for each table by allotment in SDEIS Volume II. The narrative will be corrected in the Errata.

C-3.24 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiii, it states:

- A key component of this alternative is monitoring, because it determines whether implemented management actions are accomplishing their intended resource goals. The starting point for each allotment is identified as "Initial Actions" in Table 3 of the allotment write-ups located in Chapter 3 Part 2. If monitoring indicates that the initial actions are not meeting or moving a resource towards desired condition, then adaptive options can be applied. Monitoring is discussed in detail later in this document. The type, frequency, and duration of monitoring on each allotment are identified in Table 3 of each of the allotment write-ups.

Comment: The FS needs to define what "monitoring" will be used to make adjustments, i.e. reductions.

Is it short term or long term monitoring? The FS says that the type, frequency and duration of monitoring on each allotment are identified in Table 3 of each of the allotment write ups. However, looking at Allotment 126, Table 3, shows monitoring as follows:

- Monitoring - Survey woody draws once every 3 to 5 years. Gather Visual Obstruction Readings once every 3 years. Complete Properly Functioning Condition survey once every *5* years. Collect vegetative composition and production data once every 3 to *5* years.

Long term monitoring, which is used to establish trends from, is the monitoring used to make adjustments in the stocking rates for not meeting or moving toward objectives. Monitoring of 3-*5* years is short term monitoring, and is not of a sufficient time period to establish trends. An example would be if the FS monitors every 3 years, it wouldn't be until after the 4th monitoring period that a trend could be established to make a permanent adjustment.

However, it is evident that the FS plans to make adjustments every year in the annual operating instructions (AOIs) if objectives are not being met. This is extremely evident in VOR measurements and high structure. MGA requests the FS not use short term monitoring to make adjustments in stocking rates because a trend cannot be established in such a short time frame.
RESPONSE: Monitoring requires collecting data at intervals. It is felt that collecting data every 3-5 years for many of the resources will provide the data necessary to make professional judgments as to trend. See link below for related information.

The process for making potential adjustments in management is located under the Monitoring and Trigger Point discussion (SDEIS Volume I Chapter 2, pages 53 - 61). A Trigger Point is a monitoring objective with each specific resource having a time related objective. Under Trigger Points, the SDEIS states that "[O]nce a trigger point is reached, the district ranger will convene a team. The team, composed of Forest Service specialists in consultation with the affected permittee and MGA director, will review the monitoring data and other pertinent information to determine if a management adjustment is needed. If it is determined that any adjustments are needed, the team will review the adaptive management options identified in Table 3 under each allotment write-up…and *recommend* a course of action to the District Ranger." There is no automatic adjustment at any point in time (see sidebar SDEIS Volume 1 Chapter 2, page 56). The fifth and sixth Design Criteria in Table 2.4 are to be applied (SDEIS Volume I Chapter 2, pages 48 and 49). See also Draft ROD Decisions and Rationale section and Appendix B (Allotment Decision Tables) and Appendix E (Monitoring Protocols).

C-3.25 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiv, it states:

- If initial or adaptive management options identified in the allotment write-ups located in Chapter 3 Part 2 cannot be implemented as planned, then a team composed of Forest Service specialists, in consultation with the affected permittee and MGA director, would make a recommendation to the district ranger.

Comment: The process used here to assess initial or adaptive management options is not the process MGA would like to see used. Since MGA is given the responsibility of administering the grazing program on their part of the Medora Ranger District, it would be natural for the following process to be used:

- If initial or adaptive management options identified in the allotment write-ups located in Chapter 3 Part 2 cannot be implemented as planned, then a team composed of Forest Service specialists, affected member(s) and MGA Director would make a recommendation to the MGA Board of Directors and the district ranger.

This process includes the MGA Board and Ranger working collaboratively.
RESPONSE: The Forest Service will be working collaboratively with the MGA board of directors as described in the SDEIS (Volume I Chapter 2, page 56). However, Forest Service line officers such as the district ranger, are ultimately required to make a decision in the management of NFS lands; therefore the team which will include the MGA board of directors can only make recommendations to the line officer (36 CFR §200.2, 200.3, and 213.3 and FSM 2204.3). Refer also to the Response to C-1.19.

C-3.26 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiv, it states:

- The recommended course of action would be based on the adaptive options identified for each allotment in Chapter 3 Part 2 and/or the Grazing Management Toolbox (Table S.3).

Comment: The concept of adaptive management and the tool box is good if the toolbox contains tools that will help both the FS and MGA solve problems on the ground. There are management tools in the toolbox that do neither and should be excluded. These so called management tools should be removed because they are all used in the annual operating instructions each year adjusting for climatic conditions and other unforeseen circumstances that causes the FS and MGA to make those adjustments annually.

The tools that ***should not*** be included in the tool box are:

- Adjust AUMs (stocking rate) by# of head &/or# of days.
- Adjust AUMs based on average cow size.
- Adjust season of use.
- Allow early turnout on native pastures one out of 3 years on inventory permits.
- Defer native pastures until June 1, or until development of the three-and-a-halfleaf stage for key graminoid species.
- Implement DPG drought management strategy.
- Incorporate a range rider to disperse livestock throughout a pasture (herding).
- Maintain existing developments to reestablish use.
- Manage salt and supplement locations.
- Manage water availability/access at water developments.
- Utilize non-native grass pastures early to defer grazing on native grasses.

All of the above management tools are managed every year in the AOI. The only reason to keep these tools in the Tool Box is so the FS can make permanent reductions or permanent adjustment in stocking rates without going through the NEPA process again. Any adjustments in preference, stocking rates, for cow size and season of use need to undergo the NEPA process before the FS can take those actions. After all, isn't that why this NEPA project is being conducted?

Leaving the above tools in the tool box gives the FS the ability to "adjust" a member right out of business without ever having to perform the required NEPA process to do so.

The tool "Implement DPG drought management strategy" cannot be included because one doesn't exist.
RESPONSE: See Response to Comment C-3.18 and C-3.31.

C-3.27 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiv, it states:

- However, for economic reasons it becomes unfeasible to develop the well and facilities in the reasonably foreseeable future, but the resource concern still needs to be

addressed. At this point the additional management tools identified in the toolbox would be available to help solve the concern.

Comment: The first option in the toolbox the FS will use is to adjust the stocking rate, which means more reductions. This option should not be in the toolbox, because the FS can adjust the MGA member right out of business without further NEPA processes. Any stocking rate adjustments can be handled in the AOI through monitoring until it is proven in long term monitoring that a permanent adjustment is needed, and the NEPA process can be repeated.
RESPONSE: Adjustments in stocking rates are merely one tool in the Toolbox, additionally the commentor provides no examples to base their statement that it will be the first tool used. The SDEIS effects analysis concluded that not all resources would see a positive trend towards Grasslands Plan objectives from implementation of adjustments in Authorized Use, in particular vegetative seral stages (SDEIS Volume III Appendix D, pages 7 and 8). See also Response to Comments C-3.24 C-3.25 and C-3. 3.18.

C-3.28 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 3, page xiv, it states:

- Between the DEIS and SDEIS, initial actions for Alternative 3 were modified for allotments 126, 128, 132H, and 300 based on discussion with the permittee for those allotments.

Comment: The modified initial actions for these allotments should have been reviewed with the MGA Board of Directors, because they are the only "permittee" on the MGA part of the Medora Ranger District. MGA does not have permittees, they have members. From now on the FS needs to call ranchers belonging to the MGA, "members," not "permittees."
RESPONSE: Permittee is defined in both the 2009 and 1999 grazing agreements between the MGA and the Forest Service. In III. Rules of Management A. Terms Defined #9, a permittee is defined as "Anyone having a grazing permit issued by the Medora Grazing Association".

The modifications to Alternative 3 as referred to by the commentor were made to address DEIS comments submitted directly by the individual that is permitted to graze livestock in those allotments (see DEIS Comments J-1 through J-11). The Forest Service is required by NEPA to review and consider all comments made by the public.

C-3.29 – In the SDEIS, Summary of the SDEIS, Alternatives Considered in Detail, Alternative 4, page xvii, it states:

- Alternative 4 is similar to Alternative 3 in some respects. However, it differs from Alternative 3 by establishing Authorized Use based on estimated livestock carrying capacities, and it accounts for changes in animal unit forage demands with changes in cow size (animal weight). Preference numbers for four allotments were less than the FS's initial estimated carrying capacity. Because there were resource

concerns in these allotments, Authorized Use was set at Preference adjusted for cow size as a starting point.

Comment: The FS arbitrarily gave four allotments a reduction in stocking rate because they say there were resource concerns, even though their preference was less than initial estimated carrying capacity. MGA disagrees with this arbitrary approach to making reductions. The FS should do the analysis first before making any recommended reductions. This also demonstrates the FS bias toward making as many reductions to get the stocking rates to a "light grazing intensity" (reductions of 40%-70%) as outlined in Appendix I of the DPG Plan.

RESPONSE: The need for action identified for those four allotments referred to was based on the comparison of existing conditions to desired conditions (see SDEIS Volume II, Table XXX.2 for each individual allotment). In review of the initial estimated carrying capacity (IECC) for each allotment it was determined that while the IECC for these allotments was greater than the Preference, the current level of Authorized Use was not moving resource conditions towards Grasslands Plan objectives. Therefore, the SDEIS in Alternative 4 proposed to authorize use at the Preference level adjusted for cow size as an initial action in combination with additional tools to address resource issues. See also Response to Comment C-3.65.

C-3.30 – In the SDEIS, Summary of the SDEIS, Design Criteria Common to Action Alternatives, Table S.6, page xviii - xix, it states:

- On native pastures, defer turnout until June 1, or until the three-and-a-half leaf stage is reached for key native graminoid species, e.g., western wheat, green needle, needle and thread. On inventory permits, early turnout on native pastures is allowed one out of 3 years.

Comment: MGA will assume that if the three-and-a-half leaf stage is reached for key native graminoid species is reached before June 1, i.e. May20th, then turnout can occur on May20th.

RESPONSE: The commentor is partially correct. The three-and-a-half leaf stage for key native graminoid species is typically around June 1st; however, depending upon the given climatic conditions for that year the turnout date may be earlier or later than June 1st.

- For allotments requiring a AM/AUM reduction:
  - If monitoring shows that resource objectives are being met before full implementation of the AM/AUM reduction has occurred, and then no further reduction in AUMs will be implemented.
  - If, after the reduction in AM/AUMs is complete, monitoring hows that resource objective(s) have not been met but a significant sustained upward trend is evident, then further AUM adjustments will not occur unless continued monitoring indicates the upward trend is not being sustained.

- If, after the reduction in AM/AUMs is complete, monitoring shows that resource objective(s) are not being met and there is a **stagnated** or downward trend, then, as an adoptive option, further AM/AUM adjustments may be initiated.
- Temporary increases in AUMs may be granted if monitoring indicates that resource objectives are being exceeded.

Comment: What "monitoring" is used to invoke adjustments or reductions, long term or short term? The above table would indicate short term. Short term monitoring (less than 10 years) is not long enough to establish whether objectives are meeting or moving towards objectives. Long term monitoring has to be used before considering any adjustments or reductions.

In the third monitoring bulleted item, "stagnated" needs to be moved to the bulleted item above it. Stagnated trend means that the observers could not determine if the trend was moving up or down. It trend cannot be determined, then it cannot be used to make adjustments or reductions.
RESPONSE: See Response to Comments C-3.15, C-3.24, and C-3.135.

The commentor is incorrect in the definition of stagnated trend in the referenced Design Criteria. The SDEIS is referring to monitoring that shows a trend that is not advancing, i.e. stagnating or is trending downwards. In order to show progress towards Grasslands Plan objectives, monitoring must show that the resource is meeting or moving towards that particular objective. If monitoring is not showing this progress, then additional actions can occur in an adaptive management process as identified in this particular Design Criteria.

- Permittees will be notified verbally and in writing that reductions in numbers and/or seasons may be anticipated.

Comment: MGA requests the FS use the term "member" instead of "permittee" when referring to members of MGA.
RESPONSE: See Response to Comment C-3.28.

- Range improvements will be maintained to standard by the allotment permittee prior to turning livestock into the affected pasture.

Comment: What about range improvements that are beyond their expected life as determined by FS standards? What are the maintenance standards for them?
RESPONSE: This comment is beyond the scope of the North Billings Project. However, the grazing agreement provides guidance and definitions relative to the replacement of range improvements that have reached their life expectancy.

C-3.31 – In the SDEIS, Summary ofthe SDEIS, Design Criteria Common to Action Alternatives, Table S.6, pp. xviii - xix, it states:

- The drought strategy would be incorporated into Alternatives 3, 3A, and 4, and would:

- Use the publication *Drought Management on Range and Pastureland* (Reece et al. 1991) to determine allowable stocking levels during drought, unless interdisciplinary collaboration between the Forest Service and the Medora Grazing board provided rationale to deviate from those guides. This publication **calculates** stocking guidelines by considering weather and soil- moisture. The publication is identified in the Literature Cited section in this SDEIS and is located in the Project Record.

- Manage grazing during drought, with the objective of maintaining at least 10 percent of herbaceous communities across biologically capable lands in the project area, for high structure and at least 40 percent for moderate structure. This will help ensure that the project area is not grazed evenly and retains plant cover to provide wildlife habitat, conserve soil moisture, and prevent soil erosion.

- Recognize that allowable utilization rates would be lower during drought.

- Recognize that frequent allotment inspections and early and frequent communications with permittees are key to ensuring that this strategy is effective.

Comment: The Wildlife Specialist Report is again used to determine what modifications are made to the NE McKenzie AMP FEIS Drought Strategy. One of the elements of the NE McKenzie Project Drought Strategy was that it did not incorporate the formulas outline in the *Drought Management on Range and Pastureland* (Reece et al. 1991) publication. It instead used set standards that were outlined as objectives. Specialist Arden Warm didn't like those standards and thought stricter standards were needed.

Since the FS is using the Wildlife Specialist Report for much of the SDEIS, it would be safe to assume that Mr. Warm's modifications will be adopted by the FS in the FEIS. MGA requests the FS adhere to the draft drought strategy developed and implemented in the 2005 NE McKenzie Allotment Management Plan Revisions FEIS. The former Grassland Supervisor commended the McKenzie County Grazing Association process and results from implementing the draft drought strategy in 2008. Mr. Warm is obviously after the highest reductions that can be achieved to provide for the maximum habitat for wildlife, even if it isn't needed.
RESPONSE: First, the DPG has adopted a Drought strategy for the Western Grazing Associations (Peak Oct, 2011). This will be integrated into the process thru the ROD.

Appendix C of the Wildlife specialist report will be appended to include that the proposed SDEIS Drought Strategy was replaced by the Unit-Wide drought strategy.

C-3.32 – In the SDEIS, Summary of the SDEIS, Monitoring, page xix, it states:

- Through monitoring, the Forest Service can measure whether or not management actions are meeting or moving towards desired conditions in an appropriate timeframe.

Comment: MGA would like to see this statement include "long term monitoring: after the word "Through."

As stated by the FS, monitoring is a key component of the Action Alternatives. In Holecheck, Jerry L., Rex Pieper, and Carlton H. Herbel. 1989. Considerations Concerning Stocking Rate. *In:* Range Management Principles and Practices. pp. 173-209. Prentice Hall, NJ., Chapter 7, Range Inventory and Monitoring, P. 157, the following definition of monitoring is given:

- **Monitoring**, on the other hand, is an evaluation process usually conducted to determine the response to some management program. Hence monitoring is usually conducted several times over a fairly long time span. One might, for example, develop a monitoring scheme to evaluate a particular grazing system or to determine the efficacy of an herbicide treatment.

The emphasis here is the "**over a fairly long time span", usually 10 years of longer.** And monitoring plans are usually developed to evaluate to see if objectives are being met.
RESPONSE: See Response to Comments C-3.2, C-3.15, C-3.24, and C-3.135.

C-3.33 – In the SDEIS, Summary of the SDEIS, Monitoring, pp. xix - xx, it states:

- Two types of monitoring are associated with initiating management actions for a grazing allotment-implementation monitoring and effectiveness monitoring. Implementation monitoring generally measures and documents whether or not Grasslands Plan standards and guidelines and project-level design criteria (as selected in the Record of Decision for this project) are being applied. Effectiveness monitoring evaluates how effective management actions are at moving toward, achieving, or maintaining desired conditions. Under Alternatives 3, 3A, and 4, if a management action is determined not to be effective, the monitoring will trigger implementation of an adaptive management action. Under Alternatives 1 and 2, additional NEPA would be required before any substantive changes could be made.

Comment: Effectiveness monitoring should be labeled "long term monitoring". If effectiveness monitoring is the monitoring that triggers an adjustment or reduction, then it should be long term.
RESPONSE: See Response to Comments C-3.2, C-3.15, C-3.24, and C-3.135.

- Under Alternatives 1 and 2, additional NEPA processes would be required before any substantive changes could be made.

MGA recommends this be a part of the "Action Alternatives" for adjustments in stocking rate, season of use and cow size.
RESPONSE: Alternatives 3, 3A and 4 have been written to include adaptive management. All of the tools within the Toolbox have already gone through the NEPA process in the North Billings project. No additional NEPA would be required as long as the management changes are within the scope of documented effects.

- Herbaceous structure, composition, riparian areas, and green ash woody draws will be the focus of effectiveness monitoring. Table 3 under each allotment write-up located in Chapter 3 Part 2 identifies the type and frequency of monitoring that is proposed for each allotment.

Comment: These four resources that will be monitored are the ones that will also trigger reductions if objectives are not meeting or moving towards meeting. Table 3 indicates monitoring will be short term at first:

- Monitoring - Survey woody draws once every 3 to 5 years. Gather Visual Obstruction Readings once every 3 years. Complete Properly Functioning Condition survey once every 5 years. Collect vegetative composition and production data once every 3 to 5 years.

The FS will try and make adjustments of the short term monitoring, which is wrong. MGA requests the FS use only long term monitoring in making any decisions about reductions or adjustments.
RESPONSE: Under adaptive management, the Forest Service has multiple tools to utilize if monitoring shows the need for a management change. See also Response to Comment C-3.2, C-3.15, C-3.24, and C-3.135. Trigger points may or may not result in a change in livestock management.

C-3.34 – In the SDEIS, Summary of the SDEIS, Implementation (Sort Term) Monitoring, page xx, it states:

- Implementation monitoring is short-term monitoring that evaluates whether livestock management is being applied as prescribed in the AMP and implemented through the AOI. The Forest Service in conjunction with the MGA, under the direction of the Grazing Agreement, conducts this type of monitoring.

Comment: The direction given in the 2009 Grazing Agreement is as follows:

- **J. 2.** Pasture Directors or their designated representatives will monitor or compliance check the implementation of allotment management plans, including the routing schedule, moving dates, salting and riding efforts, and all other aspects indicated in the plan.

However, on page xix, it states something a little different than what is said in the Grazing Agreement. It states:

- Implementation monitoring generally measures and documents whether or not Grasslands Plan standards and guidelines and project-level design criteria (as selected in the Record of Decision for this project) are being applied.

This does not meet the language in the Grazing Agreement. The above statement should be taken out of the SDEIS.
RESPONSE: The 2009 grazing agreement (II. General Agreement, F. It is Further Understood That, 2., page 13) discusses the AMPs that the commentor is referring to. On page 13 it states, "An allotment management plan (AMP) is required for every allotment and will be completed on a priority basis within the guidelines contained in the Grasslands Plan using the procedure outlined in the Demonstration Project which was included in the Livestock Grazing Record of Decision for the Dakota Prairie Grasslands Land and Resource Management Plan signed on September 6, 2006." Therefore, between the language in the SDEIS and the language in the 2009 grazing agreement, AMPs will be written based on direction from the Grasslands Plan, AMP implementation will be conducted by the MGA, and monitoring of AMP implementation will be conducted by MGA pasture directors or their designated representatives. The Forest Service believes the commentor's referenced SDEIS statement meets the referenced language in the 2009 grazing agreement.

C-3.35 – In the SDEIS, Summary of the SDEIS, Compliance with AMP and AOI, page xx, it states:

- The AOIs implement the AMP and clearly explain how each allotment is to be managed on a year-to-year basis. The 2009 Grazing Agreement defines AOIs as detailed; **FS and MGA approved,** instructions for livestock grazing administration to be implemented in a given year on a given allotment developed in conjunction with the MGA and the member. AOIs are based on the AMP and show number of livestock to be grazed, season of use, responsibilities for improvement construction or maintenance, and pasture rotation schedules.

Comment: What happens when either the FS or the MGA disagree on the AOI and will not approve it? MGA has been told by the FS that the final AOI approval lies with the FS and it really doesn't make much difference whether MGA approves or not. The FS is using the AOI as a second permit system to circumvent permits that MGA issues to its members.
RESPONSE: This comment is outside the scope of the North Billings Project.

- On-the-ground implementation of the AOI is the MGA's and the permittees' responsibility. Checks by the Forest Service and/or the MGA conducted throughout and following the grazing season, including discussions with the permittee, will be used to evaluate compliance with the AOI and AMP.

Comment: MGA does not have permittees, it has members. The FS should refer to MGA members as members, not permittees.

RESPONSE: See Response to Comment C-3.28.

C-3.36 – In the SDEIS, Summary of the SDEIS, Effectiveness (Long-Term Trend) Monitoring, page xxi, it states:

- Effectiveness monitoring is long-term monitoring that focuses on determining whether management is successful at maintaining existing desired conditions or is moving rangeland resources towards desired conditions. Determining trend toward or away from allotment objectives allows rangeland managers to accurately determine the relative success of the management system and to adjust management to achieve the accomplishment of objectives.

Comment: As stated in Comment #32, in Holecheck, Jerry L., Rex Pieper, and Carlton H. Herbel. 1989. Considerations Concerning Stocking Rate. *In:* Range Management Principles and Practices. pp. 173-209. Prentice Hall, NJ., Chapter 7, Range Inventory and Monitoring, p. 157, the following definition of monitoring is given:

- **Monitoring**, on the other hand, is an evaluation process usually conducted to determine the response to some management program. Hence monitoring is usually conducted several times **over a fairly long time span**. One might, for example, develop a monitoring scheme to evaluate a particular grazing system or to determine the efficacy of an herbicide treatement.

The emphasis here is the **"over a fairly long time span," usually ten years of longer.** And monitoring plans are usually developed to evaluate to see if objectives are being met.
As outlined in Table S.7 -the general frequency of monitoring is every 3 or 5 years, or 3 to 5 year timeframe. The FS will try and make adjustments using this short term monitoring, which is wrong. MGA requests the FS use only long term monitoring in making any decisions about reductions or adjustments.
RESPONSE: See Response to Comments C-3.2, C-3.15, C-3.24, and C-3.135.

C-3.37 – In the SDEIS, Summary of the SDEIS, Trigger Points, page xxii, it states:

- The value of monitoring under an adaptive management approach is that it reveals how management is performing relative to desired conditions. A natural extension of this process is to ask, "At what point do we consider the need to change management if monitoring indicates a lack of acceptable progress towards desired conditions?" The point at which monitoring indicates a possible need for change is called a trigger point.

Comment: The FS's use of "Trigger Points" further points to the use of the FS's effectiveness (Long-Term Trend) monitoring (3-5 years) to make adjustments and reductions. The FS has also further defined what "moving towards meeting objectives' means. The trouble with what the FS is proposing is that an allotment could meet 3 out of the 4 monitored objectives, but still face a reduction or adjustment for not having moved at a fast enough pace to meet "moving towards meeting objectives."

Long Term Monitoring should be used to track trend, which over a fairly long span of time, will dictate whether an adjustment or reduction is needed. After long term monitoring has been achieved, then look at see if changes are needed.
RESPONSE: See Response to Comments C-3.2, C-3.15, C-3.24, and C-3.135.

C-3.38 – In the SDEIS, Summary of the SDEIS, Summary Comparison of Alternatives, page xxii, it states how the alternatives respond to the purpose and need.

Comment: The NBSDEIS lists five (5) Alternatives. Listed below is a summary of each Alternative and if each one is a viable alternative.

> **General Statement:** In the cover letter that accompanies the SDEIS, Ranger Jablonski states:
>
> - The Medora Ranger District (MGA), DPG proposes to use **an adaptive management approach** to continue to permit livestock grazing on the allotments."

In essence what this means is that if the alternative doesn't contain the phrase "adaptive management" in it. it will not be selected.
RESPONSE: See Response to Comment C-3.5.

Alternative 1 – Called the "no action" alternative, or "no grazing." On page 40 of the SDEIS, it states in Alternative 1:

- The cessation of grazing in the project area may result in increases in plant community health in the short term, but eventually these communities would likely decline due to litter build up and the presence of invasive grasses. As the vigor of any herbaceous plant community decreases, so does its ability to effectively sequester carbon.

Alternative 1 will not be implemented because the 2006 ROD already declared livestock grazing would take place on the grasslands, leaving the **"no grazing" alternative as not viable**. It is only included because it is required. Additionally it is not an "Adaptive Management" alternative and will not be selected.

Alternative 2 – Current Management - maintains the status quo. It maintains current grazing management on each allotment. Authorized Use is set at Preference. On page 101 of SDEIS it states:

- There are no changes in infrastructure, grazing rotations, Authorized Use levels, etc. Grazing distribution and use patterns would remain the same. As there are no additional management actions proposed, resource problems resulting from the intensity, timing, or duration of livestock use would be maintained.

With the inability to change anything, the FS states it is impossible to meet the objectives of the DPG Plan. If this is true, then Alternative 2 is not viable because the FS Decision Maker, the District Ranger, would never select an alternative that doesn't achieve objectives. It also is not an "Adaptive Management" alternative and will not be selected.
RESPONSE: Alternatives 3, 3A and 4 are called the "Action Alternatives"because they would result in changes from current management, while still allowing livestock grazing.

- **Alternative 3 and 3A–** These two alternatives are the same alternative. The only difference is in the cost of improvements.

Alternative 3 – Proposed Action – which continues general management but incorporates some changes and "adaptive management to address site specific concerns. This alternative uses a variety of different management actions – both structural and non-structural – to move impacted resources towards desired conditions. *There are no initial reductions in Authorized Use under this alternative*. Authorized Use is the same as that identified under Alternative 2.

Alt. 3 does have "Adaptive Management" and could be selected.

Alternative 3A – responds to MGA's comments on the DEIS. It is Alternative 3 revised to include MGA comments which are mostly range improvement comments. The only difference between Alt. 3 and Alt. 3A is cost.

Alt. 3A does have "Adaptive Management" and could be selected, although it is like selecting Alt. 3.

Alternative 4 – Preferred Alternative – which modifies the proposed action to further address resource concerns and incorporates adaptive management options. This alternative makes reductions for cow size and implements an initial carrying capacity reduction all at the same time. It also utilizes a 3-year average actual use to as a way to make reductions look better than they really are.

Based on what the Summary of the SDEIS states, Alternative 4 will be the alternative that is selected in the DN. Further evidence of this is shown in the footnote below Table S.8 on page xxiii. It states:

- If under Alternatives 3 or 3A monitoring reveals that more aggressive measures are required, being able to implement those measures and see significant results within the 10- to 15-year timeframe associated with this project becomes questionable.

The Decision Maker is not going to choose alternatives where he cannot "see significant results within the 1 to 15 year timeframe.
RESPONSE: The SDEIS displays the expected effects of implementing the various alternatives across the North Billings project area in Chapter 3 Part 1 by resource (Volume I, pages 73 - 243) as well as by allotment in Chapter 3 Part 2 (Volume II). The decision maker will evaluate the effects analysis provided by the SDEIS along with all comments made by the public in order to make a decision.

C-3.39 – In the SDEIS, Summary of the SDEIS, Table S.10 - Comparison of summer Authorized Use by Alternative, page xxix, it states:

- For comparison purposes in the table below the AMs authorized under Alternatives 2, 3, and 3A were converted to AUMs by multiplying the Authorized Use AM number (Preference) by 1.15 (see Grasslands Plan, Appendix I). This assumes that all of the animal units are larger cows within the range of 1,100 to1,300 pounds with an average of 1,200 pounds to get a conversion factor of 1.15 (the conversion factor is explained in detail in the Range section of Chapter 3). In some cases this will likely result in an over or under estimation, but, again, this is done for comparison purposes.

Comment: Even though the FS says the conversion was done for comparison purposes, what the FS actually has done with this conversion is adjust all reductions in Alternative 4 for cow size. The FS could have made the assumption an AM was equal to a 1000 lb. cow AUM. But since the FS wants to adjust everyone for cow size they multiplied the AM's by 1.15.

The FS states that the adjustment for cow size in some cases will likely result in an over or under estimation, but, again, this is done for comparison purposes. The adjustment for cow size is not based on any actual data obtained from the North Billings Project. It is an assumption made by the FS that all cows on the DPG's are larger than they were in previous years. The FS doesn't even know if they have to adjust for cow size based on their data. The FS is just adjusting for cow size.

The FS should not be adjusting for cow size until they define when a cow should be weighed, and show that an adjustment for cow size is really needed.
RESPONSE: The table the commentor is referring to is only adjusted for comparison purposes in order to display the effects of summer Authorized Use by alternative to the public, and the Forest Service explains assumptions made in order to create the table.

However, the Forest Service needs to clarify that the SDEIS defines an animal month (AM) as "A month's tenure upon the rangeland by one animal. Must specify kind and class of animal. Note: This term is not synonymous with animal unit month (AUM)." (Volume III Glossary, page 2). The commentor stated in its DEIS comments that "MGA experience shows that livestock may be about 300 pounds larger than they were in the mid to late 1930s when stocking rates were originally set" (Response to Comments for the Draft Environmental Impact Statement, K-79). The MGA did not supply any data or literature citations to support this claim, however the Forest Service has several citations, for example, Carter, JG. 2008, Hancock, A. 2006, Johnson 1947, Kansas State University 1994, Manske, L.L. 1998, Ringwall, K.A. and K.J. Helmuth 1998, and McMurry, B. 2009. The Forest Service used data from the NDSU Dickinson Research and Extension Centers CHAPs program along with published literature. The Grasslands Plan (page 1-19, #6) states in a guideline, "When allotment management plans are revised, adjust stocking levels to account for the variations in liveweight of livestock if needed to meet desired vegetative conditions." Additionally, since the 2006 Livestock Grazing Record of Decision stated in the Demonstration Project that Scientific Review Team (SRT) recommendations will be incorporated into and implemented through the Final ROD and the livestock grazing AMP planning process, a discussion of cow size was held at the January 2007

MGA board meeting to address the SRT's recommendation to "…redefine the Animal Unit to reflect current cow size…" (2005).

Data collected through the 1990's and recent years by researchers show the average cow size and the average weaning weights of calves have increased since the 1940's. Through the 1990's Ringwall and Helmuth (1998) obtained data between 1993 and 1997 which indicated that the average weight of a cow nursing a calf was approximately 1,231 pounds while the average weaning weight of calves was 557 pounds, however, they stated that this data may not apply uniformly across units. In the CHAPs report (2000), the benchmarks show that 66,878 cows exposed to bulls and processed during 2000-2004 indicated that the average weaning weight of calves was 567 pounds and the average cow weight was 1,407 pounds. In review of the information provided in 1945 by Johnson (1947) and the CHAPS (2000) information, the average weaning weights of calves has increased by 167 to 192 pounds, and the average cow weight has increased by 557 pounds. McMurry (2009) reported, in his review of data, that the estimated mature cow live weight in 1975 was 1,047 pounds and in 2005 the average weight was around 1,369 pounds, a difference of 322 pounds. The Forest Service believes local research and data from NDSU, other universities, and the National Research Council on nutrient requirements of beef cattle shows a need to adjust for current livestock weights especially when existing conditions are not meeting or moving towards Grasslands Plan goals and objectives.

The average weight of individual herds should be based on the type of livestock (yearlings or cow/calf pairs) and the type of permit issued by the grazing association. If the individual has an inventory permit and winter grazes on NFS lands, then the average weight of the herd should be averaged between May 1 through February 28 (summer & winter grazing months). In the case of turn in permits the average should be based on the numbers of months summer grazed on NFS lands.

C-3.40 – In the SDEIS, Summary of the SDEIS, Table S.11 – Summary of initial actions by alternative, page xxxi, it states:

- Total Authorized Use as 29,125 AMs for Alt, 2, 3, and 3A; and 28,340 AUMs for Alt 4. The 28, 340 AUMs for Alternative 4 comes from Table 3.5 which provides a comparison of Authorized Use by Alternative to Preference, although Table 3.5 Alt. 4 AUMS is stated at 28, 305.

Comment: There is a reason why the FS compares AM's under Alternatives 2, 3, and 3A to AUMs under Alternative 4. It makes the reductions look smaller compared to what they really are. The FS states in this document, i.e. Table 3.5, page 98 that they had to convert preference from AM's to AUMs for comparison purposes only. This should be done in Table S.11 as well.
RESPONSE: Table 3.5 in the SDEIS is comparing Authorized Use by alternative to Preference, while Table S.11 is summarizing, not comparing, initial actions by alternative.

In Table S.11 the value labels do not need to be the same as the table isn't comparing anything.

Also, the commentor's noted difference between the two tables' reported total values for Alternative 4 will be corrected in the Errata.

C-3.41 – In the SDEIS, Chapter 1, Overview, page 2, it states:

- The Forest Service proposes to continue to permit livestock grazing on these allotments through a program of actions that maintains, and/or moves resource conditions towards meeting the Grasslands Plan objectives and desired on-the ground conditions.

Comment: In Comment #2 above, it states:

- Based on analysis, I will decide through alternative selection, whether or not to continue livestock grazing on all or portions of the 43 allotments and if so, under what terms and conditions so as to meet or move towards Grasslands Plan goals and objectives in a timely manner.

It seems the "Purpose" of the project is a decision between continuing grazing and eliminating it. This decision has already been made in the 2006 Livestock Grazing Record of Decision (ROD) for the DPG.

As stated on Page 6, Chapter 1 of the SDEIS:

- The livestock-grazing part of the revised plan was adopted by two records of decision: Powell 2002 and Kimbell 2006. Those Records of Decision established livestock grazing as an allowable use, and provided guidance on how, when, and where such grazing could occur.

RESPONSE: See Response to Comment C-3.2.

C-3.42 – In the SDEIS, Chapter 1, Historic and Legal Framework, pp. 5-6, it states:

- The regulations at 36 CFR 213.1(b) state that "The National Grasslands shall be a part of the National Forest system and permanently held by the Department of Agriculture for administration under the provisions and purposes of title III of the Bankhead-Jones Farm Tenant Act." **Section 213.1(d) states "the resources shall be managed so as to maintain and improve soil and vegetative cover and to demonstrate sound and practical principles of land use for the areas in which they are located".** Section 213.4 states that any prior rules and regulations issued for land use utilization projects are superseded to all projects administered by the Forest Service.

Comment: Section 213.1(d) states:

- (d) **In the administration of the National Grasslands** the resources shall be managed so as to maintain and improve soil and vegetative cover, and to demonstrate sound and practical principles of land use for the areas in which they are located. The Chief of the Forest Service shall, **to the extent such action is feasible provide that policies for management of the Federally-owned lands exert a favorable influence for securing sound land conservation practices on associated private lands**.

The FS left out a very important section, Section 213.3(a), it states:

- (a) The rules and regulations applicable to the national forests as set forth in **title 36, Code of Federal Regulations**, or as hereafter amended, supplemented, or promulgated, are hereby adopted as the rules and regulations to govern the exercise of reservations in conveyances to the United States and to prevent trespasses on and otherwise regulate the protection, use, occupancy, and **administration of the National Grasslands and all other lands administered by the Forest Service under the provisions of title III of the Bankhead Jones Farm Tenant Act <u>insofar as is practical and consistent with said act</u>**; *Provided*, That Forest Service officers may continue under delegated authority to acquire lands, to make exchanges, to grant easements and enter into leases, permits, agreements, contracts and memoranda of understanding involving such lands under such terms and conditions and for such consideration, fees or rentals as authorized by title III of the said Act.

Section 213.4 states:

- Except as provided in §213.3, the rules and regulations heretofore issued for the land utilization projects are hereby superseded as to all such projects administered by the Forest Service, **but not as to such project lands administered by other agencies**.

The FS conveniently left out some of the most important parts of Section 213 and 214. The FS left out that the National Grasslands are still under **the provisions of title III of the Bankhead-Jones Farm Tenant Act. The FS is wrong in its interpretation of** Section 213.4:

- Section 213.4 states that any prior rules and regulations issued for land use utilization projects are superseded to all projects administered by the Forest Service.

Section 213.4 states, "Except as provided in §213.3", which means National Grasslands are still under **the provisions of title III of the Bankhead-Jones Farm Tenant Act**.
RESPONSE: The SDEIS (Volume I Chapter 1, last two paragraphs on page 5 and first paragraph on page 6) does reference that management of the grasslands is governed under the provisions of the Bankhead-Jones Farm Tenant Act, along with several other acts and regulations.

C-3.43 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 6, it states:

- ....provide for multiple use and sustained yield of the products and services obtained there from in accordance with the **Multiple-Use Sustained-Yield Act** of 1960, and in particular include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness.ll (Section 6(e), National Forest Management Act, P.L. 94-588).

Comment: The Multiple Use Sustained Yield Act of 1960 does not apply to the National Grasslands per the OGC, Attorney in Charge, Morris Hankins memorandum: "It is my opinion that the Multiple-Use Sustained-Yield Act of 1960 does not apply to National Grasslands because said Act refers to National Forests."
RESPONSE: See Response to Comment C-3.42.

In 1976 the National Forest Management Act (NFMA) was passed, amending the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1601-1610). Sec. 11 of the amended Act (16 U.S.C. 1609), titled "National Forest System Defined," includes as part of the National Forest System "lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010-1012)." Sec. 6(e) of NFMA states in part:

"In developing, maintaining, and revising plans for units of the National Forest System pursuant to this section, the Secretary shall assure that such plans –
(1) provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the Multiple-Use Sustained-Yield Act of 1960, and, in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness" (16 U.S.C. 1604).

Thus, lands acquired through the BJFTA by the Secretary of Agriculture are considered a part of the National Forest System, and as such are to be managed for multiple uses under NFMA, including range use in coordination with other multiple uses. They are still subject to the "land conservation and land utilization" requirements of the BJFTA. As noted in the Addendum to the NGP FEIS: "Until there is a conflict between the requirements of the BJFTA and one or more of [the other laws applicable to the National Forest System], the Forest Service is obliged to manage the national grasslands in conformance with all of the applicable laws. To date, no such conflict has manifested itself" (NGP FEIS Addendum, page 136). (see Appendix A of this appeal decision for the complete applicable text from the Act.)

C-3.44 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 6, it states:

- Powell (2002) also established the Scientific Review Team (SRT), a panel of independent scientists that conducted 14 public meetings, starting in February 2003. *The SRT reviewed the scientific basis for. and the practical application of. the new Grasslands Plan.*

Comment: The FS states the SRT reviewed the scientific basis for, and the practical application of, the new Grasslands Plan. According to the final SRT report, the SRT did not provide any documentation of the science they found for the basis for the new Grasslands Plan. The SRT provided their own scientific opinion about the new Grasslands Plan, but did not offer any "science" of their own to back up their opinions. The SRT Report is an opinion based report, with very little to no document science as a foundation. This has been confirmed in discussions with several of the SRT members.
RESPONSE: The results and science used in the SRT process is beyond the scope of this project. The Forest Service, however, disagrees with the comment, because the primary purpose of the SRT was to address the concern that the Final Environmental Impact Statement (FEIS) for the DPG LRMP lacked good scientific analysis, specifically in regard to the livestock and wildlife issues. The SRT completed what was asked of them and additionally provided recommendations on each issue that had arisen in their review (Report of the Scientific Review Team 2005, pages 32 - 35).

C-3.45 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 6, it states:

- The SRT's final report, presented in May 2005, concluded that the Grasslands Plan could be implemented, but that it was impossible to determine whether projected stocking rates would attain the plan's goals and objectives.

Comment: The statement above means that in the SRT's opinion, the Grasslands Plan could be implemented. However, they offered no science to back up their opinion. The SRT also offered their opinion saying it was that it was impossible to determine whether projected stocking rates would attain the plan's goals and objectives. There was not enough information provided by the FS for them to conclude otherwise.
RESPONSE: See Response to Comment 3.44.

C-3.46 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 6, it states:

- The 2006 Record of Decision (ROD) established the Demonstration Project: The purpose of the demonstration project is to: 1) develop and implement integrated AMPs [Allotment Management Plan] collaboratively with the respective grazing associations that share in the management of grazing on the National Grasslands; 2) to determine if Grasslands Plan Goals and Objectives are achievable or need modification; and 3) monitor progress towards meeting resource objectives. One key goal of the Demonstration Project is to maintain or improve current on-the ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species (Kimbell 2006, pp 8, 9).

Comment: There is no evidence in the SDEIS that the FS actually followed the 2006 Record of Decision (ROD) established the Demonstration Project. The FS did not work collaboratively with the grazing association. When the Association did not agree with the FS, the FS just moved ahead with their timeline and agenda. This is evidenced in the Preferred Alternative.

Comments #7 and #22 above outline pieces of the Demonstration Project that the FS has not followed.
RESPONSE: See Response to Comments C-3.7a & b and C-3.22.

C-3.47 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 7, it states:

- The MGA is the Forest Service's permittee; however, in this document the term permittee is generally used in reference to the person(s) associated with the 43 allotments in this project.

Comment: MGA issued grazing permits to its members. The FS should call them members also.
RESPONSE: See Response to Comment C-3.28.

C-3.48 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 7, it states:

- AMPs are implemented through Annual Operating Instructions (AOIs). Annual Operating Instructions are developed each year by the individual permittees and the grazing association.

Comment: The second sentence should read Annual Operating Instructions are developed each year by the member and the grazing association.
RESPONSE: See Response to Comment C-3.28.

C-3.49 – In the SDEIS, Chapter 1, Historic and Legal Framework, page 7, it states:

- The AOIs are then reviewed, modified if necessary, and approved by the Forest Service. These provisions are intended to react to resource issues identified during field monitoring, as well as to respond to yearly and seasonal fluctuations in weather or range conditions.

Comment: The FS is using year to year field monitoring to make adjustments and reductions, when they should be used long term trend. Using yearly field monitoring, such as VOR transect readings does not lend itself to making accurate decisions on trend for implementing reductions. MGA wants long term monitoring used to look at any adjustments in stocking rate.
RESPONSE: See Response to Comments C-3.2 and C-3.24.

C-3.50 – In the SDEIS, Chapter 1, Grasslands Plan Direction Specific to Project Area, page 8, states in Table 1.2 – Management area acreage in the project area that the Elkhorn Ranch- No MA currently assigned, 806 ac., is a management area in the Grasslands Plan.

Comment: The Elkhorn Ranch cannot be found in the Grassland Plan as a management area. Public law does address the Elkhorn Ranch as follows:

1. In the Interior Appropriations Bill for 2008, it states after 2009:

- The Federal land grazing use of the Elkhorn Ranch shall be managed through the grazing agreement between the Medora Grazing Association and the Forest Service. The Animal Unit Months (AUMs) for both Federal and private lands encompassing the Elkhorn Ranch shall become part of the grazing agreement held by Medora Grazing Association to be reallocated to its members in accordance with their rules in effect as of the enactment of this Act.

The Appropriations Bill has not be repealed or changed since 2008. It is therefore public law that the Elkhorn Ranch will become part of the Medora Grazing Agreement.

2. The Interior Appropriations Bill for 2008 further states:

- In fiscal year 2008 and thereafter, the Forest Service shall not change the eligibility requirements for base property, and livestock ownership as they relate to leasing of base property and shared livestock agreements for grazing permits on the Dakota Prairie Grasslands that were in effect as of July 18, 2005.

This means the Elkhorn Ranch will be managed under the MGA Grazing Agreement that was in effect as of July 18, 2005; not the current 2009 Grazing Agreement. So when determining

1. eligibility requirements for base property, and
2. livestock ownership as they relate to,
3. leasing of base property and shared livestock agreements for grazing permits MGA has to use the Grazing Agreement that was in effect on July 18, 2005.
4. The Forest Service has indicated in the North Billings SDEIS, that they want to create a 21,560 ac. Forage reserve (grassbank) out of the Elkhorns Ranch. The FS cannot do this without changing public law. To state they are going to do this is wrong.

RESPONSE: The 806 acres referenced in Table 1.2 are included in the project area, and are proposed to be managed in accordance with adjacent Grasslands Plan management areas (see SDEIS Volume I Chapter 3, Reasonably Foreseeable Actions – Elkhorn Ranchlands page 106). The commentor's reference to the 21,560 acre forage reserve is beyond the scope of the North Billings project analysis as these acres are included in allotments outside of the project area.

C-3.51 – In the SDEIS, Chapter 1, Purpose and Need, page 11, it states:

- Some resources are not at Desired Conditions as identified by the Grasslands Plan. There is a need to meet or move toward Desired Conditions for those affected resources in accordance with **Grasslands Plan direction (pp. 1-2, 1-3)**[4] while allowing grazing on suitable lands and supporting local families and communities.

- [4] A requirement of the Demonstration Project is to "determine if Plan Goals and Objectives are achievable or need modification, and monitor progress towards meeting the resource objectives." The analysis completed for North Billings determined that the Plan goals and objectives are achievable; therefore, modification to the Plan is not needed and has not been incorporated. However, monitoring progress towards meeting the resource objectives is an integral component of the proposed action.

Comment: In the Grasslands Plan – pp. 1-2, 1-3 state the following:

- Goal 1: Ensure Sustainable Ecosystems

  Goal 1.a: Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial water uses.

  - **Objectives**:

    2. Move at least 80 percent of riparian areas and woody draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability.
    3. Meet or move toward Proper Functioning Condition (PFC) on at least 80% of perennial streams.

- ***Goal l.b: Provide ecological conditions to sustain viable populations of native and desired non-native species and to achieve objectives for Management Indicator Species (MIS).***

- ***Goal l.c: Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from disturbance processes, both natural and human-controlled.***

  - **Objectives**:

    1. Within 10 years, implement management practices, including *prescribed fire.* that will move landscapes toward **desired vegetation composition and structure** as described in Geographic Area direction.
    2. Over the next 15 years, retain those *range structures* (fences and water developments) that achieve resource management goals and objectives (i.e., wildlife habitat, botanical, range management, visual quality, and recreation).
    3. Within 15 years, move forested landscapes toward desired conditions described in Geographic Area direction.

4. Within 5 years, develop and maintain **cooperative noxious weeds** and invasive species management plans in consultation with appropriate partners and agencies.
5. Within 3 years, develop and implement a certified **noxious weed-free** forage program in consultation with appropriate state agencies.
6. Within 10 years, limit further expansion of areas affected by **noxious weeds.**

The statement "those affected resources in accordance with Grasslands Plan direction (pp. 1-2, 1-3)[4]" refers to the following: Riparian and Woody Draws, desired vegetation composition and structure, range structures, forested landscapes, and noxious and invasive weeds. The four main resource areas: riparian, woody draws, vegetation composition and structure will remain the main focus of the SDEIS. The rest of the statement above that will get lost in the SDEIS is:

- while allowing grazing on suitable lands and supporting local families and communities.

The FS foot note #4 refers to the Demonstration Project. The FS takes parts 2 & 3 of the Demonstration Project Purpose on page 8 and makes the following conclusion:

- The analysis completed for North Billings determined that the Plan goals and objectives *are achievable;* therefore, *modification to the Plan is not needed* and has not been incorporated. However, monitoring progress towards meeting the resource objectives is an integral component of the proposed action.

All the information provided in this SDEIS points to the fact that the analysis completed for North Billings determined that the Plan goals and objectives *are **not** achievable* and still have grazing on suitable lands and supporting local families and communities. Even implementing Alternative 4 does not achieve objectives within in 10-15 years, without additional "adaptive management options" being implemented, which means additional reductions. The FS would indicate that those additional reductions would result in another 40-70% reduction, which does not achieve one of the goals in the Demonstration Project on page 9, which is:

- One key goal of the Demonstration Project is to maintain or improve current on-the-ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species.

The FS's quest to achieve their goals and objectives in the Grasslands Plan and have a sustainable grazing program and supporting local families and communities is not going to happen. The analysis completed for North Billings shows quite the opposite that the Plan goals and objectives *are not achievable* and therefore ***modification to the Plan is needed***.

The FS statement on page 12 also indicates there is a need for modification of the plan:

- The project-specific need for action is created by the disparity between what is present (existing condition) and what is wanted (desired condition) of a resource.

The FS created this disparity by using four years of drought on which to base their data.

Also, see Comment #39.
RESPONSE: The SDEIS identified six key issues which included economics; therefore, allowing grazing on suitable lands and supporting local families and communities has not been lost in this analysis (SDEIS Volume I Chapter 1, page 25).

Grasslands Plan goals and objectives are achievable as evidenced by those allotments that are meeting identified objectives as well as those allotments that demonstrate some percentage of desired condition. See also capability discussions for each resource (SDEIS Volume I Chapter 3, pages 120, 148, 176, and 177.

See also Response to Comments C-1.3, C-1.7 and C-1.8.

C-3.52 – In the SDEIS, Chapter 1, Purpose and Need, pp. 13-14, Table 1.3 shows the Grasslands Plan for desired conditions, existing conditions and need for action.

Comment: Listed below is a breakdown by resource objective of what Table 1.3 shows for meeting objectives:

There are 43 total allotments in the North Billings Project Area

1. **Riparian** = 56.4 mi. in the project area

   - 19 of the 43 total allotments have no riparian (44%)
   - 24 of the 43 allotments have varying amounts for riparian (56%)

Of the 24 allotments that have riparian, the following is a breakdown of PFC:

- PFC =51%= 28.6 mi.
- FAR-U = 4% = 2.5 mi.

  31.1 mi.
- FAR-NA = 6% = 3.3 mi.
- FAR-D = 5% = 2.9 mi.
- NF = 34% mi.= 19.1 mi.
- Total = 25.3 mi.

The FS read the PFC transects in 2004 and 2006. Both are drought years, with 2004 being an severe drought and 2006 a severe moderate drought year.

Mikes Creek and Magpie Creek have 12.37 miles (65%) of the total19.1 miles rated in NF. The reason these two drainages are rated in NF is because they have roads that travel the length of the creek. These roads are used by the oil and gas industry as well as recreationists and local traffic. Obviously these drainages are impacted by more than just livestock. The FS does not take this into consideration when determining the NF rating. The FS's solution to change the NF rating is to reduce livestock. Reducing livestock numbers will not fix these drainages.

To meet riparian objectives, 80% or 45.13 miles would need to be at PFC or moving toward it, which means the MGA has to improve **14.03 miles of the 25.3 miles in FAR** NA, **FAR-D, and** NF. The good news is they have to meet or be moving towards desired conditions. However, the FS is requiring that those 14.03 miles move a condition class every 3 years. The FS is holding riparian objectives to a higher standard than is required by the Grasslands Plans.

Note: None of the Alternatives achieves 80% in PFC in 10 years.
RESPONSE: See Response to Comment C-1.10 C-1.17 and C-3.11. The SDEIS proposed several proven, cost effective management actions to improve riparian conditions not solely reducing livestock numbers (SDEIS Volume III, Appendix D).

2. **Woody Draws** = 275 woody draw areas which are not quantified.

5 of the 43 total allotments have no green ash woody draws (12%).

- 38 of the 43 allotments have varying amounts for woody draw (88%).

Of the 38 allotments that have woody draws, the following is a breakdown of woody draws in the Existing condition:

Of the 275 woody draws in the project area:

- Healthy= 51%= 140 woody draws
- At Risk= 42% = 115 woody draws
- Unhealthy= 7% = 20 woody draws

Note: 6 allotments meet woody draw objectives of 80% (14%)

To meet objectives 80%, **220** woody draws need to be meeting or moving towards healthy.

After 10 years, Alternative 3 and 4 show the following:

- Alternative 3 = 55% in healthy. Alt. 4 = 59% in healthy at the end of 10 years.

Note: None of the Alternatives achieves 80% in woody draws in 10 years.

RESPONSE: Analysis summarized in the SDEIS anticipates conditions will improve and move towards meeting the objectives described in the Grasslands Plan. The Plan does not state a requirement that 80 percent of the woody draws be at the desired condition, only moving towards it.

3. **Herbaceous Structure** = biologically capable soils = 54,375 acres (62% of project area)

Note: 1 allotment is hayed therefore- excluded from herbaceous structure

- 7 of the 42 total allotments meet all: high, mid and low structure (17%)
- 12 (totall9) allotments meet mid structure (45%)
- 2 (totalS) meet low structure (19%)
- 21 allotments meet none of the above structures (50%)

Of the 42 allotments (1 hayed therefore – excluded from herbaceous structure), the following is a breakdown of high structure:

Existing condition:

- High Structure = 5%
- Mid structure = 65%
- Low structure = 30%

DPG Plan objectives: High = 20-30%; Mid = 50-70%; Low= 10-20%

Note: None of the Alternatives achieves high structure in 10 – 15 years.
RESPONSE: Table 3.26 in the SDEIS (Volume I, Chapter 3 pages 181 & 182) indicates that 29 of the allotments would improve under Alternative 4, which means that those 29 allotments would be meeting or moving towards Grasslands Plan objectives. Additionally, Alternative 1 would likely exceed high structure objectives at the expense of low structure in a short time frame (see SDEIS Volume I Chapter 3, page 185).

4. **Seral Stages**

DPG Plan objectives: Late= 15-20%; Mid= 65-75%; Early= 10-15%

Existing Condition:

- Late Structure = 5%
- Mid structure = 72%

- Early structure= 7%

Note: None of the Alternatives achieves late seral in the 10 – 15 year planning period.

<u>However. and this is important:</u>

At the end of Alternatives 3, 3A and 4 (which are the adaptive management alternatives) the FS puts this statement:

- If monitoring reveals that initial actions are not resulting in the desired outcome, then additional adaptive management actions would be implemented. The SDEIS also does not address other causal factors and does not exclude for drought.

What this means is more reductions will be made until objectives are met. Long term monitoring should be used before considering any type of adjustment or reduction in stocking rate as a remedy to meet objectives.
RESPONSE: Other factors affecting plant composition were discussed under the cumulative effects section in the SDEIS (Volume I Chapter 3, pages 144 - 147) and the Botany specialist report (pages 76 and 78). See also Response to Comments C-1.3, C-3.15, and C-3.16.

C-3.53 – In the SDEIS, Chapter 1, Proposed Action (Alternative 3), page 15, it states:

- The Forest Service proposes to continue to permit livestock grazing on these allotments through a program of actions that maintains and/or moves resource conditions towards meeting the Grasslands Plan objectives and desired on-the ground conditions. Grazing management (program of actions) would be carried out so that it meets or moves impacted resources towards Grasslands Plan desired conditions. This would be achieved by implementing initial actions and through the application of adaptive management strategies if initial actions fail or can't be implemented. The proposed action also includes a monitoring plan and interim drought strategy which are described in detail in Chapter 2. It is designed to:
    - Provide adaptive management flexibility to meet changing conditions.
    - Contribute to the general economic and social vitality of the local area.
    - Meet direction contained in the demonstration project, including recommendations from the FS Final Response to the SRT Report.
    - Move impacted resources towards Grasslands Plan desired conditions.

Comment: In the SDEIS, Summary of the SDEIS, Purpose & Need, page iv, it states:

- The project specific need for action is created by the disparity between what is present (existing condition) and what is wanted (desired condition) of a resource.

Under the proposed action there is no mention of the above statement. As structured, the SDEIS obscures the planned reductions. The FS implies that the proposed action, which is Alternative

3, includes a monitoring plan and interim drought strategy which are described in detail in Chapter 2 and is designed to "Contribute to the general economic and social vitality of the local area." The FS cannot achieve this design criterion. Even though there are no initial reductions with the implementation of Alternative 3, the FS analysis shows the proposed action cannot achieve objectives without further reductions through "adaptive management."

Also, see Comment #6.
RESPONSE: In the SDEIS, the proposed action defines in general terms what is proposed in order to achieve the purpose and need; the proposed action and the purpose and need are two different elements. See also Response to Comments A-1, C-3.5 and C-3.6

C-3.54 – In the SDEIS, Chapter 1, Adaptive Management, page 15, it states:

- Adaptive management is defined as, "A system of management practices based on clearly identified intended outcomes and monitoring to determine if management actions are meeting those outcomes; and, if not, to facilitate management changes that will best ensure that those outcomes are met or re evaluated."

Comment: A system already exists to make adjustments in stocking rate by number of head, number of days, and season of use. These are done in the annual operating instructions (AOIs). Therefore they are not needed as adaptive management actions or in the tool box. Adjusting AUMs based on cow size is assuming that all ranchers' cattle have increased herd size and the FS has no data to support this issue. As explained in an earlier letter to the District Ranger, the FS is using sale weight without taking into account post-parturition weight typical of nursing mother cows in the summer or the fact that operators will use supplemental feed. MGA believes these adaptive management actions should be removed from the tool box.
RESPONSE: While it is true that the commentor's indicated tools have been implemented through AOIs historically, now is the time to analyze and disclose to the public the effects of multiple management tools and how those tools will move resources towards Grasslands Plan objectives. Once AMPs have been written, the AOI will document from year to year how that AMP has been implemented, and the Forest Service can monitor its effectiveness towards obtaining Grasslands Plan objectives.

C-3.55 – In the SDEIS, Chapter 1, Adaptive Management, page 15, it states:

- Adaptive management stems from the recognition that knowledge about natural resource systems is sometimes uncertain" (36 CFR 220.3).

Comment: The FS may have the wrong reference here since 36 C.F.R. 220.3 has to with Banks and Banking.
RESPONSE: The reference cited in the SDEIS is correct. It is the definition for adaptive management in the Code of Federal Regulations (CFRs).

C-3.56 – In the SDEIS, Chapter 1, Adaptive Management, page 16, it states:

- While it is impossible to predict all potential changes, or to plan for dealing with all uncertainty, implementing an adaptive management approach provides more flexibility in the management of the range and associated resources.

Comment: A properly developed adaptive management plan does provide flexibility. The SDEIS, however, seeks to avoid additional NEPA processes when making decisions that contribute to the general economic & social vitality of the local area. Adaptive management actions should address solutions to the management issues on the ground and how members can work with the FS without taking further reductions. Reductions may _reduce the size of the problem, they don't solve the problem especially when no effort has been undertaken to address other causal factors.

Also, see comment #26.
RESPONSE: Without adaptive management, an AMP would be written with a limited set of specific tools to utilize in order to address resource concerns. If it was discovered that resource concerns were not being addressed as expected, the whole AMP revision process would need to be repeated in order to change management. The Forest Service is trying to provide more flexibility up front, not as the commentor indicates by avoiding additional NEPA. The Forest Service still is required to stay within the scope of the decision document and its analysis. If adaptive management was to step outside of the scope of analysis within the document, a supplemental or new NEPA analysis and NEPA-based decision would be needed.

See also discussion on pages xix - xxi and pages 53 - 58 of the SDEIS (Volume I, Summary and Chapter 2) and Response to Comment C-3.24 .

C-3.57 – In the SDEIS, Chapter 1, Adaptive Management, page 16, it states:

- In other words, if some aspect of the planned management is shown by monitoring to be ineffective or cannot be implemented as planned, then a team composed of Forest Service specialists in consultation with the affected permittee and the Medora Grazing Association (MGA) director would make a recommendation to the district ranger.

Comment: See Comment #25.
RESPONSE: See Response to Comment C-3.25.

C-3.58 – In the SDEIS, Chapter 1, Scope of the Proposal, Temporal Scope, page 17, it states:

- The issuance of AMPs to reflect the selected alternative would not be subject to further NEPA documentation as long as the FEIS analysis and decision remain valid.

Comment: This statement may not be true. Other actions may trigger new NEPA processes even if the FEIS analysis and decision remain valid. Also, science exists today concerning

"biologically capable" that makes the FEIS analysis and decision invalid regardless of FS efforts to discount it.
RESPONSE: It is not necessary to initiate new NEPA if management changes are within the scope of documented effects. Adaptive management allows for flexibility since possible adjustments have already been analyzed, so long as monitoring indicates that the environmental effects do not exceed the bounds of those anticipated in the final decision.

For the purposes of this analysis, resource specialists relied upon the best available science for their respective resource area of concern. This is addressed under each "Methodology" section of Affected Environment and Environmental Consequences. The commentor's reference to the "biologically capable" science is premature. There indeed is a study being initiated to test "biologically capable"; however, the research is ongoing. See Response to Comment C-3.7b.

C-3.59 – In the SDEIS, Chapter 1, Scope of the Proposal, Administrative Scope, page 17, it states:

The proposed action is limited to the continuation of grazing activities on NFS lands. It includes initial management actions to address resource concerns, adaptive management actions, monitoring, and feedback.

Comment: The proposed action has one other feature worth mentioning. It does not have any initial reductions upon being implemented, unlike Alternative 4.
RESPONSE: Comment noted.

C-3.60 – In the SDEIS, Chapter I, Decision Framework, page 19, it states:

- The district ranger is the responsible official who will decide, through alternative selection, whether or not to continue livestock grazing on all or portions of the 43 allotments and, if so, under what terms and conditions so as to meet or move toward meeting Grasslands Plan objectives in a timely manner.

Comment: This is not in sync with the purpose and need statement on page 11 of the SDEIS.

Also, see Comment #2.
RESPONSE: See Response to Comments C-3.2 and C-3.9.

C-3.61 – In the SDEIS, Chapter I, Key Issues, Key Issue #3, Herbaceous Structure, page 23, it states:

- This indicator is intended to provide a quantitative estimate of how well an alternative would move herbaceous vegetation towards desired structure objectives. The potential trend of High structure was evaluated by comparing the level of Authorized Use relative to the initial estimated carrying capacity, as well as how livestock management could affect High structure.

Comment: MGA disagrees with the FS on this point. From the analysis in the SDEIS it shows the potential trend of high structure was evaluated by comparing the level of Authorized Use relative to the initial estimated carrying capacity, and adjusting for cow size (even though the FS states it was for comparison purposes only) as well as how livestock management could affect High structure.
RESPONSE: Since the amount of forage (potential cover) removed changes with the size of livestock, Authorized Use needs to be considered in analyzing how livestock grazing may affect herbaceous structure. Refer also to Comment C-3.29

C-3.62 – In the SDEIS, Chapter I, Key Issues, Key Issue #4, Vegetative Seral Stages, page 24, it states:

- As intensity and frequency of grazing increase in a native grass community there is generally a shift towards an earlier seral stage. A reduction in intensity and frequency of grazing tends to facilitate the development of late seral stages, but can be complicated by trends of invasive species.

Comment: The generalized statements by the FS about native grass communities and grazing show the lack of knowledge by the author of grazing systems. Intensity and frequency of grazing does not generally lead to a shift towards early seral stage. If this were true then in the analysis conducted by the FS on the McKenzie County Ranger District Pasture 2, 10 & 11 project, one allotment would not have been able to obtain 62% late seral with the approximately the same overall grazing program as the North Billings project. Literature supports the fact that native grass communities can have abundant late seral with increase intensity and frequency of grazing.

A reduction in intensity and frequency of grazing doesn't always lead to facilitate the development of late seral stages. It can just reduce the size of the problem, unless the reduction is followed by improved management and/or water development, neither of which the FS is supporting in this SDEIS. By focusing only on grazing, the SDEIS omits other relevant factors.

RESPONSE: The SDEIS does not focus solely on livestock grazing reductions as evidenced by all of the grazing management tools included in Appendix D (SDEIS Volume III). Shifts in seral stage can be accomplished by affecting the disturbance regime, whether decreasing or increasing disturbances on a given piece of ground. See also Response to Comment C-3.52.

C-3.63 – In the SDEIS, Chapter I, Key Issues, Key Issue #5, Economics, page 25, it states:

- **Indicator:** The Forest Service indicator is jobs and income generated in the agricultural community. The indicators associated with the NDSU study are cumulative net margins and debt repayment capability.

Comment: The FS is using this as an indicator that will show virtually no impact to the region or state to be able to say their decision has no economic impact. However, if the FS were to look at the economics and social viability of the local community and members themselves they

would come up with a much different indicator and outcome. This approach would not support the answer the FS is seeking, and that is the adverse impacts of more reductions.

The FS will justify what they are doing by saying what they said about the Shadehill Recreation Project on the Grand River National Grasslands. There is no economic impact because the economic analysis conducted on the Pastures 1-5 Project said there wasn't. MGA is sure this economic analysis will show the same thing for the North Billings Project.

MGA wants the economic analysis for the North Billings Project to be directed to the economics and social viability of the local community and members themselves. This is more consistent with the 2006 ROD.

Also, see Comment #17.
RESPONSE:See Response to Comment C-3.17.

C-3.64 – In the SDEIS, Chapter I, Threatened & Endangered Plant Species, page 29, Sensitive Plant Species, pages 29-30, Threatened & Endangered Wildlife Species, page 32, Sensitive Species, Management Indicator Species (MIS), Raptors, page 32-35, it states:

- The Forest Service botanist has concluded that there are no federally listed threatened or endangered (T&E) plant species, and there is no designated critical habitat for T&E plant species, on the Little Missouri National Grassland (Project Record, Specialist Reports and Notes, Botany Report). There is no plant species proposed for federal listing and there is no proposed critical habitat associated with the proposed project. Therefore, this issue was dropped from further consideration in this analysis.

- The six sensitive plant populations in the project area were not affected by livestock grazing and in one case benefited as the largest plants were found in cattle hoof prints. The Forest Service botanist (Project Record, Specialist Reports and Notes, Botany Report) has determined the proposed project would not affect the viability of existing sensitive plant populations. For these reasons, sensitive plants were dropped from further consideration in this analysis.

- There is no designated critical wildlife habitat and there is no wildlife species proposed for federal listing; further, there is no proposed critical habitat associated with the proposed project. Therefore, this issue was dropped from further consideration in this analysis.

- None of the alternatives would threaten the viability of any sensitive species in the project area. See the Wildlife Report (Project Record, Specialist Reports and Notes) for further discussion. For the above reasons, the sensitive species identified were dropped from further consideration in this analysis.

- There are three MIS species for the LMNG: greater sage grouse, black-tailed prairie dogs (prairie dogs), and sharp-tailed grouse. Sharp-tailed grouse will be addressed in

Chapter 3. For the above reasons, greater sage grouse and prairie dogs were dropped from further consideration in this analysis.

- For the above reasons, Raptors was dropped from further consideration in this analysis.

Comment: The project will have no effect on everything listed above except "sharp-tailed grouse" which is a MIS discussed in Chapter 3. All the other species that the FS usually associates with the sharp-tailed grouse, i.e. Baird's Sparrow, Loggerhead shrike, Sprague's pipit, Dakota skipper, Otto skipper and Regal fritillary are not affected by the project. So the FS is managing for a single species at this point, not an MIS and it is difficult to understand the conclusion of no impact on these other species but adverse impact on sharp-tailed grouse.
RESPONSE: The commentor takes out of context the discussion on TES, MIS, and Raptors, especially in light of Table 1.4 (SDEIS Volume I Chapter 1, page 32). For many of the sensitive species the determination of effects differs by Alternative. See the Effects Call column in Table 1.4. It is true, that it is projected that a loss of viability resulting in a trend towards federal listing is not expected for any species due to this project. However, for some sensitive species habitat would improve under some alternatives (see SDEIS Volume I Chapter 1, bottom of page 34) and could contribute to species recovery. See Appendix D of the Wildlife specialist report for further spatial and temporal details related to the determinations given for each sensitive species. The same logic holds true for other species such as raptors. Since there are no known T&E species, there are no expected effects to those species. The intent of the regulations (36 CFR 219.19 and 219.20) is that population trends of the selected species (i.e. MIS) occurring on or in the vicinity of NFS lands would be closely tied to habitat conditions resulting from authorized lands uses on those same NFS lands and that a suite of species would react to the lands uses in a manner similar to the response of the MIS. The regulations do not imply that the population dynamics of management indicator species, as influenced by land uses, directly represent the population dynamics of other species (NGP FEIS Appendix B, pages 34 - 35). Also, the commentor misrepresents the effects analysis for the TE&S species.

C-3.65 – In the SDEIS, Chapter 1, Soil Capability& Soil Productivity, pages 37 - 39, it states:

- The 17 Indicators of Rangeland Health (Pellantet al. 2006) assessment was conducted on 30 of the allotments.

- Of the indicators, 9 apply to soil stability and 11 apply to hydrologic function of the soils; 8 of these indicators overlap. These indicators provide an indication of soil health and functionality. Table 1.6 shows the percentage of sampled ecological sites and their ratings within each allotment. As the table shows, almost all of the ecological sites in the project area are in categories 4 and 5. This means that the soils are functioning properly in regards to nutrient cycling and hydrologic function and they are not eroding off the landscape, i.e., they're stable. In other words, the soils are capable of maintaining the diverse native plant communities associated with the different soil types.

- Annual forage production, Indicator #15 of the 17 Indicators of Rangeland Health, can serve as a surrogate for soil productivity. Of the 115 sites surveyed 90.5 percent were at or near reference condition for forage production. Approximately 9.5 percent (11 sample sites) had a moderate or greater departure from reference conditions. Closer review of the 11 sites found that four were located on the wrong ecological site, two had incomplete data, and three didn't follow the protocol correctly, which resulted in incorrect category determinations. The remaining two sites had been sampled correctly but an incorrect category determination was made.

- Because the soils in the project area are stable, functioning properly in regards to nutrient cycling and hydrologic function, and their productivity is intact this issue is dropped from further consideration in this analysis. Additional information is available in the Supporting Documentation-Watershed section of the Project Record.

Comment: The FS indicates that Rangeland Health is very good on the project area. Because it is not an issue is was dropped from further consideration.

However, it should not be issue that is dropped from further consideration, but one that is used to build upon as evidence that what MGA has been doing for the last 70 years is working in maintaining excellent rangeland health on the project area.

Maintaining rangeland health of the project area is of prime concern to the MGA. Analysis of the baseline data collected by NDSU shows the project area to be in good rangeland health. This can be attributed to the moderate stocking rates that the MGA has maintained on the project area for more than seven decades. A moderate stocking rate is supported by DPG Plan direction for MA 6.1, DPG Plan, Chapter 3, 3-43, Desired Conditions: “Livestock grazing intensity will vary; however, moderate use will prevail over most of the MA.”

Contrary to the Grasslands Plan direction, which provides for moderate grazing use, the FS preferred alternative would institute a light grazing strategy for the Project Area. The reason for this is only to achieve one objective, high structure. The high structure is to provide sharp-tailed grouse has cover or high structure vegetation for nesting cover during April and May. The concept behind managing for the grouse is if you meet the needs of the grouse you meet all the needs of species associated with the grouse habitat, even though it is not needed because all other species are not affected by the project (comment #64). The methods FS is trying to achieve this high structure are not necessarily good for rangeland health.

The high structure objective was originally identified as necessary to provide habitat for sharp tailed grouse, as a single species, **not as an MIS. This would be considered single species management.** The Forest Service has documented some information regarding the status of grouse populations in the project area, but the data do not indicate there is a threat. Indeed, the Forest Service correctly states that it is responsible for the habitat, rather than managing grouse populations. Data showing upward trends for sharp-tailed grouse, however, suggest that there

are not enough data to change management. The FS's objective of light grazing is outlined below:

- Light Grazing Intensity: A level of herbage utilization that, when growing conditions are normal or better, provides maximum opportunity to provide quality habitat for the management of indicator species needing high structure grasslands or sagebrush communities. This grazing intensity also provides an environment for maximizing production potential and meeting high seral condition objectives that are more capable of providing high structure. The stocking rate guideline for this grazing intensity is 30 to 60% of the stocking rate guidelines used by the Natural Resources Conservation Service (Natural Resources Conservation Service 1997) in the local area (Appendix I, DPG Plan).

What the FS is proposing to do with their reduced stocking rates and the implementation of a "light grazing approach", i.e. "Light Grazing Intensity" will change the composition of the grasslands from where it is at now to a community of non-native invasive species, such as smooth brome. It will cause detrimental soil processes that will be hard to reverse later. It is also inconsistent with other federal policies to protect4 native species.

Rangelands, Society for Range Management, Vol. 31, Number 6, Dec. 2009, published the following study: "Are Changes in Species Composition on Central North Dakota Rangelands Due to Non-Use Management" by Shawn DeKeyser, Gary Clamby, Kelly Krabbenhoft, and Joel Ostendorf,. The study addresses rangelands that are being managed as non-use (idle or rest) areas based on the belief that livestock grazing is detrimental to historic anthropologic sites, wildlife and native grassland health. The study shows, as has become evident in more recent years, that such management favors some invasive species such as smooth brome and Kentucky bluegrass.

The authors of the above study conclude:

1. The plants of the North Great Plains have evolved with periodic fires and sometimes heavy utilization by native herbivores like bison, elk, and deer.
2. Based on our findings and the findings of others, both grazing and fire should be reestablished on the KNRI and other lands that have historically been managed with non use.
3. Grazing may impede smooth brome establishment, and more importantly, prevent detrimental soil processes from developing.
4. Fire may establish conditions detrimental to Kentucky bluegrass.
5. Finally, our findings, as well as those of others, indicate that long-term non-use on rangelands in central North Dakota is not a sensible option.

By implementing "light grazing use," the FS will create an environment conducive to expansion of non-native grasses which would replace native grasses just as described in the McKenzie County portion of the Little Missouri National Grasslands as described in the study above. It will just happen over a longer period of time. It will bring about the same result.

Rangeland Health will deteriorate with the implementation of management that favors invasive species such as smooth brome and Kentucky bluegrass. This is already taking place now with a moderate stocking rate as evidenced by the fact that 16% of the transects on the project area are "invasive" species.

The FS confirms this on page 40 of the SDEIS as follows:

- A possible indirect effect of removing livestock from lands in the project area relates to potential effects on the plant communities and their abilities to serve as carbon sinks. It is generally, though not universally, accepted that in grassland ecosystems grazing is needed to maintain the health of associated plant communities. The cessation of grazing in the project area may result in increases in plant community health in the short term, but eventually these communities would likely decline due to litter build up and the presence of invasive grasses. As the vigor of any herbaceous plant community decreases, so does its ability to effectively sequester carbon.

MGA feels the FS should use its time working on preventing the invasive species taking over the grasslands and maintaining good rangeland health. Increased fuel loads also increase the risk of large wildfires with a complete loss of habitat.
RESPONSE: The SDEIS utilized the 17 Indicators of Rangeland Health as a proxy to assess soil capability and productivity in the project area (Volume I Chapter 1, pages 37 - 39) to determine if there were issues that needed to be identified and addressed. Because of the determinations in the 17 Indicators of Rangeland Health assessment, the SDEIS dropped soil capability and productivity as issues requiring detailed study. See the first two introductory paragraphs (SDEIS Volume I Chapter 1, page 26).

The Grasslands Plan established the structure objective for the grassland ecosystem, partly to provide a diversity of habitats for the diversity of wildlife and plants. One conclusion from the Viability report for the NGP was that vegetation structure on public grasslands has been homogenized (USDA Forest Service 2000). A recommendation from the same report was that "allotment management plans will provide for high degrees of heterogeneity of grassland structure." The sharp-tailed grouse is the "management indicator species for the biological community associated with grasslands containing scattered shrubs and *diverse* vegetative structure (Grasslands Plan, Appendix H)." The biological community would include all plants, animals, and insects associated with the grasslands and would include Baird's sparrow on the high structure side of the spectrum as well as horned larks and killdeer on the low structure side of the spectrum.

The Forest Service does not have an overall objective of light grazing in regards to the North Billings project, for that would not be in accordance with the Grasslands Plan. See previous Responses to Comment C-3.65. Light grazing intensity would not necessarily address all identified resource concerns.

The Grasslands Plan goals do promote sustainable ecosystems and multiple benefits to people as evidenced by its first two goals (Chapter 1, pages 1-2 through 1-6). The Forest Service does not agree with the commentor's last statement in this comment. Wildfires do not result in a complete loss of habitat; however, they may have short-term negative effects, but can also result in long-term positive effects. If this weren't the case, the wildfires that have occurred across the grasslands in recent history would have resulted in allotment closures due to complete loss of habitat, which simply isn't the case.

C-3.66 – In the SDEIS, Chapter 2, Alternatives Considered in Detail, page 43, it states:

- *It is important to note that Authorized Use under all the alternatives, except Alternative 1, can be adjusted annually to account for situations that require additional resource protection. Examples include drought, grasshopper outbreaks, over-utilization of a pasture, etc. These adjustments are temporary in nature and normally encompass a single grazing season. However, if a resource has been severely affected, adjustments may be of longer duration.*

Comment: This already happens in the AOI's. This is why the adjustments in AUM's or season of use are not needed in the tool box.

See Comments #20 and #26.
RESPONSE: See Response to Comment C-3.18.

C-3.67 – In the SDEIS, Chapter 2, Alternatives Considered in Detail, Alternative 3, page 44, it states:

- A key component of this alternative is monitoring, as it determines if implemented management actions are accomplishing their intended resource goals.

Comment: The SDEIS hinges on monitoring because the FS doesn't really know if what they are doing is the right course of action or not, i.e. biologically capable. What happens if monitoring doesn't take place? What if budget shortfalls prevent the FS from conducting long term monitoring? Will the FS go ahead with planned reductions even though they can't show whether their initial actions were correct or not?
RESPONSE: See Response to Comments C-1.20 and C-3.2. Monitoring is essential in order to determine if implemented initial actions are moving resources towards or meeting identified Grasslands Plan objectives, otherwise adaptive management cannot occur if necessary.

C-3.68 – In the SDEIS, Chapter 2, Alternatives Considered in Detail, Alternative 3, page 45, it states:

- If monitoring indicates that Grasslands Plan objectives are not being met or progress towards those objectives is not occurring through the implementation of initial or adaptive management options identified in the allotment write-ups located in Chapter 3 Part 2, then a team, composed of Forest Service specialists in consultation with the

affected permittee and MGA Director, would make a recommendation to the district ranger.

Comment: See Comment #25.
RESPONSE: See Response to Comment C-3.24 and C-3.25.

C-3.69 – In the SDEIS, Chapter 2, Alternatives Considered in Detail, Alternative 3, page 45, it states:

- The toolbox is a collection of different management tools that could be used singularly or in combination to address resource issues if proposed initial management actions and adaptive options are not successfully addressing a resource concern(s). The toolbox is a compilation of all the different management tools identified in the 43 different allotment summary sheets. The different tools are not listed in any order of preference or priority for implementation.

Comment: An example of why stocking rate adjustments and season of use adjustments should be removed from the tool box is the SDEIS, Appendix A, page 7, it states:

- Allotment 141 - Recommendation: 22 for 8 - shorten season & increased? FS response: This kind of management would be addressed in the AOI. Also, see Comments #20 and #26.

RESPONSE: See Response to Comments C-3.18, 3.24 and C-3.25.

C-3.70 – In the SDEIS, Chapter 2, Alternatives Considered in Detail, Alternative 4, page 48, it states:

- Alternative 4 is similar to Alternative 3 in some respects. However, it differs from Alternative 3 by establishing Authorized Use based on estimated livestock carrying capacities and accounts for changes in animal unit forage demands with changes in cow size (animal weight). Four of the allotments' Preference was less than initial estimated carrying capacity. Because there are resource concerns in these allotments, Authorized Use was set at Preference adjusted for cow size as a starting point.

Comment: Alternative 4 makes reductions immediately upon implementation for both cow size and initial carrying capacity, as outlined in the comparison only Table 2.12. The FS states that *four (4) allotments* preference was less than initial estimated carrying capacity. The FS justifies the reductions as due to resource concerns in these allotments. Authorized Use was set at Preference adjusted for cow size as a starting point. The SDEIS largely omits this significant reduction.

The FS is resetting the MGA preference numbers based on an "estimated" initial stocking rate calculation adjusted for cow size in spite of the FS having no hard data to support the cow size adjustment.
RESPONSE: The SRT in their 2005 report made the following recommendation, V-2: "Redefine the Animal Unit to reflect current cow size along with older, larger calves and

recalculate the corresponding authorized livestock numbers on allotments" (Report of the SRT, page 19). The Forest Service indicated in our response that we would assess cow size and consider whether or not numbers should be revised based on whether existing conditions were meeting or moving towards Grasslands Plan objectives. The Livestock Grazing ROD for DPG FEIS and LRMP (2006) on page 6 stated that it would be the Forest Service's intent to implement the SRT's recommendations consistent with our final response. Alternative 4 is the result of implementing the SRT recommendations in the North Billings Project. See also Response to Comment C-3.29 and C-3.39.

C-3.71 – In the SDEIS, Chapter 2, Alternatives Considered in Detail, Preferred Alternative- Alt. 4, page 48, it states:

- At the time of the DEIS the responsible official for this project did not have a preferred alternative. After review of information provided during the comment period on the DEIS the responsible official has identified Alternative 4 as the preferred alternative for this project proposal.

Comment: The responsible official doesn't say what information he reviewed to make his decision to choose Alternative 4 as his preferred alternative over the Proposed Action. MGA has to assume it was the reductions offered in Alternative 4 that made the District Ranger make up his mind.
RESPONSE: The SDEIS does say what kind of information, "information provided during the comment period on the DEIS", i.e. DEIS comments.

C-3.72 – In the SDEIS, Chapter 2, Alternatives Considered but Dropped from Detailed Analysis, page 52, it states:

- The Grasslands Plan is an outcome-based document; it defines desired resource conditions, goals and objectives. It does not specify maintaining set levels of grazing, recreation, oil and gas production, or any other resource. Maintaining set grazing levels does not provide needed management flexibility to attain the Grassland goals and objectives. **Grazing is a tool used to help achieve desired conditions; saying the tool must always be used the same way, maintaining current grazing levels, is inconsistent with the basic tenet of the Grasslands Plan.**

Comment: While the Grassland Plan does not specify maintaining set levels of grazing, it does specify maintaining set levels of desired resource conditions. The Demonstration Project does specify that one key goal of the Demonstration Project is to maintain or improve current on-the ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species (Kimbell2006, pp 8-9).

The part of that statement most everyone overlooks, including the FS, is "to maintain or improve current on-the ground conditions." The FS through this SDEIS, has determined that **"maintaining"** the current on-the-ground conditions is not acceptable. The FS has also

determined through the Grassland Plan that maintaining, to the maximum extent possible, a grazing program at current AUM levels is not one of their goals or objectives, even after RF Gail Kimbell said it was.

The above statement sums up the FS attitude toward grazing on the DPG and especially the North Billings Project; "Grazing is a tool used to help achieve desired conditions; saying the tool must always be used the same way, **maintaining current grazing levels,** is inconsistent with the basic tenet of the Grasslands Plan." The Demonstration Project doesn't say it is inconsistent with the basic tenet of the Grasslands Plan, because the Demonstration Project is the Grassland Plan.

The SDEIS contradicts FS direction to maintain grazing levels and revise the LRMP if not. Under Secretary Ray (August 2007). MGA wants the FS to honor what it considers the basic tenet of the Grassland Plan; "maintain or improve current on-the ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species."
RESPONSE: The Livestock Grazing ROD for DPG FEIS and LRMP (2006) on page 9 states the following, "Plan direction will be implemented on individual grazing allotments through the development of AMPs through the Demonstration Project". The Demonstration Project provides provisions to guide the Forest Service and grazing associations on how to proceed with AMP revision. See also Response to Comment C-3.3.

C-3.73 – In the SDEIS, Chapter 2, Alternatives Considered but Dropped from Detailed Analysis, page 52, it states:

- Maintaining the existing condition in this project area would not be consistent with the rest of the Grasslands Plan, the SRT report and the Forest Service response. Throughout the Northern Great Plains planning process, the SRT reports and the Demonstration project itself, the need for a different weighting of multiple uses on the ground is a key theme. The SRT itself, in response to one of the comments raised by the Heritage Alliance of North Dakota (HAND), states "[i]t is the opinion of the SRT that the perceived problems associated with the current FEIS and LRMP stem largely from differences among affected parties in value systems rather than scientific shortcomings" (2006 ROD, p. 4).

Comment: The FS states that "maintaining the existing condition in this project area would not be consistent with the rest of the Grasslands Plan, the SRT report and the Forest Service response." So far the FS has three (3) AMP Projects either completed or actively being developed. In all three, the FS rejects the option of maintaining the existing condition in the project area. The Deciding Officer for this project has stated in various project meetings and at other Association meetings that this EIS will be used as the model for all other EIS's to follow on the DPG. Maintaining the existing condition anywhere on the DPG is out of the question for the FS, because the FS contends it is not consistent with the rest of the Grasslands Plan.

MGA believes maintaining existing condition and the accompanying rangeland health is consistent with the Grassland Plan, especially the 2006 livestock ROD.

The SRT did offer its opinion that the perceived problems associated with the current DPG Plan FEIS and LRMP stem largely from differences among affected parties in value systems rather than scientific shortcomings. MGA doesn't believe this means that the SRT concluded that the existing condition in this project area was unacceptable. The FS is misinterpreting this statement and is using it out of context. The FS approach contradicts the 2006 ROD and direction from the Under Secretary.
RESPONSE: The existing condition is not meeting desired conditions described by the Grasslands Plan (see SDEIS Volume I Chapter 1, Table 1.3 pages 13 and 14); therefore, a need for action or a change in management is necessary to begin moving resources towards Grasslands Plan objectives.

C-3.74 – In the SDEIS, Chapter 2, Alternatives Considered but Dropped from Detailed Analysis, page 53, it states:

- The SRT further states in another response:

  > [i]t is also critical that all affected parties understand that proposed changes in resource use cannot be solely driven by available ecological monitoring data. Rather, public land management goals and objectives must include, by law, public driven, multiple use goals and objectives, many of which are driven by factors other than ecological condition. Livestock production is still the dominant feature of the new Plan, but the Plan must and does include other goals and objectives that reflect public land use desires (2006 ROD, p. 5).

Comment: If the FS is implementing what the SRT says, then **"Livestock production"** would indeed be the dominant feature of the new Plan. However, it is plain to MGA that the SRT's statement is not correct. Wildlife Habitat Management for sharp-tailed grouse is the dominant feature of the new Plan. It is the one objective that when all other objectives are met, this one is used by the FS to make reductions, i.e. McKenzie County Pastures 2, 10 and 11 project.
RESPONSE: The Grasslands Plan provides the goals and objectives for multiple use management on the DPG, including the North Billings Project Area. Refer also to Response to Comment C-3.73.

C-3.75 – In the SDEIS, Chapter 2, Alternatives Considered but Dropped from Detailed Analysis, page 53, it states:

- It is not at all certain that, over the long term, managing to maintain grazing levels as requested in this alternative would leave the ground capable of supporting even a single use management of livestock production. Excessive use over time may result in on-the-ground conditions that would produce fewer pounds of forage per acre and result in the need to reduce time on the ground, livestock numbers, or a combination of both.

For the above reasons, this alternative was not considered any further in this analysis.

Comment: This section started out discussing maintaining the existing condition of the project area. The FS states what they believe is the key problem in the project area and they must do everything in their power to correct, and that is maintain grazing levels would leave the ground incapable of supporting even a single use management of livestock production and excessive use over time may result in on-the-ground conditions that would produce fewer pounds of forage per acre and result in the need to reduce time on the ground, livestock numbers, or a combination of both.

The SDEIS statements contradict FS's conclusion that the area meets Rangeland Health criteria. It also contradicts the fact that MGA members have used the area for more than 50 years at the same preference level.

With this type of attitude and belief toward the grazing program administered by the MGA, it can only lead to the FS decision notice to implement Alternative 4 and give further reductions when monitoring shows objectives are not being met.
RESPONSE: This section of the SDEIS discusses alternatives brought up during scoping or the public comment period that were considered but dropped from detailed analysis. For each alternative an explanation is provided for why it was dropped from detailed analysis.

C-3.76 – In the SDEIS, Chapter 2, Monitoring, page 56, it states:

- PFC surveys, which would serve as a surrogate for assessing water quality in relation to fecal coliform, will be conducted on Magpie Creek. As a stream reach improves towards PFC, so does its associated riparian wetland plant community. As the riparian habitat improves, so does its ability to filter out fecal coliform, resulting in improved water quality (Shirmohammadi and Montas 2003, Pachepsky et al. 2006, Sullivan et al. 2007).

Comment: The FS takes a huge leap of faith believing that by performing PFC surveys and the accompanying results will necessarily result in improved water quality. MGA agrees that as a stream reach improves so does its associated riparian wetland plant community. However, fecal coliform may still exist even though a stream is at PFC. This is especially true if the area sees high recreation use -- which is true for Magpie Creek. PFC is not the equivalent of the fecal coliform.
RESPONSE: The SDEIS (Volume I Chapter 2, Water Quality pages 55 - 56) does not indicate that PFC surveys are the equivalent of monitoring for fecal coliform. The SDEIS proposes that the Forest Service will utilize PFC surveys on Magpie Creek as a surrogate for assessing water quality. The Forest Service agrees, fecal coliforms can exist in stream reaches where livestock grazing and high recreational use occur.

C-3.77 – In the SDEIS, Chapter 2, Trigger Points, page 56, it states:

- If monitoring 5 years hence shows the stream hasn't achieved the next condition class, e.g., FAR-U, the monitoring information would be reviewed.

Comment: On p. 53 of the SDEIS it states:

- Through monitoring, the Forest Service can measure whether or not management actions are meeting or moving towards desired conditions in an appropriate timeframe.

The FS in implying that for riparian areas, streams have to move a whole condition class in 5 years, and if they don't it "triggers" a review for change. This is stated on page 56 as follows:

- The value of monitoring under an adaptive management approach is that it reveals how management is performing relative to desired conditions. A natural extension of this process is to ask, "At what point do we consider the need to change management if monitoring indicates a lack of acceptable progress towards desired conditions?" The point at which monitoring indicates a possible need for change is called a trigger point.

The objective above still states "meeting or moving towards." It doesn't define moving towards as achieving the next condition class. A resource can still be moving towards, i.e., meeting 16 out 17 indicators, and still not be rated to the next condition class.
RESPONSE: A trigger point implements a review process, it doesn't mean a management change is automatically needed (refer to the whole trigger point discussion SDEIS Volume I Chapter 2, page 56). Also, the footnote for Table 2.6 (SDEIS Volume I Chapter 2, page 57) indicates that the Forest Service recognizes that some stream reaches will take much longer to show progress towards Grasslands Plan objectives. The SDEIS is displaying how to measure progress and how adaptive management could potentially be applied.

C-3.78 – In the SDEIS, Chapter 2, Trigger Points, page 56, it states:

- Once a trigger point is reached, the district ranger will convene a team. The team, composed of Forest Service specialists in consultation with the affected permittee and MGA Director, will review the monitoring data and other pertinent information to determine if a management adjustment is needed. If it is determined that any adjustments are needed, the team will review the adaptive management options identified in Table 3 under each allotment write-up located in Chapter 3 Part 2 and/or the Grazing Management Toolbox and recommend a course of action to the District Ranger.

Comment: The above process is definitely written for the District Ranger to have total control over the data considered and the process. However, it purposely excludes the MGA Board contrary to the Grazing Agreement, which delegates to the MGA administration responsibility for the grazing program. Including a Director does not mean the process has includes the Board, or a review of the situation between the Ranger and the Board.

The process has to include a review of the recommended course of action with the District Ranger and the MGA Board of Directors. Otherwise, the Ranger would not be following the Grazing Agreement, which was signed by the Grassland Supervisor on October 20, 2009.

If the District Ranger decides to make a change, and implements a reduction in stocking rate out of the "Grazing Management Toolbox", then the only recourse for the MGA, since they weren't included in the review process is to take the FS to Federal Court. As has already been stated, these kinds of decisions are not clearly appealable if the District Ranger does not issue a Decision Notice.
RESPONSE: The District Ranger is delegated the authority for administration of the range program, however, the Grazing Agreement with the MGA, provides the basis for cooperative management of livestock grazing for the area described in the Agreement. There is no intent to exclude the MGA Board of Directors from involvement in the adaptive management process, should triggers be reached. See also Response to Comment C-3.25.

C-3.79 – In the SDEIS, Chapter 2, Riparian, page 57, it states:

Table 2.6 identifies the triggers associated with riparian monitoring.

Comment: The FS has further defined what "moving towards" the objective means (see Comment #77 above). Even though the FS calls these "triggers points", they effect substantive changes based on short term monitoring in which a trend has not been established. The Grasslands Plan, and the ROD for 2002 and 2006, do not define trigger points under the 2006 ROD nor must the project area have to meet the next condition class within 3, 6 or 10 years. No where does it say that "moving towards" has been determined to be "moving to the next condition class." The objective still says "meeting or moving towards as measured by long term monitoring."

The FS has already stated that none of the Alternatives, including Alternative 4, will meet objectives for the project area as a landscape in the 10-15 year timeframe of the project. The FS has pre-decided the issue of reductions without knowing what the data in 2014 or 2017 will show.
RESPONSE: See Response to Comment C-3.77. While the Grasslands Plan does not identify specific trigger points it does speak to adaptive management (see Grasslands Plan Chapter 4, page 4-1). Without identifying specific trigger points for each objective, there would be no basis to evaluate if the actions implemented are moving towards Grasslands Plan objectives or if adaptive management needs to be considered. Additionally, if monitoring displays that progress is not being made towards Grasslands Plan objectives, a team will be convened to evaluate all of the available grazing management tools not solely Authorized Use reductions as the commentor assumes.

C-3.80 – In the SDEIS, Chapter 2, Green Ash Woody Draws, pages 58-59, it states:

Table 2.7 – Woody draw trigger points

Comment: The definitions for Unhealthy, At Risk, and Healthy show a degree of precision and accuracy uncommon for such methods. Unhealthy = 61-44-6, At Risk = 85-35-4, and Healthy = 359-150-24. The key number seems to be the saplings. The FS is saying that if a Woody Draw has 358 saplings is still at risk. Maybe a range for these numbers would offer a better chance for the objectives to be measured more appropriately.

The same comments made in Comment #79 apply to Woody Draws.
RESPONSE: The respective values of tree age classes and shrub cover were averages obtained from Healthy, At Risk, and Unhealthy sites in the project area. As discussed in the Botany specialist report (page 57), 359 saplings/acre is significantly less than average values reported from seven of eight studies with light levels of livestock grazing where woody draws exhibited characteristics similar to goals and objectives outlined in the Grasslands Plan. Average tree densities from Healthy sites in the project area were approximately equal to the median value of five studies with average or typical stocking levels. Average tree densities from At Risk and Unhealthy sites in the project area tended to be several times less than average values reported from all but one of the five studies with typical stocking levels.

The commentor's suggestion of identifying a range is already met. The range for Healthy sites is 359 or more saplings per acre, At Risk sites is 85 to 359 saplings per acre, and Unhealthy sites is less than 85 saplings per acre.

However, an upward or increasing trend of saplings would indicate improving conditions that would be considered when evaluating the need for additional management changes even if 359 saplings/acre was not achieved. Other factors considered in the trend of woody draw conditions would include changes in tall shrub cover with increases indicating improved conditions for tree regeneration. Upward trends of other resource conditions would also be considered in evaluating overall ecologic trends and the need or lack of need for additional management changes.

See Response to Comment C-3.135 regarding woody draw trends, and Response to Comment C-3.79 for the same general applicability to woody draw trigger points.

C-3.81 – In the SDEIS, Chapter 2, Herbaceous Structure, pages 59-60, it states:

Table 2.8 - Herbaceous structure trigger points

Comment: Again the FS is redefining the concept of "moving towards" objective. Three (3) years is not long term monitoring or a self-imposed limit on moving towards.
Also, the Grassland Plan did not define that at the end of 10 years that Grassland Plan Desired Conditions must be met, only that measurable progress occur.

What if in 2011, 2012 and 2013 the FS short term monitoring showed the project area was not meeting low structure objective because of the high precipitation the area received? Would that be a trigger point and what would be the "Grazing Management Toolbox" solution to this problem?

The same comments made in Comment #79 and #80 apply to Herbaceous Structure.
RESPONSE: Before any change is made after monitoring has been completed, a process is followed that would ensure a decision considers the reasons the progress hasn't been made. Refer to the SDEIS on page 56 which states, "The point at which monitoring indicates a possible need for change is called a trigger point. Once a trigger point is reached, the district ranger will convene a team. The team, composed of Forest Service specialists in consultation with the affected permittee and MGA Director, will review the monitoring data and other pertinent information to determine if a management adjustment is needed."(SDEIS Volume I Chapter 2, Trigger Points). See also Response to Comments C-3.2, 3.79 and C-3.80.

C-3.82 – In the SDEIS, Chapter 2, Seral Stages (Plant Composition), pages 60-61, it states:

Table 2.9 -Trigger points for seral stages

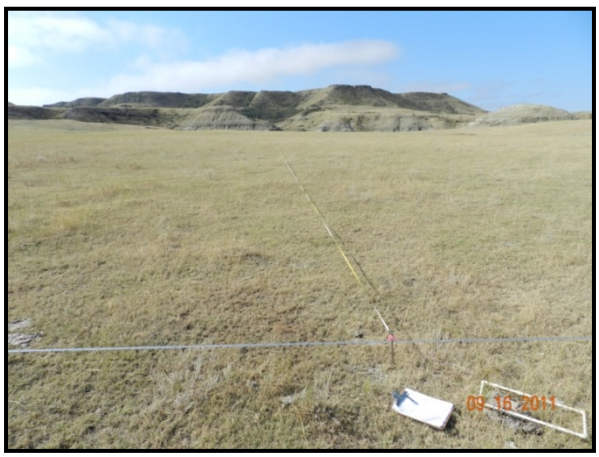
Comment: *Where is the 10-15 year timeframe for this project that is mentioned several times* in the SDEIS? The DPG landscape is more dynamic than what the FS shows in the above tables. Moisture plays a bigger role that grazing in what communities exist on the landscape from year to year.

The SDEIS states that there is little the FS can do to prevent the spread of "invasive grasses." Yet the FS has set trigger points for anything above 16%. Since the FS realizes that they cannot control the spread of invasive grasses, it should be a goal or objective for the FS and MGA to work together on control. This is not addressed in the SDEIS.

The same comments made in Comment #79, #80, #81 apply to Seral Stages.
RESPONSE: See Response to Comments C-3.79 and C-3.80 in regards to upward trends in condition without meeting objectives that would also apply to seral stage/plant composition.

Plant production may sharply change in response to annual or spring precipitation but plant composition does not widely fluctuate from year to year (Bates et al 2006, Olson et al 1985). A series of successive wet years may assist the gradual development or expression of late seral species, while a series of drought years may impede their expression. However, pronounced annual shifts in plant composition would not be expected. Photographs and measurements of late or mid-late seral stages during years of drought, or early seral stages measured during years of normal or greater precipitation support this conclusion (see figures below). An effective drought strategy should minimize regression towards early seral stages during dry years. Conversely, excessive levels of grazing can increase the

potential for shifts towards early seral stages with both below and above normal levels of precipitation.



Early seral blue grama community on north side of Square Butte about 800 ft distant of a reservoir. Measured during September, 2011, the 3rd year of normal or greater precipitation. The site is not necessarily at an undesired condition for an early seral stage.

Late-mid seral western wheatgrass - green needlegrass community measured on June 21, 2007 in Allotment 301, the second successive year of drought conditions asserted by the MGA.

As discussed in the effects analysis for the majority of affected allotments (SDEIS Volume II, Seral Stages), invasive grasses are highly expected to impede the achievement of seral stage/plant composition objectives with the initial actions of any alternative. As also stated in the effects analysis for numerous allotments, neither increasing nor decreasing the level of use without a prescribed grazing system targeted to the control and reduction of invasive grasses will accomplish plant composition objectives in several allotments. Specifically, compressed early season grazing with increased livestock numbers are likely to be most effective in achieving the control of invasive grasses. Rest or greatly reduced use for the remainder of the season to allow native components to increase in vigor and dominance and recover from potential adverse effects of premature use would be necessary. Increased dominance of native species would allow a return to "normal" grazing seasons with appropriate stocking levels, but with periodic returns to early grazing to counter re-occurrence of invasive grasses. Prescribed burning could also be instrumental in controlling the accumulation of plant litter and decreasing conditions for invasive grasses. Delaying immediate actions until the next measurement period would be counterproductive for reversing current trends.

See also Response to Comments C-3.79, C-3.80, and C-3.81.

C-3.83 – In the SDEIS, Chapter 2, Comparison of Alternatives, pages 61, it states:

Table 2.10-Summary of how the alternatives respond to the purpose and need

Comment: Alternatives 3 and 3A state they "Would continue to support existing ranching community under initial actions." The FS has already stated in Alternatives 3 and 3A that they

will not meet objectives and therefore adaptive action will take place. Therefore, they do not support the existing ranching community.

The FS states Alternative 4 is projected to result in the loss of 1-4 jobs and a reduction in revenue. If a person only looks at the regional and state economics, like the FS is doing, then support existing ranching community can be washed over as insignificant, i.e. loss of 1-4 jobs. Initial actions coupled with FS "adaptive management" will reduce livestock operators in the project area by 40-70% by the end of the 10-15 project period. The loss of ranches means loss of wildlife habitat as the private land is subdivided.

The Grasslands Plan and this project does not support the existing ranching community and have demonstrated that in the wording in this document (see Comment #72).
RESPONSE: See Response to C-1.19.

C-3.84 – In the SDEIS, Chapter 2, Comparison of Alternatives, pages 62, it states:

- Alternatives 3, 3A and 4 are adaptive management alternatives. Responses in the table above are to initial actions proposed under each alternative to address resource concerns. The suite of additional management tools, under adaptive management, available to each alternative is the same. The difference among the three alternatives when considering the adaptive management portion of the alternatives is time. Alternative 4 initially takes more aggressive steps to address resource concerns than do Alternatives 3 and 3A. If under Alternatives 3 or 3A monitoring reveals that more aggressive measures are required, being able to implement those measures and see significant results within the 10- to 15-year timeframe associated with this project becomes questionable.

Comment: The FS states that the only difference among the three alternatives when considering the adaptive management portion of the alternatives is time. **This suggests that while all alternatives will achieve Plan objectives, the variable will be the amount of time it will take to achieve those objectives.** The question that has to be asked is whether implementing Alternative 4 is worth the impacts to the ranching community over implementing Alternatives 3 or 3A? FS ignores the 2006 Livestock Grazing ROD when it failed "to determine if LRMP Goals and Objectives are achievable or need modification;" and failed "to maintain or improve current on-the-ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species." 2006 Livestock Grazing ROD pp. 8-9.

The FS doesn't see the issue in the same way. They state, "If under Alternatives 3 or 3A monitoring reveals that more aggressive measures are required, being able to implement those measures and see significant results within the 10- to 15-year timeframe associated with this project becomes questionable." The FS believes Alternative 4 is the alternative that should be implemented. And the FS really isn't willing to choose Alternative 3 or 3A and take the chance that monitoring will show that "more aggressive measures should have been taken from the start, as in Alternative 4." They indicate this by saying they do not want to

take the **"time"** that would be required under Alternative 3 or 3A to get significant results because it wouldn't be within the 10- to 15- year timeframe associated with this project.

At this point, the FS is saying their Preferred Alternative will be selected in the Decision Notice.
RESPONSE: See SDEIS Volume I Chapter 1, page 25, Chapter 3, pages 224 - 233 and Response to Comments C-1.7, C-1.8, C-3.17, C-3.2.

C-3.85 – In the SDEIS, Chapter 2, Comparison of Alternatives, pages 63-68, Table 2.12- states for each resource area: (Note: Only alternatives 2, 3, and 4 will be analyzed)

Table 2.11-Key issue comparison of the alternatives

Riparian

Comment: The main differences between Alternative 3 and Alternative 4 are:

- Alternative 3 – **23 of 28** stream reaches identified as FAR or NF improving towards PFC
  - Alternative 3 – 18 of 23 reaches improve are rated FAR-D or NF
  - Alternative 3 – 7 of 18 reaches could improve, but could take several decades to PFC

- Alternative 4 – **27 of 28** stream reaches identified as FAR or NF improving towards PFC
  - Alternative 4 – 27 of the FAR or NF reaches would improve
  - Alternative 4 – 2 of 27 reaches are expected to take several decades to PFC

Conclusion: There is a difference of **4 Streams** going to PFC between Alternative 3 and Alternative 4. Significantly, even FS acknowledges that resource changes do not occur in a short time. This admission exposes how the FS definition of moving towards plan objectives is defined so unrealistically as to require reductions.
RESPONSE: As stated previously, reductions in livestock numbers are not the only tool in the Toolbox when assessing what action to take in response to monitoring results. The SDEIS is documenting the expected effects of the various alternatives and recognizing that some stream reaches may require longer than the typical expected life of an AMP, 10 to 15 years, to meet or move towards PFC. However, positive resource changes can occur in a relatively short time. For example, Ash Coulee Creek had riparian exclosures put in place on several reaches. Within five years, the reaches went from a rating of NF to PFC (see SDEIS Volume II Chapter 3, Allotment 258 pages 413 - 415).

C-3.85a – Woody Draws

Comment: The main differences between Alternative 3 and Alternative 4 are:

- Alternative 3 – **12 of 32** Allotments identified with Woody Draws improving

- Alt 3 – 14 Allotments no change.
- Alt 3 – 6 Allotments would decrease in condition

- Alternative 4 – **12of32**Allotments identified with Woody Draws improving
  - Alternative 3 – 14 Allotments no change.
  - Alternative 3 – 6 Allotments would decrease in condition

Conclusion: There is no difference between Alternative 3 and Alternative 4 for Woody Draws.

RESPONSE: Corrections to the SDEIS have been made in the Errata that show that under Alternative 3, 11 allotments would experience the potential for positive effects, 15 for neutral effects, and 6 for negative effects to the trend of woody draw conditions. Another correction in the Errata is as follows, under Alternative 4, 21 allotments would experience the potential for positive effects, 7 for neutral effects, and 4 for negative effects to the trend of woody draw conditions (see Botany specialist report, pages 88 - 92, and pages 106 - 111). Additionally, the comment misquoted values in Table 2.11 for woody draw conditions under Alternative 4 that indicate a significant difference rather than no difference with Alternative 3.

<u>C-3.85b – Herbaceous Structure</u> (Indicator – Trend of High Structure)

Comment: The main differences between Alternative 3 and Alternative 4 are:

- Alternative 3 – **8 of 43** Allotments meet high structure

- Alternative 4 – The amount of Low structure would decrease.
  - Moderate and High structure would increase, but to what degree is unknown.

Conclusion: The FS predicts high structure would increase, but does not know to what degree. Other scientific studies call into question how much of the project area is biologically capable of achieving high structure as that objective is measured by the FS. It is unlikely that high structure could be achieved throughout the project area, thus leaving MGA members with additional and unquantified reductions.

RESPONSE: See SDEIS Volume I Summary pages x - xi, Chapter 1 page 23, Chapter 2 pages 53 - 61, Chapter 3 page 167 and pages 176 - 177; and the Wildlife specialist report, pages 13 - 15.

As stated previously, automatic reductions in numbers are neither the only, nor the first tool, that would be reached for when determining courses of action based on monitoring data. While we cannot quantify the amount of improvement in high structure throughout the project area as a result of changes in management, the anticipated effects of the proposed alternatives are based on the relationship between structure and forage utilization.

Appendix I of the Grasslands Plan provides some guidance suggesting the use of various stocking intensities that would help achieve objectives for herbaceous structure.
See also Response to Comment C-3.6 and 3.7b, C-3.8.

<u>C-3.85c – Seral Stages</u> (Indicator – Trend of High Structure)

Comment: The main differences between Alternative 3 and Alternative 4 are:

- Alternative 3 – **9** Allotments would improve in seral conditions (20%)
- Alternative 4 – **14** Allotments would improve in seral conditions (33%) at a faster rate than Alternative 3.

Conclusion: The FS predicts **a difference of 5 allotments** that would improve in seral condition. The FS does not explain how that would occur when the SDEIS admits such change is difficult in areas with non-native grasses. The FS does not explain how reducing grazing will increase native grass when research suggests the opposite will occur -- the non-native species will crowd out the natives.

RESPONSE: The SDEIS should have stated that under Alternative 3, 26 rather than 20 percent of the allotments would experience positive effects to the maintenance or increased vigor of native plant communities that would increase the potential for achieving seral objectives. Reported values are correct under Alternative 4, so there would be a difference of 3 rather than 5 allotments that would improve in seral conditions between alternatives. This is corrected in the Errata.

As is more fully explained in Table 2.11 of the SDEIS and the Botany specialist report (pages 93 - 95, and pages 112 - 115), potential achievement of late seral and native plant community objectives would be obtained from varying combinations of grazing level reductions, changes in grazing systems, increased water management, and range improvement structures such as the creation of riparian pastures.

Reduced levels of grazing can facilitate shifts towards late seral stages among native plant communities, but reduced stocking levels would perpetuate the maintenance or increase of invasive grasses among several affected allotments. This situation is discussed in the allotment level effects analysis (SDEIS Volume II, Seral Stages), and is particularly true if grazing systems remain poorly coordinated with invasive grass palatability and contribute to greater than expected use of the native component.

C-3.85d – Summary:

- There is a difference of four **(4) streams** going to PFC between Alternative 3 and Alternative 4.
- **No difference** between Alternative 3 and Alternative 4 for Woody Draws improvement.

- Alternative 4 – The FS predicts **high structure would increase,** but does not know to what degree.
- The FS predicts a difference of five **(5) allotments** that would improve in seral condition between Alternative 3 and Alternative 4

The differences between Alternative 3 and Alternative 4 do not appear to be significant enough for the FS to choose the most aggressive action alternative, Alternative 4 over Alternative 3 or 3A. The FS states that the only difference among the three alternatives when considering the adaptive management portion of the alternatives is **time.**
RESPONSE: Almost twice as many allotments would have the potential to experience positive effects to woody draw condition under Alternative 4 compared to Alternative 3. The difference would be three rather than five allotments with an increased positive effect on the maintenance or increased vigor of native plant communities. See Response to Comments C-3.85, C-3.85a, C-3.85b, and C-3.85c above.

C-3.86 – In the SDEIS, Chapter 2, Comparison of Alternatives, pages 68, it states:

- For comparison purposes in Table 2.12, the AMs authorized under Alternatives 2, 3, and 3A were converted to AUMs by multiplying the Authorized Use AM number (Preference) by 1.15 (see Grasslands Plan, Appendix I). This assumes that all of the animal units are larger cows within the range of 1,100 to1,300 pounds with an average of 1,200 pounds to get a conversion factor of 1.15 (the conversion factor is explained in detail in the Range section of Chapter 3). In some cases this will likely result in an over or under estimation, but, again, this is done for comparison purposes.

Comment: See Comment #39.
RESPONSE: See Response to Comment C-3.39.

C-3.87 – In the SDEIS, Chapter 2, Comparison of Alternatives, page 68, it states:

- Alternative 3, 3A, and 4 are adaptive-management-based alternatives. It is possible that the numbers in this table for those alternatives may change over time. If monitoring indicates that the initial actions are not successful in addressing resource concerns, adjusting the AMs/AUMs is one of the tools in the tool box that can be used (see Table 2.1 and other discussions on adaptive management).

Comment: This is paragraph is included throughout the SDEIS. It is the FS's back up plan for being able to make entirely arbitrary reductions in the future without going through the NEPA process again once the Decision is made. What it really means, is that it doesn't make any difference what Alternative the FS picks in the Decision Notice, they will use the adaptive management to make future adjustments.
RESPONSE: See Response to Comment C-3.24

C-3.88 – In the SDEIS, Chapter 2, Comparison of Alternatives, pages 68-70, it states in Table 2.12 - Comparison of summer Authorized Use by alternative that the total AUMs for Alternatives 2, 3, and 3A is 32,891 AUMs. In Comment #70 it stated four of the allotments' Preference was less than initial estimated carrying capacity. Those allotments were #129, #130, #131, and #132H. Because there are resource concerns in these allotments, Authorized Use was set at Preference adjusted for cow size as a starting point.

Comment: The total "preference" AMs, from Exhibit E, 2009 MGA Grazing Agreement, Alternatives 2, 3 and 3A in AUMs from Table 3.5, page 98, SDEIS and Authorized Use AUMs from Table 2.12 for allotments #129, #130, #131, and #132H is as follows:

Allotment#	Preference in AMs	Preference in AUMs	Alt.'s 2,3,& 3A AUMS- Table 2.12
129	1090	1254	1150
130	833	958	729
131	273	314	55
132H	332	382	370

Authorized Use in Table 2.12 was set at Preference adjusted for cow size as a starting point. Obviously this was not true for Allotments 129, 130, 131, and 132H.

Where did the FS obtain the AUMs for these four allotments in Table 2.12?

MGA suggests the FS remedy the situation with the unknown AUMs for these four allotments in Table 2.12. It would appear that the correct AUMs for the four allotments in contained in Table 3.5 and the Total AUMs in Table 2.12 should be 33,437 from Table 3.5 also, and not the 32,891 as shown in table 2.12

The 33,437 AUMs in Table 3.5 are calculated by taking the Total Authorized Use, 29,125 AMs for Alternatives 2, 3, and 3A in Table 2.13, page 70, SDEIS, times 1.15 conversion factor, which equals 33,494 AUMs. Since Allotment #133D5 is hayed, subtract the 56 AUMs from the 33,494 AUMs total, which equals 33,437 AUMs which is also shown in Table 2.13.

In Table 2.12, Alternative 4 total (authorized) AUMs equals 27,801. In Table 2.13, page 70, Alternative 4 Total Authorized Use equals 28,430 AUMs. MGA would like to know why there is a difference.

Table 2.12 is also shown as Table S.10 on page xxix and xxx. Table 2.13 is also shown as Table S.11 on page xxxi.

RESPONSE: Allotment 129's Preference is 1,090 AMs. This allotment is allocated 1,000 AMs for 8 months of summer use and the remaining 90 AMs for 2 months of winter grazing (SDEIS Volume II, Table 129.3 page 64). Alternatives 2, 3, and 3A in Table 2.12 is referencing the summer grazing months (1,000 AMs X 1.15 AUE = 1,150 AUMs).

Allotment 130's Preference is 833 AMs. This allotment is allocated 634 AMs for 8 months of summer use and the remaining 199 AMs for 2 months of winter grazing (SDEIS Volume II, Table 130.3 page 90). Alternatives 2, 3, and 3A in Table 2.12 is referencing the summer grazing months (634 AMs X 1.15 AUE = 729 AUMs).

Allotment 131's Preference is 273 AMs. This allotment is allocated 48 AMs for 8 months of summer use and the remaining 225 AMs for 2 months of winter grazing (SDEIS Volume II, Table 131.3 page 106). Alternatives 2, 3, and 3A in Table 2.12 is referencing the summer grazing months (48 AMs X 1.15 AUE = 55 AUMs).

Allotment 132H's Preference is 332 AMs. This allotment is allocated 322 AMs for 8 months of summer use and the remaining 10 AMs for 2 months of winter grazing (SDEIS Volume II, Table 132H.3 page 127). Alternatives 2, 3, and 3A in Table 2.12 is referencing the summer grazing months (322 AMs X 1.15 AUE = 370 AUMs).

Refer to Response to Comments C-3.29 and C-3.40

C-3.89 – In the SDEIS, Chapter 3, Part 1, Project Area, page 73, it states:

- The project area contains approximately 118,587 acres, of which 87,262 are National Forest System (NFS) lands (Figure 1.1).

Comment: On page 17, SDEIS it states the following:

- The project area (Figure I .I) encompasses approximately 118,354 acres of intermingled private, state, and NFS lands.

This is not a big difference in acres but the FS might want to check to see which one is right.
RESPONSE: The discrepancy in values has been corrected in the Errata.

C-3.90 – In the SDEIS, Chapter 3, Part I, Range Management, page 79, it states:

- During the late I970s and I980s, Forest Service objectives for rangelands included improving the distribution of livestock to get better utilization of forage produced, reducing impacts on heavily used areas, and increasing red meat production, which was also in concert with the prevailing local opinion at the time (Jim Wickel, personal communication, 2010).

Comment: The FS provides an interesting analogy of what happened in the 1970s and 1980s according to Jim Wickel, Range Staff in the R-1 Regional Office. The FS should also have stated that it was at Congress's direction that the FS increase its emphasis on red meat production through increased development of range infrastructure, including developing range water and cross fencing allotments to create more but smaller pastures.
RESPONSE: The commentor fails to provide the specific citation in which Congress directed the Forest Service to increase its emphasis on red meat production; therefore, the Forest Service can't respond to this claim.

The FS also states on page 79 that development of additional infrastructure provided opportunities to more effectively utilize forage, which affected the mosaic of herbaceous structure and associated wildlife. The FS, however, offers no proof for this statement other than

Jim Wickel's personal communication. This personal conclusion fails to consider other factors that changed herbaceous structure like energy development and increased big game populations.

The FS now takes the opportunity with the development of the DPG Plan to say that the direction the FS went in the 70's and 80's was wrong, and that they now intend to fix their mistakes by emphasizing wildlife over livestock. The FS offers no excuse for their past actions and now passes on the consequences of this alleged mistake to the MGA members, who have taken the FS direction for increased red meat production and turned it into achieving good rangeland health. For this. The members are facing substantial reductions in their herd size because the FS arbitrarily changes the game.

The FS should accept more responsibility for their past actions by working with the MGA and conducting the necessary monitoring and using the correct science to make sure that their assumptions of riparian, woody draws, herbaceous structure and seral stages are correct. All reductions should be held till the science and long term monitoring are completed and the critical scientific issues are better understood.
RESPONSE: The effects of the use of various grazing management tools is discussed in the SDEIS (see Volume III Appendix D).

On page 184, the Forest Service discusses the reasonably foreseeable actions in which oil and gas developments and travel management are discussed (SDEIS Volume I Chapter 3). Energy development is certainly a cumulative factor in the herbaceous structure mosaic in addition to other resources. For a discussion on the cumulative effects of energy development, see SDEIS Volume I Chapter 3, pages 83 - 84.

To summarize that response, according to the Natural Resources Conservation Service (NRCS), one AUM is equal to approximately 5 mule deer. According to NDG&F data from 1991 to 2007, mule deer populations have averaged 6 to 7 deer per square mile. In contrast, livestock density is generally on the order of 200 to 300 cattle per square mile.

The comment is in contrast with an SRT conclusion found in the Livestock Grazing ROD for the DPG (2006) on page 5 where they state that "livestock production is still the dominant feature of the new plan" and "…public land management goals and objectives must include, by law, public driven, multiple use goals and objectives, many of which are driven by factors other than ecological condition." Lastly, "substantial reductions" are assumed to be the only tool proposed by the Forest Service to move towards desired conditions, which is incorrect. Authorized Use adjustments are just one of many tools that can be utilized to address meeting or moving towards Grasslands Plan objectives.

C-3.91 – In the SDEIS, Chapter 3, Part I, Table 3.2, page 83, it states:

Table 3.2 - Summary of past, present, and reasonably foreseeable future actions considered in the cumulative effects analysis

Comment: MGA would like to know what is "**the natural pattern of disturbance in the project area**." Since grazing, in this case livestock grazing, is a part of the project area, wouldn't it be a part of the natural pattern of disturbance? Indeed, it is well settled that the grasslands evolved under herbivory. The premise in Alternative 4 that this is somehow destructive when MGA members did not increase their numbers cannot survive scrutiny.

By the description of the "effects" section of this table, it is apparent that the FS believes livestock grazing is the principal cause affecting all resource areas, even though in the 70s, 80s and 90s it was the FS who sought this improved livestock management on the Grasslands.
RESPONSE: Changes in the pattern of grazing have occurred with the construction of water developments and division of the landscape into small fenced pastures that have increased the period and evenness of grazing relative to historic patterns. The increased annual frequency, intensity, and season of grazing decreases the mosaic of grazing disturbance and provides less opportunity for woody and herbaceous plant recovery compared to historic conditions that resulted in fluctuating periods and intensity of use.

The description or definition of "natural pattern of disturbance" can be found in the Northern Great Plains FEIS Comments and Project File. For example, in the NGP FEIS Comments and Responses Addendum, page 275. In summary, natural disturbances influence grassland evolution and development. Herbivory, as one of those evolutionary forces, has shifted from free-roaming elk and bison to fenced and managed domestic livestock altering the intensity and timing of herbivory. In addition, fires, natural and human ignited, were a frequent event prior to approximately two hundred years ago. Now fires are aggressively suppressed. See also USDA (2000) Terrestrial Assessment: a broad-scale look at the species viability on the Northern Great Plains (Final Report) for a more scientifically rigorous description.

The reason livestock grazing is considered "the principle cause" in this proposal is because the purpose and need for the project and proposed action are livestock grazing. The other activities occurring in the project area are thus, cumulative in nature. If the project under consideration were related to a different resource activity (i.e. a proposed recreation trail) the cumulative effects list would include a different set of actions.

C-3.91a The table also states, "Modification of grazing systems to take advantage of non-native grass species can adversely affect the native component intermingled in these plant communities." It was the FS who prescribed the modification of the grazing systems to take advantage of nonnative grass species. What is the FS going to do to prescribe next to remedy the non-native grass species that they view is a crisis situation?
RESPONSE: The potential exists for early-season grazing to adversely affect native plant vigor and facilitate shifts towards early seral stages or invasive species establishment. However, there is a lack of well-coordinated grazing seasons with invasive grass palatability under current management.

A greater threat to the maintenance of native grass communities is likely to involve perpetuation of current grazing seasons that miss the period of invasive grass palatability

and therefore assists their spread through litter accumulation and excessive pressure/decreased vigor on the selected native component.

See Response to Comments C-3.82, C-3.201, and C-3.208.

C-3.92 – In the SDEIS, Chapter 3, Part 1, Methodology, page 86, it states:

- Information used in the range analysis was gathered from the sources identified below. Also covered in this section is the methodology used to calculate **initial estimated carrying capacity**, which was used to set Authorized Use levels under Alternative 4.

Comment: In the Grassland Plan, page 5, it states:

- ***Livestock Grazing***
  Objectives: Use a standardized process to determine *stocking rates* (for example, the Natural Resources Conservation Service system) as modified to fit desired vegetative conditions and protect other resource values.

The FS states it used a methodology to calculate "initial estimated carrying capacity." The methodology that the FS describes on pp. 86-88 of the SDEIS, describes the standard NRCS protocol to establish an estimated initial stocking of the range, not "initial estimated carrying capacity." The SDEIS has purposely misrepresented the methodology as producing something it wasn't designed to do.

The FS describes carrying capacity as follows:

- Carrying capacity is defined as the average number of livestock and/or wildlife that may be sustained on a management unit compatible with management objectives for the unit. In addition to site characteristics, it is a function of management goals and management intensity (Society for Range Management 2005).

Holecheck, et al. 1989, defines carrying or grazing capacity as the maximum stocking rate possible year after years without inducing damage to vegetation or related resources.

NRCS's National Range and Pasture Handbook defines carrying capacity as the maximum stocking rate possible without inducing permanent or long term damage to vegetation or related resources. The stocking rate may vary from year to year in the same area as a result of fluctuating forage production.

In NRCS's National Range and Pasture Handbook, Chapter 8, (Wildlife Management on Grazing Lands) states the quantity, quality, availability, and distribution, both seasonally and spatially, of all habitat elements (food, cover, and water) determine the carrying capacity of a given area of land for a given wildlife species.

NRCS's National Range and Pasture Handbook defines stocking rate as the number of specific kinds and classes of animals grazing or utilizing a unit of land for a specific period of time. This may be expressed as animals per acre, hectare, or section, or the reciprocal (area of land/animal).

MGA preference numbers would be similar to the definition of carrying capacity- the maximum stocking rate possible without inducing permanent or long term damage to vegetation or related resources. Carrying capacity is calculated over many years, not in a one-time initial stocking rate calculation. The FS's use of the term "initial estimated carrying capacity" calculation is incorrect.

Since the FS chose to calculate initial stocking using the NRCS protocol, they cannot claim it as initial carrying capacity and use it to change preference numbers. That can only come from taking the initial stocking and through long term monitoring of the AOIs, reset the preference numbers based on average stocking over the monitoring timeframe.

The FS has purposely misrepresented the methodology as producing something it wasn't designed to do. All the information used in this section of the SDEIS should be removed and redone.

RESPONSE: The Forest Service used the most reliable data when calculating the initial estimated carrying capacity. The production values used were supplied by the NRCS. NRCS's production data is compiled over years from universities, State and Federal agencies and are not a one year production value as the commentor is referring to. Also, please refer to the definition for carrying capacity (SDEIS Volume III, Glossary page 3).

The SDEIS did not use the exact NRCS protocol, please review the whole Carrying Capacity Analysis discussion (SDEIS Volume I Chapter 3, pages 86 - 89). See also Response to Comment C-1.5.

C-3.93 – In the SDEIS, Chapter 3, Part 1, Methodology, Carrying Capacity Analysis, pages 86-88, it states:

- How was it calculated?

Comment: The MGA retained an independent consultant to use the same process described above to calculate initial stocking rate (ISR) described in the NRCS Range and Pasture Handbook (1997). What the FS described as the "carrying capacity equation" is describe in the NRCS handbook as the "initial stocking rate equation." The results of the MGA analysis show the FS initial carrying capacity (ICC) estimates are almost always consistently lower than the independent consultant's initial stocking rate estimates. The FS uses their estimated initial carrying capacity in Alternative 4 Authorized Use and is displayed in Table 3.5 on page 98 of the SDEIS. Listed below is a comparison by allotment between MGA initial stocking rate and the FS estimated initial carrying capacity, and the percentage difference:

Allotment	NFS Acres	Pref. AUMs	FS ICC AUMs	MGA ISE AUMs	% Difference
#126	1,950	562	798	850	+6
#128	4,299	2,146	1,380	1,501	+8
#126/128	6,249	2,708	2,178	2,351	+7

#127	1,118	474	345		372	
#129***	4,915	1,254	1,090(1519)		1,697	
#130	2,056	958	891	917	+3	
#131***	1,633	314	273(530)	632	+57%(+16)	
#132A**	309	202	202(159)	158	0	
#132H	622	382	364	354	-3	
#133	399	313	198	200	+1	
#133D5*	80	56	35	36	+2	
#134	479	292	220	220	0	
#135***	8,718	1,793	1559(2,147)		2,647	+47(+19)
#136/139	641	416	285	304	+6	
#140	474	323	237	241	+2	
#141	311	204	113	113	0	
#142	318	192	128	139	+8	
#158	5,133	1,801	1,527	1,744	+12	
#220	279	184	112	112	0	
#221	403	283	174	169	-3	
#230	881	419	358	410	+13	
#237	721	331	250	272	+8	
#239	484	288	176	181	+3	
#240	2,013	930	876	871	-1	
#241	892	413	357	341	-5	
#243	792	431	347	334	-4	

#244	554	271	241	239	-1	
#248**	616	359	359(261)	260	0	
#249	622	235	194	216	+10	
#256	5,586	1,830	1,678	1,848	+9	
#258	5,605	2,382	1,694	1,864	+9	
#272	2,956	1,694	1,472	1,461	-1	
#277	2,768	1,298	1,243	1,211	-3	
#278	472	313	230	230	0	
#281	555	339	270	269	0	
#282***	10,807	2,441	2,123(2859)		3,411	+38(+16)
#283	1,048	345	340	391	+13	
#286	465	320	236	237	0	
#287	1,744	666	577	621	+7	
#288	634	308	216	237	+9	
#289	4,636	2,057	1,862	1,929	+3	
#300	1,300	559	524	550	+5	
#301	4,717	1,916	1,734	1,955	+11	
#302	2,253	1,201	1,051	1,034	-2	

*Allotment 133D5 is an 80-acre allotment that is partially hayed on an annual basis and is not grazed; therefore, it is not included in the totals.

**Two allotments, 132A and 248, are authorized Preference since they are meeting resource objectives, even though the FS initial estimated carrying capacity on NFS lands if lower than preference, i.e. #132A = 159 AUMs compared to 202 AUMs preference, and #248 = 261 compared to 359 AUMs preference.

***Four allotments had authorized use was set by adjusting Preference for cow size because they were not meeting objectives even though FS initial estimated carrying capacity on NFS lands was higher than preference, i.e. #129, #131, #135, and #282.

There were 24 allotments (59%) where the MGA ISR was greater than the FS ICC. Of the 24 allotments, 50% had increases greater than 5%, and 25% had increases above10%. Of the 17 allotments showing either no change or a decrease from the FS ICC, all were 5% or less.

MGA used the same factors in the equation that the FS did, except for herbage production per acre. The MGA asked for that information in a FOIA but the FS refused to send it. In a letter dated July 21, 2011 from Acting Grassland Supervisor Nancy Peak to Billings County Auditor Joan Jergens, it states "Your letter of April 21, 2010 requests the following:"

- "The 3 spreadsheets that I received show the analysis for ecological sites and production for the whole project area. However, they do not relate to specific allotments in the project area. Again, the spreadsheets are for the entire project area without any way to break it out. What I need is an allotment by allotment break out of the information contained in those spreadsheets."

The FS did not include the last part of the above paragraph which stated:

- This is a sentence from the DEIS that describes what is needed:

  These values were totaled up to provide initial estimated carrying capacities for NFS lands within an allotment.

  What is needed is the information broken out by each allotment in the project area.

The Acting Grassland Supervisor response back to the above paragraph is as follows:

- Response: The FOIA does not require agencies to respond to requests by creating records. Also, the FOIA does not require agencies to explain records already created.

In the soil spreadsheets, the FS herbage production estimates for eight of the soil mapping units (in the MLRA 54) were examined. The FS estimates of production for these mapping units appear to be done correctly. For example:13B = 1136lbs/ac; 37B = 1596lbs/ac; SIB= 1470 lbs/ac; 63F = 1360 lbs/ac; and 71D = 2265 lbs/ac. These are the same values that were obtained when calculating the herbage production for each of the component soils within the soil mapping unit (percentage composition is from the Web Soil Survey, and production is from the NRCS ESD)

However, these values are inconsistent with data that are reported in subsequent carrying capacity estimates. It appears that the normal herbage production (lbs/ac) of the following soil mapping units are: 13B = 825; 37B = 739; 51B = 763; 63F = 840; 71D = 1398; and 72F = 1012 which do not track with the soil spreadsheets. Therefore it is not possible to "track" the FS process.

RESPONSE: The Forest Service has rerun the carrying capacity analysis with the same end results. Upon review and consultation with the MGA, the Forest Service cannot determine how MGA's independent consultant came up with different end results. Without detailed calculations displaying how MGA's independent consultant came up with the commentor's values the Forest Service is unable to respond to the comment and stands by the SDEIS Alternative 4 proposed Authorized Use levels.

When the Forest Service received a FOIA request for "all data pertaining to North Billings Allotment Management Plan revision", the Forest Service supplied all their information/data as it existed. The commentor suggests that the Forest Service refused to supply this information by allotment. The data was provided as is; however, the FOIA requester could have extracted the information by allotment if they had chosen to. The Forest Service, under FOIA, does not have to "create" documents, only provide documents as they exist.

C-3.93a – With no way to compare the herbage production per acre between what the FS used to what MGA used, MGA has to assume the differences between the FS initial carrying capacity and MGA initial stocking rate are the herbage production per acre. MGA feels they have calculated the herbage production per acre correctly, and stand on the initial stocking rates as being correct in the above table.

Allotments #129, #131, #135, and #282 were authorized by adjusting for cow size even though their initial stocking rate was greater than preference.

- Allotment #129 ISR was 1519 AUMs. However, #129 was penalized for not meeting objectives and held at 1090 AUMs. Allotment #129 didn't even get Preference adjusted for cow size which was 1254 AUMs, which was well below the ISR of 1519 AUMs.
- Allotment #131 ISR was 530 AUMs. However, #131 was penalized for not meeting objectives and held at 273 AUMs. Allotment #131 didn't even get Preference adjusted for cow size which was 314 AUMs, which would have been well below the ISR of 530 AUMs.
- Allotment #135 ISR was 2147 AUMs. However, #135 was penalized for not meeting objectives and held at 1559 AUMs. Allotment #135 didn't even get Preference adjusted for cow size which was 1793 AUMs, which was well below the ISR of 2147 AUMs.
- Allotment #282 ISR was 2859 AUMs. However, #282 was penalized for not meeting objectives and held at 2123 AUMs. Allotment #135 didn't even get Preference adjusted for cow size which was 2441 AUMs, which was well below the ISR of 2859 AUMs.

The FS should grant allotments #129, #131, #135, and #282 more than their preference adjusted for cow size, especially since their ISR's range from 26% to 50% of their preference adjusted for cow size.

RESPONSE: The need for action identified for these four allotments based on the comparison of existing conditions to desired conditions needs to be considered first (see SDEIS Volume II, Table XXX.2 for each allotment). In review of the initial estimated carrying capacity (IECC) for each allotment it was determined that while the IECC for these allotments was greater than the Preference, an increase in Authorized Use based on the IECC would not move resource conditions towards Grasslands Plan objectives. Therefore, the SDEIS in Alternative 4 proposed to authorize use at the Preference level adjusted for cow size as an initial action in combination with additional tools to address resource issues.

Refer to Response to Comment C-3.29

C-3.94 – In the SDEIS, Chapter 3, Part 1, Methodology, page 88, it states:

- Carrying capacity calculation is a standard equation taught in range management textbooks such as Range Management Principles and Practices (Holechek, et al. 1989). It is also described in the NRCS's Range and Pasture Handbook (1997) under calculating stocking rates.

Comment: Holechek, et al. 1989, does not have a standard equation for calculating carrying capacity. He does have a standard equation for calculating stocking rate as does the NRCS's *Range and Pasture Handbook* (1997) under calculating stocking rates. Again, the FS is incorrect in their assumption that "carrying capacity" is the same as a stocking rate.
RESPONSE: While carrying capacity and stocking rate are not synonyms, they do relate to each other. Holechek et al. (1989) states "Carrying or grazing capacity are terms commonly used when discussing stocking rate". On page 194 Holechek et al. identifies that "once the average forage production and the minimum residue required to maintain the site are determined, the initial stocking rate can be set". They also state that "the stocking rate is determined by dividing the total usable forage per unit area by the total forage demand of the grazing animals for the grazing period." The Forest Service, with help from the NRCS, determined the average forage production for MLRA's and soil map units along with the minimum residue maintained and the forage demand of the grazing animal which would be 0.25 harvest efficiency. This is standard and Holechek et al. also makes suggestions for adjustments for distance to water, percent slope, etc which is listed in Chapter 8 of Holechek et al. The Forest Service states that this is a starting point to base Authorized Use levels proposed in Alternative 4; with monitoring, adjustments can be made in the future.

C-3.95 – In the SDEIS, Chapter 3, Part 1, Methodology, a. SRT recommendations, page 89, it states:

- SRT recommendations

  The SRT recommended (Recommendation I-1, page 3, October 2006) the use of NRCS Order 2 soil surveys for Billings and Golden Valley counties along with the

associated ecological site information in the development, implementation, monitoring, and refinement of pasture or allotment-level management plans. The SRT also recommended that herbage production be estimated for all sites through the use of ecological sites associated with the soil survey maps. (Recommendation 1-2, page 4, October 2006). These recommendations were used in the analysis as noted above.

Comment: In the SRT report, SRT Issue I-1 states:

> ***SRT Issue I - 1:*** *Data utilized to estimate livestock carrying capacities, varying wildlife habitat traits, etc. (i.e., Little Missouri National Grasslands rangeland assessment, also referred to as, Dragon data) lacks the required level of resolution needed to develop, implement, and monitor individual pasture AMPs.*

The SRT was telling the FS that its Dragon Data was not appropriate to use to develop AMPs. The SRT recommendation to I-1 is as follows:

> ***SRT Recommendation I - 1****: The NRCS has completed Order 2 (five acre accuracy for dissimilar soils) soil surveys for all portions of the DPGs. Therefore, the SRT recommends using these maps and associated ecological site information in the development, implementation, monitoring, and refinement of pasture or allotment-level management plans.*

The DPG response to the SRT recommendation is as follows:

> ***DPG Response Issue I-1****:The Little Missouri National Grasslands Rangeland Assessment potential vegetation maps used "habitat types" as the basic vegetative mapping unit. Habitat types are delineated based on soils, topography and other attributes. Habitat types identify the vegetation a particular unit of land can support, regardless of current vegetation. Existing vegetation was mapped using Satellite Image Cover classification, aerial photographs, and on-the-ground sampling. Habitat types are commonly used as basic vegetative mapping units on the more than 190,000,000 acres managed by the Forest Service, nationwide.*
>
> *We will work with the NRCS to incorporate the ecological site methodology and our existing habitat type mapping, to refine production values for each vegetation type, so carrying capacities are as accurate as possible for each allotment.*

The FS used virtually all of the NRCS protocol to determine initial stocking. The FS habitat types were not used in this determination as stated in the DPG final response to the SRT.
RESPONSE: See Response to Comment C-3.92. The commentor is correct that the SDEIS did not use Forest Service habitat type information in its carrying capacity analysis.

C-3.96 – In the SDEIS, Chapter 3, Part 1, Methodology, b. MGA recommendation, page 89, it states:

- The NRCS ecological site description production information was applied to a standard carrying capacity equation (noted above) that has been used for years and is taught in standard range management textbooks.
- The carrying capacity equation expressed in AUMs is: (area in acres)(herbage production per acre)(0.25) / 913 pounds/AUM. Applying the equation to a hypothetical 100 acre pasture that produces an average of 1,400 pounds of herbaceous forage per acre gives us: 100 acres x 1400 pounds/acre = 140,000 pounds x 0.25 = 35,000 pounds / 913 pounds/AUM = 38.3 AUMs.
- Initial estimated carrying capacity was calculated by multiplying the total production for a given polygon by 0.25 (harvest efficiency) and then dividing by 913 (the number of pounds of forage, air dried, to maintain a 1000 pound cow with or without calf for one month).
- An assumption made in this calculation is seasonlong grazing, which could weight the formula towards *a lighter carrying capacity.*

Comment: The "carrying capacity equation" mentioned above is really the "stocking rate equation" and is shown in the NRCS National Range and Pasture Handbook under the section labeled "Stocking rate Calculation."
RESPONSE: The definition of carrying capacity and stocking rate are found in the SDEIS Glossary (Volume 3 Glossary, pages 3 and 24). The difference is that a stocking rate defines the actual number of animals, expressed in either animal units or animal unit months, on a specific area for a specific time, whereas carrying capacity does not specify the amount of time, and takes into consideration management goals for the unit. The Forest Service in the SDEIS has not defined the actual number of animals on a specific area for a specific time.

C-3.96a – The FS uses a 25% harvest efficiency because that is what the NRCS proposes in its National Range and Pasture Handbook. As stated above in the last bullet point, an assumption made in this calculation is season long grazing, which could weight the formula towards *a lighter carrying capacity.*

In the project area, many of the Allotments are using grazing systems that have many benefits including the ability to use higher harvest efficiencies. Many of the allotments also have crested pastures that can have higher stocking rates than the native ranges because of increased production. The MGA and the FS contracted with NDSU (Dr. Kevin Sedivec) and jointly paid for a baseline assessment and data set for the North Billings Project initiated in 2007 and data collection beginning in 2008. Dr. Sedivec recently collaborated with 11 other authors and published the following article in SRM's Rangeland Ecology & Management, 63(4) July 2010, P. 397-406: Effects of Grazing Pressure of Grazing on North American Great Plains Rangelands, Smart, et al. A brief summary of the article as it pertains to harvest efficiencies is as follows:

- Grazing efficiency increases from low grazing pressure to high grazing pressure or high forage allowance to low forage allowance without additional loss of vegetative cover. The most likely explanation for improved grazing efficiency is a reduction in

the amount of senescent and weathered vegetation, the improved dietary needs and selection of plants by livestock. Grazing and harvest efficiencies exhibit a linear increase with grazing pressure. Harvest and grazing efficiencies increased at high grazing pressures and decreased at low grazing pressure. Harvest efficiencies of up to 42% can be used without having a detrimental effect or additional loss of overall total cover (Smart, et al, July 2010).

Dr. Sedivec has stated that when a grazing system is in place a higher harvest efficiency (HE) may be appropriate (□ 25%). NRCS recommends using a 25% (HE) when calculating initial stocking rates. This is to establish a minimum value and prevent any overgrazing upon implementing the initial stocking rates. After the NRCS has implemented its initial stocking rate then it can be adjusted based on observation and monitoring. It is generally agreed that there is no substitute for experience in stocking-rate decisions on specific ranges (Holechek et al. 1999). The MGA has over 70 years of experience on the Little Missouri National Grassland and should be implementing a range of harvest efficiencies in the project area based on the complexity of the grazing system being used in each allotment. Stocking rates for crested wheatgrass pastures should be based on the "MRLA 54 Forage Suitability Groups, AUMs per Acre" chart. According to Smart, *et al*, 2010, grazing and harvest efficiencies can be increased without having a detrimental effect or additional loss of overall total cover. Grassland Plan objectives can be met using a variety of HE will continue to maintain good rangeland health and accurately reflect the HE.

RESPONSE: The Carrying Capacity analysis was utilized as a starting point to base Authorized Use levels proposed for Alternative 4 when resource issues were identified; with monitoring, adjustments can be made in the future. Grazing systems utilized under current management have not met Grasslands Plan objectives as is evidenced by the purpose and need for the North Billings project (SDEIS Volume I Chapter 1, page 11).

C-3.97 – In the SDEIS, Chapter 3, Part 1, Methodology, b. MGA recommendation, page 89, it states:

- After the completion of the DEIS, new production information was released by the NRCS soil survey.
- Tables and discussion have been updated in the SDEIS to show the results of the new information, which to date are based on the best available information.

Comment: The FS might have updated the SDEIS with new production information, but failed to use the best available information when they excluded Dr. Sedivec's work on harvest efficiencies.

RESPONSE: See Response to Comment C-1.5.

C-3.98 – In the SDEIS, Chapter 3, Part 1, Cooperative Monitoring Data, pages 89-90, it states:

- Monitoring data for 2008 and 2009 have recently been provided to the Forest Service. During these years data were collected in 34 of the allotments in this project. Data collection for the nine remaining allotments in the project will continue in 2010;

however, it will not be available before this analysis is completed. Methodologies for this data collection effort have been supplied by NDSU and are included in the Supporting Documentation- Range section of the Project Record. The new data were reviewed by the IDT and are addressed in the analysis under the appropriate resource sections.

Comment: Baseline monitoring data for 2009 were recently sent to the FS and MGA in August of 2011. How could the FS have used this data as stated above having only recently receiving it in August, a month after publication of the SDEIS?
RESPONSE: Cooperative monitoring data collected in 2009 was received from NDSU on July 12, 2010 when a meeting was held to review the data collection effort. Representatives from NDSU, MGA, and the Forest Service were present at this meeting.

C-3.99 – In the SDEIS, Chapter 3, Part 1, Cooperative Monitoring Data, pp. 89-92, it states:

- MLRA 58C makes up the majority (69 percent) ofthe project area. Currently, much of this MLRA in the project area has not been assigned an ecological site by the NRCS. However, for those areas in MLRA 58C that are classified in the project area, the dominant ecological sites by acreage are Thin Loamy and Loamy. The 2008 and 2009 data (42 plots) show the two most sampled ecological sites to be Claypan and Thin Claypan. Because of the limited amount of samples taken from Thin Loamy and Loamy ecological sites to date, the data set is not representative of MLRA 58C located in the project area. *Therefore, the current production information from this sample set is not representative of the dominant ecological sites in the project area and therefore was not used in the analysis of carrying capacity.*
- According to the NRCS Soil Survey, by acreage MLRA 54 is dominated by Loamy and Claypan ecological sites in the project area. The 2008 and 2009 data (52 plots) shows that most of the sampled plots occurred on the two dominant ecological sites. *Overall, however, the data set is not currently complete enough to be representative of MLRA 54 and therefore was not used in the analysis of carrying capacity.*
- The primary concern at this point is that neither MLRA 54 nor 58C has a sufficient number of sampled plots needed to represent the project area.
- Once all of the sample plots for the project area have been completed, a review of the data set would be conducted. If significant differences were found between the NRCS RV production value and the biomass data set, additional calculations of the carrying capacity analysis would occur incorporating the biomass data set into the analysis.

RESPONSE: If adjustments in Authorized Use are necessary based on the carrying capacity analysis, they will still be driven by the need to work towards Grasslands Plan goals and objectives.

Comment: After the FS goes through a lengthy explanation as to why the Cooperative Monitoring Data were not used in the analysis of carrying capacity, they then state that it really doesn't make any difference. “If adjustments in Authorized Use are necessary based on the carrying capacity analysis, they will still be driven by the need to work towards Grasslands Plan

goals and objectives." The FS will not really make any adjustments back to restoring Authorized Use if the data support doing so. They will still be "driven" to work towards Grassland Plan goals and objectives. This was demonstrated in the four (4) allotments that had an initial stocking determination that was higher than preference; the FS set the Authorized Use at preference because they wanted to keep any "extra grass" for wildlife objectives.

The FS needs to identify where the data show it is justified in drawing its conclusions, and not always take for the sake of achieving more than is needed in the Grasslands Plan.
RESPONSE: See Response to Comments C-3.29 and C-1.5.

C-3.100 – In the SDEIS, Chapter 3, Part 1, Livestock Weight Adjustment, page 92, it states:

- One of the SRT recommendations (V-2) was to *"Redefine the Animal Unit to reflect current cow size along with older, larger calves and recalculate the corresponding authorized livestock numbers on allotment."*

Comment: The *SRT Issue V-2: The current management plan fails to adequately account for changes in animal unit forage demands with changes in cow/calf size.*

The SRT states:

- The bottom line is obvious. There are more "Animal Units" on the DPG than "preference" numbers originally indicated was an appropriate stocking rate. All future management plans must acknowledge the increase in cow and calf size and the subsequent forage demands of larger, higher-producing cows and older, larger calves. Regardless of the techniques used to evaluate the grasslands or the data reported by all sides on the issue, the fact remains that somewhere between 14 and 20 percent more cattle AUs graze the grasslands than did 40 years ago simply because of increased body size. Whether management strategies have kept pace remains to be seen.

SRT Recommendation V - 2: *Redefine the Animal Unit to reflect current cow size along with older, larger calves and recalculate the corresponding authorized livestock numbers on allotments.*

The DPG final response to the SRT was:

- In response to the SRT's concerns, we will calculate grazing levels based on animal unit equivalents as described above to display the amount of forage consumed by livestock. ***We will work with the Grazing Associations and permittees to assess cow size for individual allotments.*** We will consider these data, along with data on current livestock numbers, and local forage production. *Decisions on whether or not permitted numbers need to be revised will be made based on an assessment of whether or not existing conditions are meeting or moving toward meeting the Grasslands Plan goals and objectives.*

The FS *has not* worked with the Grazing Associations and members to assess cow size for individual allotments. They have done exactly the opposite. The FS had developed "Appendix C" in the Grasslands Plan. Appendix C is labeled – Determining Animal Unit Equivalent Based on Livestock Weight. It gives several methods to determine animal unit equivalents based livestock weight. MGA gave the FS additional issues to address when setting cow size. See MGA letter April 23, 2010. The FS ignored the issues of cow size variances and continues to use sale weight.

The FS has taken the stand that all members on the DPG have 1200 lb. cows. They then use a conversion factor of 1.15 animal unit equivalent to convert AM's to AUMs based on the 1200 lb. cow.

RESPONSE: The tool Adjust AUMs based on average cow size is one of several tools proposed within the Grazing Management Toolbox to address identified resource concerns. See Response to Comment C-3.39.

C-3.101 – In the SDEIS, Chapter 3, Part 1, Livestock Weight Adjustment, page 92, it states:

- A discussion of cow size was held at the January 2007 MGA board meeting to address the SRT recommendation. Range staff from the Medora District reviewed how other Forest Service districts were addressing this issue; provided information from the Dickinson Research and Extension Center's Cow Herd Appraisal Performance Software (CHAPS) program, which contains cow weights by area; and shared how this would be treated as a tool in the grazing management toolbox. Upon being asked what the MGA Board of Directors felt was the average cow size in their grazing association, a range of 1,100 to 1,300 pounds, with the median being 1,200 pounds, was provided (Project Record, Correspondence Permittee).

Comment: In comment #99 above, the FS stated - *We will work with the Grazing Associations and permittees to assess cow size for individual allotments*. They now say that at the January 2007 MGA board meeting the MGA Board of Directors felt was the average cow size in their grazing association, a range of 1,100 to 1,300 pounds, with the median being 1,200 pounds, was provided.

MGA Board of Directors never stated they felt was the average cow size in their grazing association, a range of 1,100 to 1,300 pounds, with the median being 1,200 pounds, or agreed with the FS on cow size. The minutes from the Board meeting pertaining to the discussion on cow size are as follows:

- Adjustment for Cattle Size: was discussed by the Board and USFS. The Record of Decision for the LRMP – DPG, states that the USFA will follow the SRT recommendations. The USFS stated that one of the SRT's recommendations was to adjust stocking rates on allotments to allow for the increase in cattle weight. (Currently, stocking rates are figured at all cows weighing 1,000 pounds which equals 1 animal unit.

- The USFS then stated that when the new AMPs are written and presented to permittees, a cow will be changed to equal 1.15 units, as they are figuring the average cow now weighs 1100-1300 pounds.
- **Please Note: re-figuring a cow to equal 1.15 unit's amounts to at least a 13% permanent reduction in your preference.**
- Yearlings would be figured at .885 units instead of .75, bulls would be figured according to their weight (at least 2-4 units each), and they haven't even gotten started on the weight of the calves. The USFA stated that they are basing this recalculation on the metabolic rate which states that for every 100 pounds heavier (than 1000 pounds) that a cow is, they eat 7.8% more forage. (See enclosed handout that explains Metabolic Weight, from the Dickinson Research Extension Center).
- *If a producer does not believe that their cow weigh this much. they would have to be able to prove it to the USFS before stocking rate would remain as it currently figured.*
- However, the USFS stated that they will try to avoid this reduction first by rotation changes and other methods. Considering all that is being done to reduce livestock, we (MGA) question this.
- This 13% reduction would be in addition to any reductions imposed by the USFS for "bighorn sheep habitat", "high structure", special management areas (SIAs and RNAs), "sensitive species", using a 20 year average of the AUMs used rather that the preference for every allotment, and all the other "management prescriptions" they've included in the plan.

The FS misrepresents what occurred at the January 2007 Board meeting. The only thing the Board did was question why. On page 3-11 of the DEIS, it states:

- After discussion of the three methods of calculation, the MGA Board of Directors chose method number 3, a metabolic weight formula, utilizing the 1,200 pound size of a cow if this tool would be applied in the AMP.

Obviously with the way the minutes are written, the Board did not agree. The FS did nothing to "try to avoid this reduction first by rotation changes and other methods." The FS has stated throughout the SDEIS they do not believe rotation accounts for any benefits to meeting Grassland Objectives.
RESPONSE: The Forest Service stands by what has been discussed in the referenced pages of the SDEIS. Without further documentation provided by the MGA, the Forest Service utilized the best available information to address the recommendation from the SRT (Report of the SRT, 2005, SRT Recommendation V-2).

Also, the FS made a decision in January 2007 that is now part of Alternative 4:

- The USFS then stated that when the new AMPs are written and presented to permittees, a cow will be changed to equal 1.15 units, as they are figuring the average cow now weighs 1100-1300 pounds.

This seems "pre-decisional" on the part of the decision maker.

The SDEIS is a project specific document relating to 43 individual allotments. The FS said they would work with the Grazing Association and members to assess cow size for individual allotments. Since they did not do that and then applied a generic one size fits all cows to every allotment, MGA doesn't feel the FS should implement the cow size reduction until they gather data from each member specific to each allotment as they said they would in the final response to the SRT.

The MGA 2009 Grazing Agreement defines cow/calf month or animal unit month is the measurement of forage that a typical cow with her calf will consume in one month's time of grazing. The FS goes on to explain:

Yearling	0.75 AUM
Bull	1.5 AUMs*
Horse	1.5 AUMs
Sheep/goat	0.2 AUMs
Ewe/lamb Nanny/kid	0.3 AUMs

*Breeding bulls will be figured as one AUM.

The FS definitions above on livestock size do not match what they put into the current Grazing Agreement just 2 years ago. The same FS people who worked on the 2009 Grazing Agreement are working on the SDEIS. Given this fact, MGA wonders why the SDEIS uses a higher weight. This brings into question the objectivity of the FS.
RESPONSE: Both an AUM and animal unit are defined in the 2009 grazing agreement (II. General Agreement, A. Terms Defined, 21. and 22., page 7). Specifically, an animal unit is considered to be one mature (1000-pound) cow, with or without calf up to six months of age on the date the cattle are placed on NFS lands, or the equivalent. The SDEIS definitions for these terms are nearly the same. The SDEIS in Alternative 4 and the Adjusted AUMs based on average cow size tool propose to apply animal unit equivalents if the average cow size is not 1,000 pounds as the definitions indicate.

C-3.102 – In the SDEIS, Chapter 3, Part 1, Affected Environment- Range- Actual Use, pages 94-95, it states:

- In lieu of actual use, the interdisciplinary team used the 3-year (2005 - 2007) average MGA permitted use and/or AOIs as was provided by the grazing association to compare to the Authorized Use under the different alternatives. The 3-year average MGA permitted use is information taken from grazing association grazing permits, which are completed prior to tum out. The AOIs/Allotment worksheets were used to help describe how an allotment is managed under current management, as far as rotation and type/class of livestock. As noted before, the AOIs and the information they contain are completed in the winter or early spring by the permittee before turn-out. They represent the permittees “best guess” at that point in time as to the number of animals they'll run, rotations, etc., in the coming grazing season. In lieu of actual use, this is the best information available to use in the analysis.

- This information will be used in the analysis to evaluate the effects of past grazing systems and whether or not trends would likely increase, decrease, or stay the same based on the alternatives and the comparison to the 3-year average MGA permitted use from the grazing association grazing permits, as well as Preference. *It is important to note that 1 of the 3 years in the average was a drought year in which mandatory grazing reductions were implemented.* This information is provided strictly for comparison purposes to more sharply define differences between the alternatives.

Comment: The FS is incorrect in stating 1 of the 3 years in the average was a drought year. 2005 was not a drought year, but had a mandatory 20% reduction across the board for all members because 2004 was a severe drought year. 2006 was a moderate drought year, and 2007 was a severe drought year. The FS uses a 3 year average in which one year had a mandatory 20 reduction (2005), one year was a moderate drought, and the last year was classified as a severe drought year.

In March of 2011, Forest Service Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops:

- The FS will not use a drought year as the basis for any analysis.

The FS needs to correct their analysis to exclude the drought years.

Even though the FS states that the 3year average is for information only and is provided strictly for comparison purposes, they do so only to minimize the effect of the reductions. In Table 3.4 – Comparison of alternatives to 3year average MGA summer permitted use, the FS compares their Preferred Alternative (Alternative 4) to the 3year average to show the percentage differences, or reduction in AUMs. This is done instead of comparing to preference numbers for Alternatives 2, 3, and 3A. MGA is sure how this **"more sharply define differences between the alternatives"** as specified by the FS.

The FS goes further in its efforts to convince its readers that the reductions aren't significant with the following paragraph from page 97:

- The above comparison indicates that Authorized Use under Alternative 2 and initial actions under Alternatives 3 and 3A would result in Authorized Use ranging from 1 to 109 percent above the 3-year average, with the exception of Allotment 140 (see above footnote). When compared to the 3-year average, Alternative 4 would result in a reduction in Authorized Use on 27 allotments ranging from 1 to 45 percent; 13 allotments would see an increase in AUMs; one allotment would remain unchanged; and one allotment would be hayed.

It is obvious that this table is of little use when it comes to quantifying reductions being faced by the MGA.

RESPONSE: See Response to Comment C-1.3. However, the commentor is correct that reductions made in 2005 were because of the previous year's climatic conditions including up to May of 2005.

The SDEIS provided tables displaying a comparison of alternatives to both the 3-year average MGA summer permitted use and to Preference (see Volume I Chapter 3, Tables 3.4 and 3.5 pages 96 - 99).

C-3.103 – In the SDEIS, Chapter 3, Part 1, Affected Environment- Range- Actual Use, pp. 98-99, it states:

- Table 3.5 provides a comparison of Authorized Use by Alternative to Preference. For comparison purposes Authorized Use under Alternatives 2, 3, and 3A and Preference have been converted to AUMs in the same manner as discussed above Table 3.4, When compared to Preference, Alternative 2 and the initial actions under Alternatives 3 and 3A show the range in percent reduction in Authorized Use is zero for all allotments. Alternative 4 shows that all allotments, except for two that were meeting Grasslands Plan objectives, would see Authorized Use reductions ranging from 1 to 44 percent, when compared to Preference. Excluding the two allotments for which no reductions are proposed, the average reduction for allotments that would see a change is approximately 20 percent.

Comment: Even though the FS says the conversion was done for comparison purposes, what the FS actually has done with this conversion is adjust all reductions in Alternative 4 for cow size. The FS could have made the assumption an AM was equal to a 1000 lb. cow AUM. But since the FS wants to adjust everyone for cow size they multiplied the AMs by 1.15.

The FS states that the adjustment for cow size in some cases will likely result in an over or under estimation, but, again, this is done for comparison purposes. The adjustment for cow size is not based on any actual data obtained from the North Billings Project. It is the FS assumption that all cows on the DPGs are larger than they were in previous years. The FS doesn't know if they have to adjust for cow size based on their data. The FS is just adjusting for cow size.

The FS should not be adjusting for cow size until they define when a cow should be weighed, and show that an adjustment for cow size is really needed. The weight of a pregnant cow is different from a lactating cow and is different from a cow without calf. So when is the weight of a cow supposed to be taken? Based on when the cow is weighed, the data can be manipulated to skew the facts. Grand River used feedlot weights taken in November after the livestock left the Grasslands.

See Comment #39 and #88.

Parts of Table 3.5 are also shown in Table 2.12 and are also shown in Table S.10 on pp. xxix and XXX.

RESPONSE: See Response to Comments C-3.39, C-3.88, and C-3.101.

C-3.104 – In the SDEIS, Chapter 3, Part 1, Affected Environment – Range – Infrastructure, page 100, it states:

- Due to age, lack of maintenance, location, and sedimentation, many of the reservoirs and dugouts are only 2 to 4 feet in depth.

- Many of the spring developments in the project area produce only enough water to supply a small number of livestock. Others have been poorly maintained and are in need of repair to continue to function properly.

- Artesian wells and windmills also provide livestock water in the area. These water sources can be unreliable due to falling head pressures, fluctuation in aquifer levels (North Dakota State Water Commission 2007), or lack of wind. As a result, it can be difficult to balance a grazing rotation for proper use and timing. Indirectly, this can cause livestock to hang out along riparian areas within the project area.

Comment: The FS deliberately denigrates the condition of the range water improvements so that it seems that they could not sustain livestock grazing any longer. According to the FS records, many of the water improvements are long past their useful life expectancy and yet the FS doesn't present a plan to replace or reconstruct these devastated improvements. Where has the FS been in the past allowing these improvements to deteriorate to this level of disrepair? The District Ranger has resisted repair proposals preferring to implement a "not net increase" or decrease in such structures.
RESPONSE: The SDEIS is merely describing the existing condition of the range infrastructure. The 2009 grazing agreement outlines what the grazing association is responsible for pertaining to improvements (II. General Agreement, E. The Association Will, 4.). See also Response to Comment C-1.22.

C-3.105 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Direct and Indirect Effects, Alternative 2, page 101, it states:

- Livestock and the associated permit management would continue to be vectors for the spread of noxious weeds.

Comment: It is well documented that birds, wind, wildlife and people are the principle "vectors" in the spread of noxious weeds. Livestock digestive systems digest seeds much better than birds. MGA isn't too sure how "associated permit management" would continue to be a vector for the spread of noxious weeds.
RESPONSE: The Forest Service doesn't disagree with the commentor; however, the referenced section of the SDEIS is dealing with the direct and indirect effects of range management, i.e. livestock and the management of the livestock. One example of associated permit management would be the practice of feed supplementation on NFS lands that may contain noxious weeds or weed seeds. Other vectors of invasive plants are discussed under Cumulative Effects in the SDEIS (Volume I Chapter 3, pages 76 - 84) and the Botany specialist report (pages 75 - 78).

C-3.106 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Direct and Indirect Effects, Alternative 2, page 102, it states:

- Under this alternative, Authorized Use would be set at Preference (Table 3.6), which is expressed as AMs. A cow/calf pair under this alternative would continue to be treated as one AM, regardless of the weight of the cow or its forage requirements. The number of AMs authorized would be similar to the currently permitted 29,125 AMs based on conditions.

Comment: Preference in Table 3.6 is set at 29,125 AMs. Preference in Exhibit E, of the 2009 Grazing Agreement is set at 29,546 AUMs. There are 12 allotments with differing preference numbers between Table 3.6 and Exhibit E.
RESPONSE: The Forest Service created Table 3.6 based on NFS land information in the grazing association permits that were provided by the MGA (Project Record, Supporting Documentation – Range, L-12). Differences in AMs is explained by the disclaimer provided at the top of Exhibit E of the 2009 grazing agreement that states, "Information taken from latest permits within 2230 files before the land record was redacted. As of 3/7/2007 some records have been updated based on MGA board action since 2007. Not all land records have been updated when several commons were broken into private allocations in the '80s." Therefore, the grazing association permits provided by the MGA may not reflect the most accurate percentage of NFS lands within the allotment.

C-3.107 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Direct and Indirect Effects, Alternative 2, page 103, it states:

- Periods of drought would have a direct effect on the available forage for the project area. When reduced precipitation occurs during the growing season (April through July), it has a major impact on the production of forage (Heitschmidt et al. 1995). Less available forage results in the utilization level of 50 percent to be reached earlier in the grazing season. The end result is a decrease in the annual AMs authorized for that year. To extend the grazing season, the number of animals can be reduced, the class of livestock can be changed, or calves can be weaned early.

Comment: Why wouldn't the DPG Drought Strategy, when it becomes final, be implemented here?
RESPONSE: The DPG Drought Strategy will be implemented during periods of drought under current management. However, at the time of the issuance of the document, there was no formalized drought strategy; therefore the SDEIS discusses the expected direct effects of drought on range management at the time of its issuance. See also Response to Comment C-3.19.

C-3.108 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Direct and Indirect Effects, Alternative 3, page 103, it states:

- This is an adaptive-management-based alternative and if monitoring shows that additional management actions are needed, then adjustments in Authorized Use may

be required. Adjusting Authorized Use downward would result in fewer livestock numbers, fewer grazing days, or a combination of the two for a tum-in permit. For an inventory permit, adjusting Authorized Use downward would result solely in fewer livestock numbers. Adjusting Authorized Use, regardless of the type of permit, would not change the distribution of the livestock; however, the amount of forage harvested would be less than the existing forage harvested.

Comment: MGA finds it interesting that when the FS mentions "adaptive-management" it refers to adjustments in authorized use from the list of tools in the tool box. The FS would like to keep adjustments in AUMs in the tool box to be able to make permanent reductions in AUMs without long term monitoring. As noted in 2009 comments, the SDEIS only partially implements adaptive management, thus missing the concept. This is also why the tool box does not need to contain the following management actions because they can be handled in the AOIs on an annual basis:

The tools that should not be included in the tool box are:

- Adjust AUMs (stocking rate) by# of head &/or# of days.
- Adjust AUMs based on average cow size.
- Adjust season of use.
- Allow early turnout on native pastures one out of 3 years on inventory permits.
- Defer native pastures until June I, or until development of the three-and-a-half leaf stage for key graminoid species.
- Implement DPG drought management strategy.
- Incorporate a range rider to disperse livestock throughout a pasture (herding).
- Maintain existing developments to reestablish use.
- Manage salt and supplement locations.
- Manage water availability/access at water developments.
- Utilize non-native grass pastures early to defer grazing on native grasses.

RESPONSE: See Response to Comments C-3.18, , and C-3.54.

C-3.109 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences- Range- Direct and Indirect Effects, Alternative 3A, page 103, it states:

- The effects of this alternative are the same as Alternative 3, except for the number of proposed range developments and their associated costs, which are 58 and $646,826 respectively.

Comment: The FS needs to correct the "58" into a dollar figure.
RESPONSE: The "58" is referring to the number of proposed range developments, not a dollar figure.

C-3.110 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Direct and Indirect Effects, Alternative 4, pp. 103-104, it states:

- Authorized Use is set based on initial estimated carrying capacity for those allotments where Preference is greater than the initial estimated carrying capacity. For the four allotments where this was not the case, Authorized Use was set by

adjusting Preference for cow size. Two allotments, 132A and 248, are authorized Preference since they are meeting resource objectives. Authorized Use for this alternative is identified in Table 3.7.

Comment: Authorized use is not set on initial carrying capacity. It is set on initial stocking rate. Initial stocking rate (ISR) is used where preference is greater than ISR. Even the four (4) allotments where preference was below ISR, they received a reduction for cow size. The FS states that two allotments 132A and 248 were authorized at Preference since they are meeting objectives.

Allotments #132A and #248 were authorized at preference

- Allotment #132A = 176 AM's Preference or 202 AUMs when converting to AUMs adjusting for cow size (see Table 3.5)
- Allotment #248 = 312 AM's Preference or 359 AUMs when converting to AUMs adjusting for cow size. (see Table 3.5)

Allotments #129, #131, #135, and #282 were authorized by adjusting for cow size even though their initial stocking rate was greater than preference.

- Allotment #129 ISR was 1519 AUMs. However, #129 was penalized for not meeting objectives and held at 1090 AUMs. Allotment #129 didn't even get Preference adjusted for cow size which was 1254 AUMs, which was well below the ISR of 1519 AUMs.
- Allotment #131 ISR was 530 AUMs. However, #131 was penalized for not meeting objectives and held at 273 AUMs. Allotment #131 didn't even get Preference adjusted for cow size which was 314 AUMs, which would have been well below the ISR of 530 AUMs.
- Allotment #135 ISR was 2147 AUMs. However, #135 was penalized for not meeting objectives and held at 1559 AUMs. Allotment #135 didn't even get Preference adjusted for cow size which was 1793 AUMs, which was well below the ISR of2147 AUMs.
- Allotment #282 ISR was 2859 AUMs. However, #282 was penalized for not meeting objectives and held at 2123 AUMs. Allotment #135 didn't even get Preference adjusted for cow size which was 2441 AUMs, which was well below the ISR of 2859 AUMs.

The FS should grant allotments #129, #131, #135, and #282 more than their preference adjusted for cow size, especially since their ISRs range from 26% to 50% of their preference adjusted for cow size.

RESPONSE: See Response to Comments C-3.92, C-3.93, C-3.93a, C-3.94 and C-3.29.

C-3.111 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Past and Present Actions, page 105, it states:

- *Livestock grazing* has occupied what is now the LMNG since the late 1880s. During the early decades, livestock stocking rates were dictated more by how many cattle a

person had than by what the range was capable of supporting. *This led to overgrazing. which helped precipitate the dust bowl era of the 1930s*. The development and application of grazing systems and stocking guidelines has reversed many of the effects associated with overgrazing. Fortunately, the range has since recovered.

Comment: MGA is sure that there were many issues that lead to the dust bowl era of the 1930s. The principal issue was prolonged period with no precipitation, a drought and widespread cultivation on the 160 acre plots and allowed for homesteading after 1926. Whether overgrazing came before or after the drought is up for debate. But it is doubtful that overgrazing caused the lack of moisture and historical accounts rarely, if ever, attribute the Dust Bowl era to livestock grazing. It is statements like this that clearly disclose the bias that infuses the SDEIS.
RESPONSE: The SDEIS does not purport that overgrazing itself caused the dust bowl era of the 1930s, it states, "…which helped precipitate…" (SDEIS Volume I Chapter 3, page 105). This section of the SDEIS is trying to display to the public the cumulative effects of past, present and reasonably foreseeable actions one of which is livestock grazing.

C-3.112 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Range – Cumulative Effects by Alternative, Alternative 1, page 107, it states:

- The Elkhorn Ranchlands Grasslands Plan amendment may offer forage for a limited amount of livestock for a temporary time, but would offer no long-term opportunity for the permittees in the project area.

Comment: Since the Elkhorn Ranchlands Grasslands Plan amendment is not complete and not executed, MGA believes it is not appropriate to say the Elkhorn Ranch may offer forage for a limited amount of livestock. This should not have been included in the SDEIS. As noted above, the FS alternative violates the terms pursuant to which Congress agreed to fund the purchase of the Elkhorn Ranch.
RESPONSE: The Forest Service agrees with the commentor about the reference in the cumulative effects and has removed the statement in the Errata. While the Elkhorn Ranchlands Grasslands Plan amendment will determine what types of uses will occur on the acquired lands, the decision has not yet occurred. The commentor's reference to the Forest Service alternative is beyond the scope of the North Billings project analysis as these acres are included in allotments outside of the project area.

C-3.113 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences- Range Cumulative Effects by Alternative, Alternative 3 and 3A, page 107, it states:

- Authorized Use would initially remain at Preference.

Comment: The way this is written would lead a person to believe authorized use would not stay at preference very long. MGA believes the FS will take "adaptive management" action as soon as possible if Alternative 3 or 3A is picked.
RESPONSE: Please refer to the Monitoring and Trigger Points discussion in the SDEIS (Volume I Chapter 2, pages 53 - 61).

C-3.114 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences- Range Cumulative Effects by Alternative, Adaptive Management, pp. 107-108, it states:

- *Adaptive Management.* Alternatives 3, 3A, and 4 are all adaptive-management-based alternatives. If monitoring shows that initial actions are not making acceptable progress towards desired conditions, management adjustments would be needed. *Determining the cumulative effects of an array of different adaptive management actions on Authorized Use. livestock distribution. and costs is not possible at this point because the application of the different management tools would be allotment specific.*

Comment: Unless the cumulative effects can be displayed on the "Adaptive Management Actions," they should be taken out of the SDEIS. Because it is difficult doesn't excuse the FS from having to show cumulative effects. Either show the effects or take it out of the document.

The other alternative is when the cumulative effects are known when application of the different management tools for each allotment occurs, then NEPA action would be required to show the cumulative effects at that point.

The NEPA rules do not excuse a federal agency from accumulative effects analysis merely because it is difficult. The SDEIS violates NEPA due to its admittedly incomplete analysis.
RESPONSE: Cumulative effects under each adaptive option are addressed under each section titled Adaptive Options under Effects of Alternatives. It includes a discussion of what each "option" would have on each specific resource area. This can be found under each Allotment section in the SDEIS Volume II, Affected Environment and Environmental Consequences by Allotment. This provides a very extensive analysis for each prescribed option.

CEQ regulations (40 CFR §1508.7) require all NEPA analyses to consider cumulative impacts of the proposed actions related to other activities. Those past, present, and reasonably foreseeable actions are described in SDEIS Volume I Chapter 3, pages 78 - 86 and summarized in Table 3.2. These effects are carried forward throughout each resource area under the heading "Cumulative Effects."

C-3.115 – In the SDEIS, Chapter 3, Part 1, Consistency with Grasslands Plan- Range - page108, it states:

- *Under Alternative 2, areas affected by livestock concentrations would continue except in those situations where the Forest Service becomes aware of adverse impacts associated with livestock concentrations in riparian and woody draw areas.*

Comment: MGA believes that the FS already knows of those situations mentioned above because of the work already done in the project area. Thus, Alternative 2 would not result in these impacts continuing.
RESPONSE: Alternative 2 would continue current management thus maintaining the status quo for resource concerns. The Forest Service has a responsibility to address known areas

of resource damage, and has and will continue to address these types of impacts as they arise regardless of the alternative selected. Outside of resource damage, other impacts to riparian and woody draw areas would continue under current management because there would be no proposed changes to the management that got these resources to their existing condition.

C-3.116 – In the SDEIS, Chapter 3, Part 1, Consistency with Grasslands Plan- Range- page 109, it states:

- *Alternative 4 would account for livestock weight in the determination of the Authorized Use. If monitoring indicated that additional adjustments for livestock weight were needed, this would be accomplished as an adaptive action.*

Comment: The FS did not conduct any monitoring when they accounted for cow size in Alternative 4. The FS included it in Alternative 4 for comparison purposes only. The FS probably won't conduct any monitoring in the future on livestock weight, and should take no action without adequate monitoring.
RESPONSE: See Response to Comments C-3.39 and C-3.101.

C-3.117 – In the SDEIS, Chapter 3, Part 1, Consistency with Grasslands Plan – Range - page 109, it states:

- Prioritize and remove fences or water developments that are not contributing to achievement of desired conditions. **Guideline**

Comment: The Demonstration Project states that livestock grazing is an objective and needs to be considered in the above guideline when removing fences and water developments. The FS cannot consider wildlife only in this guideline.
RESPONSE: The SDEIS is not considering wildlife, but range management and how it is consistent with this particular guideline per alternative (see the text after the guideline SDEIS Volume I Chapter 3, page 109).

C-3.118 – In the SDEIS, Chapter 3, Part 1, Consistency with Grasslands Plan – Range – page 109, it states:

- Manage grazing units that are composed of at least 70% crested wheatgrass *(Agropyroncristatum)* as crested wheatgrass units. Manage other pastures not meeting this definition as native grass units. **Guideline**
- *Under Alternatives 3, 3A, and 4, crested wheatgrass pastures, to the extent possible, would be managed as early season pastures to defer use on native pastures as identified in the design criteria located in Chapter 2.*

Comment: The FS identifies crested pastures as composed of at least 70% crested wheatgrass. The FS never discusses the pastures that are composed of 30% to 70% crested wheatgrass. What happens to those areas? By definition, they would be managed as native pastures, which puts them in a nonuse status, because they would never get used when grazed only after June 15.

RESPONSE: The commentor is correct that pastures with less than 70 percent crested wheatgrass would be treated as native pastures. However, there are other tools identified in the Grazing Management Toolbox (SDEIS Volume III, Appendix D) that can address these situations such as construct and/or remove fences, implement prescribed burns, and manage salt and supplement locations to name a few tools that would distribute livestock use around the pasture.

C-3.118a The FS doesn't disclose how much crested wheatgrass is in the project area or when they plan to inventory it. Without knowing the resources available it is difficult to count on those areas for structure or forage. The FS has not disclosed all the resources available in the existing situation for any of the alternatives.
RESPONSE: Broken land and areas with high amounts of invasive grasses are depicted in maps in Appendix A of the Botany specialist report. Broken land/crested wheatgrass comprises about 8,600 acres, and about 9,300 acres are heavily infested by invasive grasses of Kentucky bluegrass and smooth brome. A complete inventory of invasive grasses categorized by their relative proportion of the community has not been completed across the 87,000 acres of NFS land in the project area. Only 6.5 percent of the 185 NDSU and sere plots were at a native Reference State, while 16 percent were at an Invaded Grass State (excluding crested wheatgrass in broken land unless it was heavily invaded by other invasive grasses), and 10 percent of sites were at a high risk of transitioning to this state. The relative amounts of broken land/crested wheatgrass and other invasive grasses are described in the Effects Analysis - Existing Condition for each allotment (SDEIS Volume II and Botany specialist report, Part B).

C-3.118b The FS definition is inconsistent with NRCS invaded pasture, thus ignoring the resource risks by not managing these pastures to deal with crested wheatgrass. If the SDEIS of non-native grass then it raises the question of how the FS could conclude that the project area fails to meet seral stage. This seral objective is limited to native grass areas.
RESPONSE: The Forest Service definition of Invaded Grass States is consistent with the NRCS (2006) definition and general statements by Sedivec (2006, 2009) and Prince (2009). Established limits or definitions were applied to samples collected by NDSU where production data was obtained. When production data was not available from NDSU plots or sere plots, a more conservative determination of Invaded Grass States was used that involved 40 percent rather than 30 percent relative composition of invasive grasses as measured by plant cover (Botany specialist report, pages 21 - 24 and 45).

It is agreed that risks to native plant resources will continue as a result of not implementing prescribed grazing systems to manage or decrease the dominance of invasive grasses. See Response to Comments C-3.194 and C-3.199 regarding seral stage determination of crested wheatgrass sites and sites with light to moderate amounts of invasive grasses.

C-3.119 – In the SDEIS, Chapter 3, Part 1, Consistency with Grasslands Plan - Range, pp. 109-110, it states:

- Design and implement range management strategies for meeting desired vegetation objectives using existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I). **Guideline**
- *The analysis (existing monitoring information) shows a need to change some range management practices in order to trend towards desired condition.*
- *The analysis followed SRT recommendations utilizing a standardized methodology in place of Appendix I to set Authorized Use. This approach was taken because the SRT reported that erroneous assumptions were made in estimating livestock carrying capacities by equating grazing/harvest efficiency to high, medium, and low structure without considering the production potential of the ecological site (Report of the Scientific Review Team, May 2005, p. 20). The SRT also recommended Order 2 soil surveys in estimating livestock carrying capacities. Due to the two SRT recommendations, the Forest Service decided to estimate livestock carrying capacities by using available NRCS Order 2 soil surveys and a standard carrying capacity formula in order to establish Authorized Use under Alternative 4 to meet or move towards vegetation objectives. This is in addition to the variety of different range management strategies (Chapter3 Part 2) initially identified to help address meeting desired vegetation objectives.*

Comment: The existing monitoring information is too limited to make the claim that it shows a need *to change some range management practices in order to trend towards desired condition.* Riparian and woody draws have the best baseline information. High structure and seral stages have the least amount of monitoring data, if any.

Even though the FS has a tremendous number of VOR transects in the area, the SRT questioned if the 1996-2005 VOR transects were usable because there was no established protocol on the DPG at that time for everyone. Therefore, they said those transects should not be used after reviewing the FS explanations of how they were taken. The FS has stated in the SDEIS that they were implementing the SRT recommendations on this project.
RESPONSE: SDEIS Volume I Chapter 3, pages 166 - 175 discuss the VOR method and results for the project area. To provide project area and temporal context, this section also provides data from previous years and from Billings County as a whole. This covers the years 1996 - 1999 (see SDEIS Volume I Chapter 3, pages 169 - 171). Project area specific information was collected in 2004 and 2005.

C-3.119a. – The DPG still uses Appendix I as their baseline line for goals for grazing intensity even though *the SRT reported that erroneous assumptions were made in estimating livestock carrying capacities by equating grazing/harvest efficiency to high, medium, and low structure without considering the production potential of the ecological site.* The FS wants "light grazing intensity" (40-70% reduction in AUMs) across the DPG in order to maximize high structure for grouse. With a light grazing intensity the FS would not have to worry about the effects of grazing on the resources.
RESPONSE: Appendix I of the LRMP states "These guidelines are designed to produce light, moderate, and heavy grazing intensities that in turn provide for high, moderate and low structure respectively." Various grazing intensities are required to meet all structure classes and Grasslands Plan objectives.

C-3.119b – The SRT Recommendation V - 5: Efforts should be expanded to define relationships among production, grazing/harvest efficiency, and post-grazing structure within ecological sites has not been worked on by the FS other than to determine initial stocking rate.

The FS did not use a standard carrying capacity formula in order to establish Authorized Use under Alternative 4 to meet or move towards vegetation objectives. The FS did use a standard stocking rate equation out of the NRCS Range and Pasture Handbook that gives an initial stocking for the project area. The initial stocking for the project area is not precise enough to make an exact determination; it is only a beginning point and it is entirely disconnected from the Grassland Plan objectives.
RESPONSE: See Response to Comment C-3.92. The Forest Service agrees that the initial estimated carrying capacities are simply a starting point for Authorized Use levels proposed in Alternative 4 (see SDEIS Volume I Chapter 3, page 86). Monitoring will be necessary to see if Grasslands Plan objectives are moving towards or meeting identified resource concerns and whether adaptive management will need to be applied.

C-3.120 – In the SDEIS, Chapter 3, Part I, Consistency with Grasslands Plan - Range, page 111, it states:

- *Initial actions under Alternatives 3 and 3A would shift the structure mosaic by moving some of the Low structure into Moderate structure. The initial actions would also improve the diversity of plant composition in some of the allotments. Alternative 4 would modify the structure mosaic by shifting more areas from low to moderate and moderate into high structure than Alternatives 3 and 3A. In addition, Alternative 4 would improve the diversity of plant composition in more allotments than Alternatives 3 and 3A. Also, these alternatives include adaptive actions that would be applied if monitoring shows the initial actions are not meeting the objectives.*

Comment: The FS has already said that the only difference between Alternatives 3, 3A and 4 is **"time" to achieve objectives**. The deciding officer has to decide how fast he wants to get objectives completed. His only obstacle is the grazing program. It is only a matter of "time" before all the reductions the FS wants to get to "light intensity grazing" are achieved based on the tool box. The discussion omits the serious question of whether this area can produce the high structure in the first place. This was one of the scientific controversies that the FS was supposed to address at the AMP level.
RESPONSE: See Response to Comment C-3.65. For a discussion of the capability of this area to produce high structure, see SDEIS Volume I Chapter 3, Capability pages 176 and 177.

C-3.121 – In the SDEIS, Chapter 3, Part 1, Affected Environment- Riparian, pp. 115-119, it states:

- Allotments 127, 131, 132A, 132H, 133D5, 136/139, 140, 142, 158, 220,221, 239, 241, 243,248,249,272,281, and 288 contain only ephemeral streams and were not evaluated.

- Furthermore, there were also a number of riparian areas in the allotments that are *currently meeting riparian objectives*. Those allotments (130, 133, 134, 141, 230, 237, 240, 283, 289, and 302) are not addressed in this analysis. Instead this analysis focuses on FAR and NF stream reaches.
- The data in Table 3.9 show that slightly more than one-half **(50.7 percent)** of the intermittent stream reaches (measured by length) were **at PFC;** and slightly more than **one-third (33.9 percent) of reaches were NF.** Functional-At R **(FAR)** streams constituted the remaining **15.4 percent** of riparian areas.
- The Badlands and Rolling Prairie GA section of the Grasslands Plan further defines the desired condition for riparian areas with direction to maintain streams at PFC or improve them to an upward trend.

Comment: Grassland Plan resource objectives for Riparian in the North Billings Project Area are meeting or moving towards proper functioning condition and 80% or more of the riparian areas are in proper functioning condition. This means PFC and FAR-U would be included as meeting objectives.

19 of the 43 Allotments have no riparian areas, leaving 24 allotments with all the riparian resources. Table 3.9 shows, that in the 24 allotments with riparian sections:

- 28.61 mi. in PFC and 4.4 mi. in FAR-U = 31.12 mi.
- 3.3 mi. in FAR-NA
- 2.87 mi. in FAR-D and 19.12 mi. in NF = 21.99 mi.
- Total riparian miles= 56.41mi.

Allotments 126, 128, 129, 130, 133, 134, 135, 140, 141, 230, 237, 240, 244, 256, 258, 277, 278, 282, 283, 286, 287, 289, 300, 301, 302 have riparian resources.

Allotments 130, 133, 134, 141, 230, 237, 240, 283, 289, 302 are currently meeting riparian objectives and are not addressed in this analysis.

This leaves allotments 126. 128. 129. 135. 140. 244. 256. 258. 277. 278. 282. 286, 287. 300 and 301 that need to work on meeting or moving towards objective.

Table 3.10 shows Allotment #126 with 1.72 mi. of riparian in PFC. Allotment #140 shows 0.7 mi. in PFC. Allotment #277 shows 3.98 mi. in PFC and 0.55 in NF for an 88% meeting objectives. Allotment#278 shows 0.1 mi. in PFC. Allotment#301 shows 3.91 mi. in PFC and 0.14 mi. in FAR-D for a 97% meeting objectives. *Why are these allotments. #126, #140, #277, #278. and #301 not in the meeting riparian objectives group? They should be.*
RESPONSE: This means 10 allotments out of the 24 allotments with riparian resources in the project area numbers *128, 129, 135, 244, 256, 258, 282, 286, 287 and 300* need to work on meeting or moving towards objective.

Table 3.10 (SDEIS Volume I Chapter 3, pages 118 and 119) displays that there are 0.07 miles of stream rated as PFC in Allotment 140 not 0.7 miles. The commentor is correct that Allotments 126, 140, and 278 should have been included in those allotments listed in the narrative that are currently meeting riparian objectives. In the individual allotment

discussions this is displayed appropriately (SDEIS Volume II, pages 5, 207, and 462). The Errata will include these three allotments. However, the commentor is incorrect in believing that Allotments 277 and 301 should also be included. While both of these allotments display that greater than 80 percent of the miles of stream within them are rated at PFC, they also have stream reaches that are rated at NF and FAR-D. The Grasslands Plan has direction that stream reaches with these ratings need corrective action taken (Grasslands Plan, page 1-11 number 13); therefore, these two allotments could not be recognized as fully meeting Grasslands Plan direction and there are 12 allotments out of the 25 allotments surveyed for riparian areas.

C-3.122 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences- Riparian Alternative 2, page121, it states:

- Alternative 2 calls for no change in livestock management. Livestock grazing would continue in the future as it has for the past decade or more, with no new range improvements, no increase or decrease in livestock numbers except in response to annual operating instructions that evaluate climatic conditions and seasonal forage production, and no changes in grazing systems.

Comment: The FS uses the following phrase "no change in livestock management" for Alternative 2 to mean livestock grazing would continue in the future as it has for the past decade or more. The FS then goes on to say there would be no new range improvements, no increase or decrease in livestock numbers except in response to annual operating instructions that evaluate climatic conditions and seasonal forage production, and no changes in grazing systems. This definition of current management is incorrect.

NO change in livestock management means the MGA would continue to operate doing what they have in the past; which includes putting in range improvements, increasing or decreasing (mostly decreasing) livestock numbers as specified in the AOIs. MGA knows this because the FS prepares them. AOIs do more than evaluate climatic conditions and seasonal forage production. The FS uses the AOIs as a means to make reductions for not meeting resource objectives, using yearly transect data to do so.

In the past, MGA has changed grazing systems and used adaptive management to adjust when necessary. The FS uses a very narrow interpretation of "no change" that MGA feels is incorrect because they say "Alternative 2 calls for no change in livestock management. Livestock *grazing would continue in the future as it has (or the past decade or more."* Improvements, grazing adjustments and AOIs are a part of this history and should be a part of this alternative.

If left to the FS's narrow interpretation of Alternative 2, then Alternative 2 is not a viable alternative under the objectives of the Grassland Plan and the SDEIS. Current management doesn't mean the MGA and FS do nothing. If Alternative 2 cannot change even one thing then it can't meet FS range rules and the terms of the Grazing Agreement.
RESPONSE: In the description of Alternative 2, for the purposes of analysis in the EIS, no projects were proposed at this time. Current management is an alternative that is

required to be included in the range of alternatives analyzed; however, it may not be an acceptable alternative to work towards Grasslands Plan objectives. If in the future if the grazing association worked with the Forest Service to propose additional improvements, should Alternative 2 be selected, separate site specific NEPA analysis would have to be completed to analyze the anticipated effects of the proposal. The statement that no new improvements would be implemented is in no way intended to mean that new range improvements would not be considered in the future under Alternative 2.

C-3.123 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences - Riparian **–** Alternative 3, 3A, 4, page121, it states:

- Alternatives 3, 3A, and 4 use an array of different initial actions including range improvements, establishment of riparian pastures, riparian exclosures, implementation of different rotational grazing systems, Authorized Use adjustments, etc., to move impaired stream reaches towards PFC. Specific actions associated with each allotment are identified in Part 2 of this chapter.

Comment: Alternatives 3, 3A, and 4 are the only options that are_considered as viable, and there are really only two Alternatives, 3 and 4, since Alternatives 3 and 3A are the same except for cost. Again, this is too narrow a range of alternatives.
RESPONSE: The Forest Service is required by the Forest Service Handbook (Chapter 90) to include the no action alternative, the current management alternative, and the proposed action alternative in its analysis. The Forest Service believes that a reasonable range of alternatives was considered in the analysis for this project (see SDEIS Volume I Chapter 2 pages 43 - 53 for a more detailed discussion of the alternatives).

C-3.124 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences - Riparian Alternative 3, 3A, 4, pp. 121-122, it states:

- Table 3.11 identifies the number of reaches by allotment that would improve under initial and adaptive actions by alternative.

- As identified in Table 3.11, Alternatives 3 and 3A's initial proposed actions would improve five of the stream reaches rated as FAR-U and FAR-NA. While all five reaches would improve, it is predicted that two of the reaches located in allotment 286 on Betsy Creek would take several decades to reach PFC because of channel incision and the lack of riparian vegetation. Adaptive actions are predicted to improve the two remaining reaches in allotments 256 and 258 on Blacktail and Ash Coulee Creeks.

- Of the stream reaches rated as FAR-D or NF, a total of 19 would improve through the implementation of initial actions. However, seven of the reaches located in allotments 135,282, 286, and 287 would take several decades to reach PFC due to channel incision, loss of water table, and the lack of riparian vegetation.

  Under Alternative 4, initial proposed actions would improve all seven of the stream reaches rated as FAR-U and FAR-NA. While all seven reaches would improve, it is

predicted that two of the reaches located in allotment 286 on Betsy Creek would take several decades to reach PFC due to channel incision and the lack of riparian vegetation.

Of the stream reaches rated as FAR-D or NF, a total of 20 would improve through the implementation of initial actions. However, three of the reaches located in allotments 282, 286,and 287 would take several decades to reach PFC due to channel incision, loss of water table, and the lack of riparian vegetation.

Comment: Table 3.11 shows the following:

1. 7 stream reaches in FAR-U/FAR-NA. Of the 7 reaches:

   - In Alternative 3/3A **–7 reaches in FAR-U/FAR-NA improve**
     - 5 reaches in FAR-U & FAR-NA improve with initial actions
     - 2 reaches in FAR-U & FAR-NA improve with adaptive actions

   - In Alternative 4 – **7 reaches in FAR-U/FAR-NA improve**
     - 7 reaches in FAR-U & FAR-NA improve with initial actions

2. 21 stream reaches in FAR-D/NF. Of the 21 reaches:

   - In Alternative 3/3A – **20 reaches in FAR-U/FAR-NA improve**
     - 18*reaches in FAR-D & NF improve with initial actions
     - 2 reaches in FAR-D & NF improve with adaptive actions

   - In Alternative 4 – **20 reaches in FAR-D/NF improve**
     - 20reaches in FAR-D & NF improve with initial actions

On p. 122, 2nd paragraph, it states- "Of the stream reaches rated as FAR-D or NF, a total of **19** would improve through the implementation of initial actions." However, Table 3.11 shows 18 improve. MGA assumes the Table is correct.

Summary:

Basically, Table 3.11 shows that there is no difference between Alternative 3/3A and Alternative 4 in the number of reaches by allotment that would improve under initial and adaptive actions by alternative. The "adaptive actions" taken in Alternative 3/3A would be reductions in authorized use similar to Alternative 4 initial actions. The only difference would be when the reductions were implemented.

It appears for riparian resources, that Alternative 3/3A and Alternative 4 are preferred for improving riparian reaches.

RESPONSE: The commentor is correct, the narrative under Table 3.11 (SDEIS Volume I, Chapter 3, page 122) should indicate that 18 not 19 stream reaches would improve through the implementation of initial actions described in Alternative 3 and 3A. This will be

corrected in the Errata. Also, the difference between the expected improvement of stream reaches is that implementation of Alternatives 3 and 3A will require adaptive management for all reaches to improve while Alternative 4 expects all stream reaches to improve with implementation of initial actions with the caveat of those streams footnoted as requiring several decades for improvement. Alternative 4 has several tools that will address riparian concerns not solely Authorized Use adjustments. Alternative 4 was identified in the SDEIS as the preferred alternative (Volume I, Chapter 2 page 48).

C-3.125 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences - Riparian - Alternative 3, 3A, 4, pp. 123-124, it states:

- Table 3.12 provides a comparison of the MGA 3-year average permitted use to the range of alternatives. As explained under the range section of this chapter, the 3-year average is used for comparison purposes and to more sharply define the differences between the alternatives.

- A comparison of the Authorized Use (Preference) under Alternatives 2, 3, and 3A with the MGA 3-year permitted average shows an increase in AUMs ranging from 4 to 74 percent if permittees utilized their full Authorized Use, i.e., Preference. With regard to riparian conditions, it is not necessarily the number of cattle that is the issue, but the location. Alternatives 3 and 3A use a variety of actions, including fencing, to control access to water, creation of riparian pastures and exclosures, stock tank water management, etc., to move cattle away from riparian areas or control access. Therefore, even if numbers are higher, riparian conditions are still anticipated to improve. Allotment 258 would increase by 37 percent; however, a proposed riparian exclosure would mitigate an increase in Authorized Use. Oil and gas development has also adversely affected the reach associated with this allotment. The 74 percent increase in AUMs in Allotment 286, however, would likely cause increased impacts to the two affected stream reaches in the allotment.

- Comparing the MGA 3-year permitted average to Authorized Use under Alternative 4 shows a range of potential increases and decreases in Authorized Use. Allotments 129,282, and 286 could see an increase in Authorized Use of6, 34, and 29 percent, respectively. The remaining allotments could see decreases in Authorized Use ranging between 3 and 20 percent. Due to a proposed riparian exclosure which would be constructed along Magpie Creek where the impacted stream reach is located, the 3 percent increase in Allotment 129 would not affect current PFC ratings. Allotment 282 shows a 32 percent increase, associated with a reach located Magpie Creek and one on Whitetail. Because of a proposed riparian exclosure that would be constructed on this reach, the reach on Magpie Creek would not be affected by an increase in Authorized Use. The reach located on Whitetail Creek has been affected by accelerated runoff attributable to oil and gas development and roads directly above the watershed, so an increase in Authorized Use should not have much effect. Allotment 286 could see a 28 percent increase Authorized Use, which could cause additional impacts to the two affected stream reaches.

Comment: Table 3.12 and this entire section takes some time to understand. To summarize this section:

- By using the "for comparison purposes only" 3 year average permitted use for allotments with stream reaches rated FAR_NA, FAR-D and NF, (Allotments #126, #134, #277 and #301 are meeting objectives) it will give the MGA the following reductions:
  - a reduction from preference to the 3 year average permitted use,
  - a reduction for initial stocking rate,
  - a reduction for cow size.

What the FS tries to do is make the 3 year average permitted use look more appealing by saying that if Alternative 3/3A is chosen, then all allotments with stream reaches rated FAR_NA, FAR-D and NF could get increase from +4 to +74% if MGA bases everything on the 3 yr. average permitted use. The FS states they can do this because, "with regard to riparian conditions, it is not necessarily the number of cattle that is the issue, but the location. Even if numbers are higher, riparian conditions are still anticipated to improve." MGA doesn't believe that the FS would do this because this would significantly and adversely affect the other resource areas.

The FS also tries to make Alternative 4 reductions look less significant by using the 3 year average permitted use with AMs converted for cow size. It is a nicely disguised chart, but not effective. The FS should spend more of their time on important issues.
RESPONSE: Table 3.12 (SDEIS Volume I Chapter 3, page 124) is comparing proposed Authorized Use converted to AUMs for both the 3-year average summer permitted use and Preference to display the expected effect to those allotments with streams reaches rated at FAR-NA, FAR-D, or NF. In order to make an accurate comparison all values need to have a common label; therefore, all values were converted to AUMs based on assumptions described in the range section (SDEIS Volume I Chapter 3, page 95). Additionally, the 3-year permitted use was the best available information provided by MGA in lieu of actual use to make comparisons under the different alternatives (SDEIS Volume I Chapter 3 Actual Use, pages 94 - 95).

C-3.126 – In the SDEIS, Chapter 3, Part 1, Cumulative Effects- Riparian- Past and Present Actions, page125, it states:

- Livestock actions have contributed to the poor riparian conditions of the 28 stream reaches rated at FAR and NF in the project area.

Comment: The FS has determined that the only remedy for the above situation is to reduce livestock to a light grazing intensity through their adaptive management, and this way the livestock impacts will not be significant enough for the FS to worry about. MGA believes that even under Alternative 2, they can improve riparian conditions to meet objectives. It has been the FS who has not let the members install the needed improvements to accomplish this. FS objections to members' requests for improvements have increased the difficulty in improving riparian areas.
RESPONSE: The SDEIS does not solely propose Authorized Use adjustments to address riparian issues. Several management tools such as riparian pastures, exclosures, and moving developed water outside of the riparian area are proposed to address this issue (see

SDEIS Volume II Table 3.11 and associated discussion on pages 121 - 123 on the tools proposed by alternative for those allotments with identified riparian resource issues).

The Forest Service has authorized some improvements on the basis of replacing existing non- or minimally-functional developments or because of a need to address resource damage. Other additional range improvements have been deferred to consideration in the revision of the AMP.

C-3.127 – In the SDEIS, Chapter 3, Part 1, Cumulative Effects - Riparian- Past and Present Actions, page125, it states:

- *Noxious Weeds/Invasive Grasses.* The primary past, current, and future effect of these groups of plants is that they alter or replace native plant communities, which in tum affects the functionality of riparian areas by altering the diversity of bank-forming vegetation thus increasing the potential for eroded banks and stream bars.

Comment: The FS considers crested wheatgrass to be invasive. However, crested wheatgrass is a part of the ecosystem on the DPG that is not going away. The FS's time would be better spent trying to manage the crested wheatgrass and control its location.
RESPONSE: Crested wheatgrass was treated as an invasive grass only when occurring outside of broken land. It is agreed that crested wheatgrass is not going away and greater management effort should be directed to effectively using and controlling this and all invasive species.

C-3.128 – In the SDEIS, Chapter 3, Part 1, Cumulative Effects - Riparian -Past and Present Actions, page 126, it states:

- *Farming* of sub marginal lands in the 1930s in combination with several other factors resulted in massive erosion, sediment delivery, and accelerated stream down cutting in some cases.

Comment: Past farming activities in the project area have changed soil profiles significantly. Despite this acknowledgement, the FS doesn't account for this past abuse in their inventory or monitoring. The FS still expects these sites to produce as if they were undisturbed sites. MGA would like to see the FS study and acknowledge the various long term impacts to these sites from this past disturbance and the effects on soil.
RESPONSE: The SDEIS is acknowledging past farming actions and their potential effects on riparian issues (Volume I Chapter 3 Past and Present Actions, Farming, page 126). The Grasslands Plan describes resource goals and objectives to "meet or move towards" that recognize some issues may take longer to obtain as well as the footnote on Table 3.11 (SDEIS Volume I Chapter 3, pages 121 and 122) that notes those stream reaches that are expected to take several decades to achieve PFC.

C-3.129 – In the SDEIS, Chapter 3, Part 1, Cumulative Effects by Alternative- Riparian, page128, it states:

- *Adaptive Management.* Implementation of adaptive management options under Alternatives 3, 3A, and 4, including actions identified in the tool box, would improve FAR and NF stream reaches not addressed by the initial actions. In terms of adaptive management, the greatest difference between these alternatives is the rate of change.

- In most cases, Alternatives 3 and 3A initiate more indirect actions to deal with riparian concerns, such as rotation changes, water management, etc. Determining whether these actions are effective requires time, generally 3 to 5 years, so this time is lost if the actions are determined to be ineffective. Alternative 4 implements a higher number of direct riparian actions such as riparian pastures, exclosures, etc., which directly improve riparian areas in a shorter time frame, as shown by riparian enclosures and pasture on Ash Coulee Creek.

Comment: The FS states that, "In most cases, alternatives 3 and 3A initiate more indirect actions to deal with riparian concerns, such as rotation changes, water management, etc. Determining whether these actions are effective requires time, generally 3 to 5 years, so this time is lost if the actions are determined to be ineffective." This is true for almost everything that is proposed in the SDEIS. It will take monitoring to see whether these actions are effective.

The FS implies that they can guarantee that because Alternative 4 implements a higher number of direct riparian actions such as riparian pastures, exclosures, etc., they will be more successful in riparian resource improvement. So it can be concluded that the FS is implying they are not willing to implement Alternative 3/3A because it is too risky.

Yet if you look at the difference between Alternative 3/3A and Alternative 4, there is virtually no difference in the outcome. Moreover, if the solution is so clear why did the FS wait all these years? The FS could have initiated improvements 9 years ago.
RESPONSE: The SDEIS did not indicate that Alternative 4's implementation would be more successful; it indicated that for riparian issues initial actions proposed under Alternative 4 would be anticipated to improve the identified stream reaches, whereas Alternatives 3 and 3A are expected to require adaptive management.

The Forest Service has authorized requested practices that would address Grasslands Plan objectives if they could be implemented through the Allotment Worksheet (AW) and not considerably affect a future AMP.

C-3.130 – In the SDEIS, Chapter 3, Part 1, Consistency with Grasslands Plan- Riparian, pp. 128-130, it states:

- Manage land treatments to conserve site moisture and to protect long-term stream, wetland, and riparian area health from damage by increased runoff. Standard

> *All of the alternatives except Alternative 2 implement actions to improve the mosaic of herbaceous structure towards Grasslands Plan Objectives. This would reduce any excess overland flow that may be occurring;* ***however, there is no evidence that excessive runoff is occurring other than in localized situations in response to***

sudden short-term, high-intensity downpours. *Implementation of different actions under Alternatives 3, 3A, and 4-such as the creation of riparian pastures and exclosures, changes in rotations, and/or adjustments of Authorized Use-would improve riparian vegetation on impacted stream reaches and improve stream health.*

Comment: Because there is no ***evidence that excessive runoff is occurring,*** this is not an issue.

- Design activities to protect and manage the riparian ecosystem. Maintain the integrity of the ecosystem, including quantity and quality of surface and ground water. **Standard**

Activities such as drilling rangeland wells, construction of rangeland pipelines, placement of stock tanks, etc., would be carried out under Forest Service construction specifications and applicable BMPs. These facilities would not be placed in riparian areas and are often used with a goal of pulling livestock away from riparian areas in order to minimize impacts resulting from livestock.

Comment: Because this is standard operating procedure for the FS, this is not an issue.

- Maintain long-term ground cover, soil structure, water budgets, and flow patterns of wetlands to sustain their ecological function and meet regulations found in Section 404(b)(l) of the Clean Water Act. The 404 regulations were established by the Environmental Protection Agency and constitute the substantive environmental criteria used in evaluating activities. **Standard**

  - Maintain enough water in perennial streams and ground water tables to sustain or improve function.
  - Manage water-use facilities to prevent gully erosion on slopes, sediment discharge, and bank damage to streams.
  - Design projects to minimize sediment discharge into streams, lakes, and wetlands.
  - Protect seeps, springs, wetlands, and riparian ecosystems.

Projects proposed under Alternatives 3, 3A, and 4 include such elements as fencing springs and reservoirs, developing rangeland water wells, placing stock tanks, and constructing rangeland pipelines (see Table 2.11). Fencing of springs and reservoirs would provide additional protection to water sources. Rangeland water wells, pipelines, and placement of stock tanks would not be located near riparian areas and would be constructed in accordance with Forest Service specifications and guidelines. Implementation of these actions would include BMPs to further assure that these types of projects would not adversely affect long term ground cover, soil structure, water budgets or flow patterns associated with wetlands.

Comment: Because this is standard operating procedure for the FS, this is not an issue.
RESPONSE: This section is meant to display if the alternatives are consistent with Grasslands Plan direction in order for the decision maker to make an informed decision.

C-3.131 – In the SDEIS, Chapter 3, Part 1, Woody Draws, page 130-131, it states:

- Page 130: However, comparison of aerial photographs from 1939 and 1953 with 2009 indicate that woody draw expansion has been minor in the project area. These comparisons are contained in the Botany Report (Project Record, Specialist Reports and Notes).

- Page 131: As described in the Botany Report (Project Record, Specialist Reports and Notes), the expansion of Rocky Mountain juniper into grassland habitat is especially evident in the Badlands geographic area, but is also occurring in the Rolling Prairie, and is beginning to constitute greater amounts of woody draw tree cover within both of these settings.

Comment: The above two comments are seemingly contradictory. One says woody draw expansion has been minor in the project area, and the other says the expansion of Rocky Mountain juniper into grassland habitat is especially evident in the Badlands geographic area, but is also occurring in the Rolling Prairie. The SRT report noted with alarm the expansion of woody draws.
RESPONSE: There is no contradiction. As defined, woody draws involve deciduous green ash (American elm) /chokecherry communities along ephemeral and intermittent drainages and adjacent slopes, and are distinguished from Rocky Mountain juniper (coniferous) communities that historically occupied steep northerly aspect slopes but are currently spreading into historic grassland communities and deciduous woody draws. The SRT did not have any data to specifically identify expansion of woody draw communities, but there was concern expressed regarding the expansion of several woody types into grassland habitat.

C-3.132 – In the SDEIS, Chapter 3, Part 1, Woody Draws, pp. 130-131, it states:

- These habitats constitute less than 10 percent of the LMNG, which increases their attractiveness for many wildlife species and a variety of human-related uses.

- Combined with low or sheltered topographic positions, woody draw structure provides the primary source of shade in the summer and thermal cover in the winter.

- Livestock also seek the amenities of woody draws that attract wildlife.

- As disturbance from livestock increases, successful tree and shrub regeneration decreases and mature or decadent trees begin to dominate the population.

Comment: Since these statements came out of the Botany report, it is assumed that "the woody draw structure provides the primary source of shade in the summer and thermal cover in the winter" for wildlife. The Woody Draw introduction is written with a bias towards wildlife using woody draws", but "livestock should not be allowed too."
RESPONSE: Current livestock numbers and grazing systems have a greater adverse effect on woody draw conditions than wildlife. Rather than bias, this is simply the result of the greater size, forage requirements, and number of livestock compared to deer, elk, or other wildlife. As cited in the Botany specialist report, several range managers and scientists

have recognized the adverse effect of livestock on woody draw and riparian conditions (Boettcher and Johnson 2005, Briske et al 2011, Bjugstad and Girard 1984, Boldt et al 1978, Butler 1983, Butler and Goetz 1984, Girard et al 1987, Hansen et al 1984a, 1995, Hopkins and Ryan unpublished, Jensen 1991, Laird 1995, Lesica 1989, Lesica and Atthowe 2001, Lewis 1956, Nelson 1960, Schulz and Leininger 1990, Severson and Boldt 1978, Uresk et al 2009, USFS 1995). The relative effect of wildlife and other factors on woody draw conditions is discussed in the SDEIS (Volume I Chapter 3, pages 144 - 147) and the Botany specialist report (pages 2 - 8).

C-3.133 – In the SDEIS, Chapter 3, Part 1, Woody Draws, Methodology, pp.l32-133, it states:

- Four data sources were used to assess woody draw conditions and included:

1) A long-term cooperative study between the North Dakota Game and Fish Department (NDGF) and the Forest Service;

2) Woody draw surveys conducted by the Medora Ranger District during 1998, and 2005 through 2007;

3) Sampling conducted by North Dakota State University (NDSU) during 2008 and 2009 as part of a cooperative agreement between the Forest Service, MGA, and NDSU; and

4) Use of aerial photography to determine the change in the extent of woody draws.

Comment:

- A cooperative woody draw study between the Forest Service and NDGF was initiated in 1987. The study included 17 randomly located, permanent sites within the project area. These sites have been sampled every 5 years since 1987. They have been read 5 times with the sixth time coming in 2012. Of the 17 original sites, **only 13 are used in the study.**

- The FS conducted the next survey as a landscape level assessment of woody draw communities in 1997-1998 for preparation of the LMNG Rangeland Assessment (USDA Forest Service *2002)**All observations were "ocular" estimates.***

The FS states that: "The 1998 surveys' condition parameters that identify the effects of livestock use on woody draws were separated from other less relevant survey information and are used in this analysis. Adverse impacts such as Dutch Elm or other diseases, invasive/noxious weeds, and beaver-cut trees not directly linked to excessive livestock use, were not used to assign At Risk or Unhealthy condition ratings. ***In order to focus on adverse livestock related impacts and maintain consistent rating criteria,*** *the original condition ratings for some of the 1998 Forest Service sample sites were adjusted based on a review of the previously collected data and site revisits during 2005 through 2007. The majority of rating adjustments involved an increase in condition class.*

This definitely biased the survey by not looking at the effects of other contributors that cause impacts to the woody draws.

RESPONSE: The point that the SDEIS was trying to make involved increasing the condition rating for several sites according to existing tree and shrub cover and population structure. Less than Healthy ratings of several 1998 sites appeared to be attributed to factors of leaf blight, tent caterpillars, Dutch elm disease, etc., even when tree and shrub characteristics were adequate for a higher condition rating. Condition ratings in 1998 of 77 sites in the project area were 35, 49, and 16 percent Healthy, At Risk, and Unhealthy respectively. Condition ratings assigned to these samples during 2007 were 56, 34, and 10 percent Healthy, At Risk, and Unhealthy respectively. The adjustments increased the proportion of Healthy woody draws across the project area. Other factors that influence woody draw conditions and their relatively small degree of affect in the project area were discussed in the SDEIS (Volume I Chapter 3, pages 144 - 147) and the Botany specialist report (pages 2 - 8).

- To supplement existing data, woody draw surveys were conducted at 187 sites during 2005 through 2007. Potential sample sites were selected from aerial photographs to characterize existing conditions and variability within pastures and allotments. Approximately 41 of the 1998 Forest Service sites were revisited to ensure that the previous condition ratings were based on the same criteria as the 2005 through 2007 ratings.

- Twenty-nine randomly selected sites were sampled by NDSU in 2008 and 2009. The sample protocol is located in the Supporting Documentation - Range section of the Project Record.

- To evaluate potential changes in woody draw extent, 8- inch to the mile (1:7920) historical aerial photographs from 1939 and 1951 were obtained from the Soil Conservation District office in Dickinson, ND for comparison with a 2009 digital photo layer (USDA FSA 2009). Historical photo coverage was not complete for the entire project area for the years of 1939 and 1951. The historical photos covered primarily the Rolling Prairie geographic area and a smaller amount of the Badlands geographic area. A partial set of 1939 Forest Service 4-inch to the mile photographs (1:15840) were used to fill in gaps across the project area.

The degree of accuracy in the historical aerial photographs examined sounds like it was somewhat difficult to match up.

RESPONSE: Appendix D of the Botany specialist report shows that matching of large-scale aerial photographs from different years with 2009 photographs was highly accurate and conclusive of only minor changes in woody draw extent. The main point of discussion in the SDEIS was that coverage was not complete across the project area but the Forest Service used the photos that were available. The SDEIS overstated that the 1939 smaller scale photos filled gaps across the project area. They filled only a few gaps, and their smaller resolution resulted in their being less useful than the larger scale photos.

Comment: The Grassland Plan objective states "Move at least 80 percent to healthy". It doesn't say "meet or move toward" just move toward.
RESPONSE: The Forest Service agrees, but move toward healthy implies an upward trend or implement management that will start an upward trend towards Healthy. See Response to Comment C-3.135.

C-3.134 – In the SDEIS, Chapter 3, Part 1, Affected Environment, Woody Draws, page 135, it states:

- Of the 43 allotments in the project area, five (132A 133D5, 141, 220 and 248) contained no green ash woody draws. Six allotments (127, 135, 249,258, 282, and 283) met woody draw objectives. The remaining allotments exhibited varying percentages of Healthy, At Risk and Unhealthy woody draws. The definition of woody ratings is located in Chapter 1 in the Key Issues section.

Comment: Grassland Plan resource objectives for Woody Draws in the North Billings Project Area seeks "to move at least 80 percent of riparian areas and woody draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability."

The Grassland Plan does not address using the rating system outlined in the NBSDEIS of Healthy, At Risk, and Unhealthy to assess Woody Draws. MGA has to assume that a Healthy rating would meet Grassland Plan objective of moving at least 80 percent of woody draws toward self-perpetuating plant communities that have desired diversity and density of understory and overstory vegetation within site capability.
Of the 43 allotments in the project area, five (5) contained no green ash woody draws. Six (6) allotments are meeting woody draw objectives. Of the remaining 32 allotments, 42% of the woody draws are At Risk, and 7% are Unhealthy.
RESPONSE: The Grasslands Plan did not incorporate a rating of Healthy, At Risk, and Unhealthy conditions. However, as described in the SDEIS (Volume I Chapter 3, pages 136 - 139) and the Botany specialist report (page 33), Healthy woody draws met the objective of desired conditions as outlined in the Grasslands Plan, while At Risk and Unhealthy conditions did not.

The 42 percent of At Risk sites, 7 percent of Unhealthy sites, and 51 percent of Healthy sites apply to all 275 sample sites across the project area, not just the 32 allotments with woody draws that do not meet plan objectives.

C-3.135 – In the SDEIS, Chapter 3, Part 1, Affected Environment, Woody Draws, pp.136-137, it states:

- Healthy woody draws (see Figure 3.3, a and b) exhibited the greatest average tree (339/acre) and sapling density (359/acre) and shrub canopy cover. Tree saplings were common among the tall shrub (chokecherry, serviceberry) layer that was generally dense enough to inhibit access. Although the herbaceous layer of Healthy communities often contained areas of Kentucky bluegrass, longbeak sedge

(CarexsprengeliiDew. ex Spreng.) and native grasses were usually prominent, as were bare mineral soil and woody leaf litter.

- About 42 percent of the surveyed woody draws were rated At Risk due to a scarcity of tree saplings (<85 /acre) and poorly represented tall shrub layers (<11 percent canopy cover) and/or a dominance of short shrub layers, i.e., western snowberry (see Figure 3.4, a and b). Woody draws in At Risk condition consistently exhibited evidence of high livestock use including browsing and mechanical damage to trees and shrubs, trampling, and damage caused by livestock lounging within the shaded understory. Livestock trails observed in woody draws tended to involve multiple intertwining paths that were usually barren and exhibited dense and deep hoof prints that compact the soil.

- At Risk conditions in photo a) shows some mixed tree ages but no sapling/shrub layer is present and the herbaceous layer is dominated by Kentucky bluegrass sod and dandelion *(Taraxacumofficinale*Weber*).* Photo b) is dominated by old and middle aged trees with no saplings. A low shrub layer of western snowberry is present but the desired mid and tall shrub layers are absent.

- Basal sprouting from mature or decadent trees was common and constituted the majority of saplings among several of these sites, but heavy browsing of the basal sprouts and independently establishing saplings was typical (Figure 3.6). Low densities of tree sapling (<61/acre) and smaller 1- to 4-inch dbh classes (<44/acre) indicated that minimal successful recruitment was occurring. Kentucky bluegrass and other invasive grasses usually dominated the herbaceous layer with or without western snowberry shrubs. When bare ground was present among Unhealthy sites, it was generally trampled, compacted, and rilled, decreasing the ability of the drainage to trap or slow the movement of sediment and moisture.

Comment: Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, the FS cannot tell if either one of those ratings are "moving" toward objectives. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.

RESPONSE: Long-term monitoring of woody draws across the LMNG, including 14 sites within the project area, indicate stagnate or decreasing woody draw conditions (Duxbury 2009). Observations during 2005 through 2008 of several Forest Service sites sampled in 1998 did not indicate any change in condition of individual sites.

C-3.136 – In the SDEIS, Chapter 3, Part 1, Affected Environment, Woody Draws, page 137, it states:

- Some of the Unhealthy woody draws are likely to revert to grass or western snowberry/grass communities due to a lack of tree regeneration and loss of all or most of the tall shrub layers.

Comment: If some of the Unhealthy woody draws are likely to revert to grass or western snowberry/grass communities are they still considered woody draws? And, if they are not, then they should be removed from the inventory.

RESPONSE: Woody draws that revert to grass or low shrub communities would no longer be considered woody draws and would be removed from the inventory if and when these conditions develop.

C-3.137 – In the SDEIS, Chapter 3, Part 1, Affected Environment, Woody Draws, page 140, it states:

- Based on comparisons with average measurements from the NDGF-Forest Service data sets and tree and shrub densities reported from other researchers (Project Record, Specialist Reports and Notes, Botany Report), the proportion of Healthy, At Risk, and Unhealthy sites among the NDSU sample sites was about 22, 65, and 13 percent, respectively. However, the lower proportion of Healthy woody draws among the NDSU sites is largely attributed to differences in sample methodology.

- Of seven sites sampled by both the Forest Service and NDSU, three sites rated Healthy based on Forest Service surveys were rated At Risk when comparing the NDSU data with average tree density measurements from the FS/NDGF data. One site rated At Risk by the FS/NDGF surveys was Unhealthy based on the NDSU data.

Comment: Since the NDSU methodology was no different that the FS methodology, their data cannot be used in the analysis or monitoring.
RESPONSE: See the Methodology discussion (SDEIS Volume I Chapter page 134) to see how the cooperative monitoring data collected by NDSU was utilized for woody draws.

C-3.138 – In the SDEIS, Chapter 3, Part 1, Affected Environment, Woody Draws, pp. 142-143, it states:

- *Although the various monitoring data are not adequate to identify a definitive trend* in woody draw conditions within the project area, the existing data suggests two things. First there appears to be a downward trend in saplings, which threatens tree recruitment into the larger dbh classes. If this continues, the overstories of the affected woody draws would eventually thin and could ultimately be replaced with a shrub and grass community. Second, based on aerial photography, there appears to be minor expansion {<5 percent) in the extent of woody draw communities.

Comment: As stated in Comment #134, since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings are "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135 and the allotment-level effects analysis (SDEIS Volume II) for potential changes, or lack thereof, of woody draw conditions under existing and proposed management.

C-3.139 – In the SDEIS, Chapter 3, Part 1, Affected Environment, Woody Draws, page 148, it states:

- **DESIRED CONDITION**

  The desired condition for woody draw communities in this project area is to maintain or develop a multi-layer and multi-age class of herbaceous plants, shrubs, and trees, *moving At Risk and Unhealthy woody draws towards self perpetuating plant communities* that exhibit thick brushy shrub understories and a multi-story, multi-age structure of the tree canopy, according to site capability.

Comment: Again, with no trend established for At Risk and Unhealthy at the present time, long term trend monitoring will be needed to establish that trend. Until, then no reductions should be given. Remember, the objective is "moving towards" not "meeting" objectives. Looking at the 49% that is At Risk or Unhealthy, trend can be established.
RESPONSE: See Response to Comment C-3.135.

C-3.140 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 1, page 149, it states:

- The removal of livestock grazing could have negative consequences, in that non-harvest of the herbaceous layer would result in increased litter accumulation, which can assist invasive grass establishment and impair the establishment of woody species seedlings. In time, the dynamics of both the woody and herbaceous layers could stagnate within many woody communities without periodic disturbance.

- With continued non-use, woody draw dynamics would possibly decrease unless natural ecosystem processes of fire, erosion, flooding, and ungulate grazing occur at sufficient intensity and frequency to facilitate dynamics of the system. Invasive grasses and accumulated litter may hamper the recovery of woody draws improvement.

Comment: The dilemma for the FS here is determining the appropriate grazing level for Woody Draws, so they can be self-sustaining without degradation from grazing. Without grazing there would be a decrease in woody draw health.
RESPONSE: Comment noted.

C-3.141 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 2, page 149, it states:

- In the At Risk and Unhealthy woody draws, existing Authorized Use levels would continue to contribute to excessive use of woody draw communities. Annual use of every pasture, often at the same or similar times of the year, is also a factor contributing to poor conditions among many sites.

- Some adverse impacts to woody draws occur from wildlife, climate extremes, and disease; however, as noted previously, these are not the primary factors influencing the conditions of the woody draws.

Comment: The FS has made it abundantly clear they believe livestock is the primary factor for At Risk and Unhealthy woody draws. Scientific reports say that without some kind of occasional

soil disturbance, trees cannot get established through sod. Ecologically, this can lead to woody draws dying out. Data on some of the woody draws forms say this would occur.
RESPONSE: The SDEIS does indicate that excessive livestock disturbances are believed to be the principle factor for some At Risk and Unhealthy woody draw conditions in the project area, as noted in the SDEIS. This is supported by woody draw and riparian research and literature cited in the SDEIS and Botany specialist report (see Response to Comment C-3.132 for citations).

C-3.142 – In the SDEIS, Chapter 3, Part I, Environmental Consequences, Woody Draws, Alternative 3, pp. 150-153, it states:

- Under this alternative, a series of different livestock management techniques are utilized to address concerns with At Risk and some Unhealthy woody draws. Proposed actions include relocating water tanks out of woody draws where feasible, fencing or controlling access of some water structures to manage livestock distribution, creating new water sources located to pull livestock away from woody draws, fencing individual woody draws to limit livestock access, and implementing or changing existing rotations to affect the amount of time or season of use that livestock have access to woody draws. This alternative is adaptive-management-based.

- A summary of the effects of initial actions by allotment is presented in Table 3.16. Also provided is a short synopsis of the reasoning for the effects determination. A detailed discussion of each allotment is contained in Part 2 of this chapter.

Table 3.16 – Summary of effects rationale by allotment for woody draws, Alternative 3

Comment: Of 275 woody draws surveyed by the Forest Service and NDGF, 51 percent were rated Healthy, 42 percent were rated as At Risk, and 7 percent were Unhealthy. Six (6) allotments (127, 135, 249,258, 282, and 283) meet woody draw objectives. The remaining 32 allotments exhibit varying percentages of Healthy, At Risk and Unhealthy woody draws.

A summary on page 152 of Table 3.16 shows the following:

- Collective initial actions under Alternative 3 would result in improved woody draw conditions in 11 of the 32 allotments that contained woody draws not meeting desired conditions. Of the 11 allotments, 11 are projected to show slight improvement and one would show marked improvement. Slightly positive improvements would have a low potential to shift a large portion of woody draws from At Risk to Healthy condition. Of the remaining 21 allotments, six would experience decreased woody draw conditions and 15 would maintain their conditions.

The FS summary of Table 3.16 is incorrect. Table 3.16 shows 12 (not 11) of 32 allotments would improve, labeled “Positive” and “Slightly Positive”. Of the 12 allotments, 11 are projected to show slight improvement and 1 would show marked improvement (Positive). Of the remaining 20 allotments, five (5) would experience decreased woody draw conditions and 15 would maintain their conditions.

The FS shows that Alternative 3 will not meet objectives with the following statement:

- Slightly positive improvements would have a low potential to shift a large portion of woody draws from At Risk to Healthy condition.

This means that only one (1) allotment would theoretically move one of its two woody draws from At Risk to Healthy. This is allotment #272, which has only two (2) woody draws. One (1) draw is Healthy and the other is At Risk. This would put seven (7) allotments (127, 135, 249, 258, 272, 282, and 283) meet woody draw objectives, for a total of 52 percent rated as Healthy, 41 percent were rated as At Risk, and 7 percent were Unhealthy. This is not enough change in "moving towards" objectives.

It is still critical that because trend is not determined in the At Risk or the Unhealthy classes, moving towards objective cannot be determined.
RESPONSE: Refer to the discussion below Table 3.16 (SDEIS Volume I Chapter 3, page 152 that states that 11 of the 32 allotments not currently meeting woody draw objectives would experience improved conditions under Alternative 3. As noted by the commentor, 12 allotments would experience improved conditions, but the twelfth allotment already meets woody draw objectives and is not included in the group of 32 allotments that do not meet objectives. However, 10 of the 11 allotments not meeting woody draw objectives, rather than all 11 as stated in the SDEIS, would experience relatively slight woody draw improvement with a low potential to appreciably increase the proportion of Healthy sites. This correction has been made in the Errata. The SDEIS is correct in that 21 rather than 20 (as stated in the comment) of the 32 allotments not meeting woody draw objectives would experience no improvement, with 15 allotments experiencing neutral effects and six allotments experiencing negative effects.

In Allotment 272, one draw is Unhealthy rather than Healthy as stated in the comment, and the second is At Risk. If one of the draws increased to Healthy as a result of fencing, 50 percent of the draws would be Healthy, but the allotment would still not meet desired conditions of 80 percent Healthy and there would still be six (rather than seven as stated in the comment) allotments meeting objectives. The comment appears to incorrectly relate the number of allotments meeting woody draw objectives with the proportion of Healthy sites across the project area. As discussed in the Botany specialist report (page 88), the proportion of Healthy woody draws could increase to as much as 55 percent under Alternative 3, not 52 percent as stated in the comment.

See Response to Comment C-3.135 relative to the discussion on trend.

The summary of effects rationale in Table 3.16 is so subjective as far as predicting results based on adaptive management that it really isn't of much use. Predicting a "positive," "Slightly Positive" "Neutral" and a "Negative" effect, and then saying "Slightly positive improvements would have a low potential to shift a large portion of woody draws from At Risk to Healthy condition" leaves the MGA wondering what about the purpose of Alternative 3. The FS does this so they can move to what they predict will improve woody draws, as stated on page 153:

- The most frequent adaptive management options that would contribute to improved woody draw conditions include the use of fencing and adjustments (decreases) in Authorized Use.

This type of generic analysis only paves the way for the FS to pick their preferred alternative, or use "adaptive management" to make reductions in livestock grazing. It is obvious that the FS is making a case to choose Alternative 4 because it is the only alternative that makes reductions immediately. Without knowing the trend for the "At Risk" category, Alternative 3 is not viable.
RESPONSE: The statement regarding "slightly positive improvements" establishes scale of change. If only minor improvements occur, reaching the stated objectives will be difficult if not impossible in the timeframes stated. The greatest improvement to woody draw conditions would result from decreasing livestock disturbances, with fencing or reductions in use providing the most consistent and direct means of achieving this goal. This is not, however, a means to pre-decide which Alternative to implement. See Response to Comment C-3.135 regarding woody draw trends.

C-3.143 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 3A, pp. 153-154, it states:

- Because Alternative 3A would improve fewer woody draws than Alternative 3, it would decrease the overall percentage of Healthy woody draws in the project area compared to Alternative 3. The detailed effects for each allotment are identified in Part 2 of this chapter.

Comment: The FS predicts that Alternative 3A would be worse than Alternative 3 in improving woody draws and changing the overall percentage of Healthy woody draws in the project area. Again the lack of objectivity in the FS analysis makes it hard to even understand why other methods of reducing impacts won't work.

With Alternative 3 and 3A are not even moving towards meeting objectives for woody draws, Alternative 4 is the only alternative left.
RESPONSE: The analysis relative to woody draws summarized in the SDEIS is supported by rationale and science. The end results were not presupposed when the alternatives were created with the input and collaboration of the MGA and its members. As has been noted previously, the Forest Service analyzed a range of alternatives as required in law, regulation and policy – including the direction of the Demonstration Project from the 2006 Livestock Grazing ROD. The commentor does not provide specifics as to flaws they see in the analysis.

C-3.144 – In the SDEIS, Chapter 3, Part I, Environmental Consequences, Woody Draws, Alternative 3A, pp. 156-157, it states:

- Actions contributing to adverse effects on woody draw conditions include relocating several spring-fed water tanks without reconstructing the plumbing system to maintain flow at the spring when the tank is full. This would result in decreased conditions of the wetland habitat and minimize potential improvement of adjacent woody draws because it would not be possible to manage water flow to control

livestock distribution and limit the degree of woody draw disturbances. Initial actions that include the construction of additional water sources, including the development of one spring, would adversely affect woody draw conditions in other allotments by increasing the level of disturbances. Not fencing woody draws, as proposed under Alternative 3, would decrease the number of allotments with positive effects from the initial actions.

Comment: It seems the FS has gotten very specific on describing actions for several springs in the project area. Since Alternative 3A is an "adaptive management" alternative, the proposed relocation of the springs could include the reconstruction of the plumbing system to maintain flow at the spring when the tank is full.
The FS is against any further water development even if it is to improve the woody draw resource because it "increases the level of disturbances." MGA isn't sure why this is so bad, but suspects it is because it might affect high structure by opening other areas to grazing, which FS views as a disturbance.

Alternative 3 is also an "adaptive management" alternative, and so can use fencing as a tool for woody draws. MGA doesn't believe that Alternative 3 would prohibit the use of fencing woody draws, unless the FS made this a restriction for this management alternative. MGA points to a statement in Alternative 4:

- Alternative 4 is similar to Alternative 3 in the use of management tools such as implementation or changes in rotations, but it does not utilize range infrastructure to the extent of Alternative 3.

Range infrastructure includes fencing.
RESPONSE: Each proposed management action was analyzed for its effect on resource conditions for each allotment and alternative. Changes in spring management were analyzed for effects due to the Grasslands Plan objective for 80 percent of springs and associated wetlands to be in good ecologic condition (Grasslands Plan, pages 1-2, 1-9, and 1-10). Relocation of the spring could include later reconstruction of the plumbing system, but as stated in the Response to Comment C-3.142, only initial actions were evaluated for changes in the trend of woody draw conditions due to uncertainties regarding the degree of adaptive option implementation.

Woody draw fencing is a proposed initial action in two sites under Alternative 3 and 3A, and four sites under Alternative 4. Woody draw fencing is a potential adaptive tool in all allotments under all three alternatives.

C-3.145 – In the SDEIS, Chapter 3, Part I, Environmental Consequences, Woody Draws, Alternative 4, pp. 157-161, it states:

- Alternative 4 is similar to Alternative 3 in the use of management tools such as implementation or changes in rotations, but it does not utilize range infrastructure to the extent of Alternative 3. In addition to these actions, Alternative 4 includes adjustments in Authorized Use based on carrying capacity and an adjustment for livestock weight. This alternative is also adaptive management based.

- A summary of the effects of initial actions by allotment is presented in Table 3.18. Also provided is a short synopsis of the reasoning for the effects determination. A detailed discussion of each allotment is contained in Part 2 of this chapter.

Table 3.18 – Summary of effects rationale by allotment for woody draws, Alternative 4

Comment: Of 275 woody draws surveyed by the Forest Service and NDGF, 51 percent were rated Healthy, 42 percent were rated as At Risk, and 7 percent were Unhealthy. Six (6) allotments (127, 135, 249, 258, 282, and 283) meet woody draw objectives. The remaining 32 allotments exhibit varying percentages of Healthy, At Risk and Unhealthy woody draws.

Table 3.18 shows the following:

The FS states on page 160:

- Collectively, the initial actions under Alternative 4 would contribute to improved conditions in 21 of the 32 allotments that do not meet woody draw desired conditions (Table 3.18). The degree of improvement would be relatively high in 3 allotments and relatively low in 18 allotments. Of the remaining 11 allotments, 4 would experience a decrease in woody draw conditions and 7 would maintain current conditions. The net effect of proposed actions are predicted to increase the proportion of Healthy woody draws to about 60 percent, but decreasing conditions in 4 allotments could decrease this value to 58 percent.

Table 3.18 shows the initial actions under Alternative 4 would contribute to improved conditions in 22 of the 32 allotments that do not meet woody draw desired conditions.
Assuming that the statement made in Alternative 3 is applicable to Alternative 4:

- Slightly positive improvements would have a low potential to shift a large portion of woody draws from At Risk to Healthy condition.

Then of the 22 of the 32 allotments showing improved conditions, 5 allotments show an improvement which is high ("Positive") which means they can change a condition class. Those 5 allotments are #128, #133, #239, #243, and #272. Listed below is a summary for each of the 5 allotments as to the status of their woody draws (Chapter 2):

	Healthy	At Risk	Unhealthy	Total
• #128 – P. 4	12	6	1	19
• #133 – P. 140	1	2		3
• #239- P. 304		3		3
• #243- P. 346				

2	1		3
• #272- P. 430 Healthy	At Risk	Unhealthy	Total
	1	1	2

Assuming each allotment can take their "At Risk" status and "Unhealthy" status and move those towards the Plan objectives over the next 10-15 years, then they will have meet the objective.

There would be 15 more woody draws moving toward objectives. However, it is doubtful that the "Unhealthy" would make it all the way to "Healthy" condition, though the 13 woody draws in "At Risk" condition might. Those woody draws could count as improving the Healthy to 56%. But this isn't the objective. The Grassland Plan resource objectives for Woody Draws in the North Billings Project Area is, "to move at least 80 percent of riparian areas and woody draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability."

It is possible to count all 15 woody draws as achieving objectives and there would then be a 57% moving towards the Plan objectives but the FS is keeping track of the wrong objective. The FS is only looking at what is in "Healthy" condition and not what is moving towards healthy.

Of the remaining 17 allotments the degree of improvement would be relatively low, but still could be shown to move towards the objectives. Unfortunately, there is no way to ascertain this information because this analysis is too subjective to properly interpret the data.

The FS states that the net effect of proposed actions is predicted to increase the proportion of Healthy woody draws to 58 percent. They also conclude the following:

- The adaptive management options under Alternative 4 are the same as those in Alternatives 3 and 3A. The difference among these alternatives is associated with the rate of change. Because Alternative 4 initially takes **more aggressive action through reductions in Authorized Use and fencing** to address impacted woody draws and other resource concerns, **less time would be needed to further improve affected woody draws if monitoring indicated additional management changes were needed.**

The FS concludes that because they give substantial reductions at the beginning of the implementation of the Alternative and they do fencing in this alternative, they are somehow better prepared to make "to further improve affected woody draws" in the future. Moving from Alternative 3's 52% to 58% Healthy in Alternative 4 is not a quantum leap.

The question the FS should be asking is the merit of the sacrifice they are asking the MGA members to make for 6% difference between Alternatives 3 and 4. There are ways to implement Alternative 3 and achieve the objective of moving towards Plan objectives. But first, the FS needs to acknowledge they are not measuring the right objective.

None of the alternatives will achieve the Plan objective the way the FS is measuring it now.
RESPONSE: The SDEIS indicates that 21 not 22 of the 32 allotments would see improved conditions (see narrative below Table 3.18 (Volume I Chapter 3, page 160).

It is agreed that the goal is to move woody draws towards the objective of 80 percent Healthy. However, increasing from 51 to 57 percent Healthy is not a certainty and would be a modest increase at best. Several other draws could slightly increase in condition but not achieve a Healthy rating. However, the effects analysis objectively evaluated the effects of proposed actions and concluded that continuation of the same or similar grazing systems would not have a pronounced effect on woody draw conditions. Proposed reductions in livestock numbers would have a limited effect due to comparisons of proposed levels of Authorized Use with reported use during 2002 - 2008 (excluding 2005), and the disproportional effect of stocking levels on woody draw condition, i.e. it's the concentration of livestock in the draws more than the exact number.

C-3.146 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 4, page 161, it states:

- *Livestock grazing* has affected, and continues to affect, woody draws in the project area. In the past the effects of livestock grazing, in combination with climatic events (such as drought) and the homesteading use of the woody draws for building materials, fuel wood, and fodder, adversely affected many of the woody draws. The effects of the homesteading era have largely disappeared; however, the effects of livestock grazing, including trampling, trailing, lounging, browsing, etc., on woody draws continue. Livestock actions have adversely affected 49 percent of the surveyed woody draws in the project area.

Comment: Even though the FS attributes other activities as having an effect on woody draws, they place most of the blame on livestock grazing as the major contributor for the "42%" of woody draws labeled At risk and the 7% Unhealthy.

However, since the FS doesn't know in which direction the 49% is going, they cannot accurately assess corrective actions to achieve objectives.

Instead, they assume that reductions and fencing are the primary goals for the FS to improve woody draws.
RESPONSE: See Response to Comment C-3.12, C-3.132, C-3.135 and the cumulative effects section of the SDEIS (Volume I Chapter 3, pages 161 - 165) and the Botany specialist report.

C-3.147 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 4, page 163, it states:

- *Emerald ash borer* (EAB) is a potential future threat to the green ash draws. If the EAB becomes established in the green ash woody draws located in the western portion of North Dakota, they will likely eliminate the green ash from these draws.

Comment: The DPG should plan on this happening, because the EAB cannot be stopped. The EAB is coming and the DPG and MGA need to acknowledge it and adjust to what the woody draw will look like without green ash. The EAB is unrelated to livestock grazing.
RESPONSE: The Forest Service will have no option other than dealing with the emerald ash borer and its effects when and if it establishes in western North Dakota. It was never implied that the emerald ash borer was related to livestock grazing.

C-3.148 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 4, page 164, it states:

- The proportion of Healthy woody draws is predicted to increase from 51 percent at current conditions to 55 percent with actions of Alternative 3. The proportion of Healthy woody draws is predicted to increase from 51percent at current conditions to 59 percent with actions of Alternative 4.

Comment: The FS indicates that Alternative 3 will have 55% of Plan objective and Alternative 4 will have 59% of Plan objective for woody draws in 10-15 years. There doesn't look like a whole lot of difference for the sacrifice of the MGA members as a result of implementing grazing reductions and using the unpredictable "adaptive management" to make further reductions until objectives are met.
RESPONSE: The correct numbers involve Healthy woody draws increasing from 51 to 54 percent under Alternative 3, and to 57 percent under Alternative 4 (see Response to Comment C-3.145). See also Response to Comment C-3.12, C-3.132, C-3.135.

C-3.149 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 4, page 165, it states:

- However, Alternative 4 implements direct actions (fencing, reductions in Authorized Use, etc.) to reduce livestock disturbance; therefore, it could have a greater positive cumulative effect in a shorter timeframe.

Comment: Based on the analysis provided in this document, it is a stretch for the FS to put so much stock in the predicted outcome as to imply they have a greater positive cumulative effect in a shorter timeframe. Again, the FS isn't measuring the right objective.
RESPONSE: The effects analysis by allotment and alternative support the above statement in the SDEIS. Even the modest increase to 57 percent Healthy woody draws is acknowledged to be moving towards objectives. If as assumed in Comment C-3.145 that some draws would slightly increase in condition while not achieving a Healthy rating, the number and degree of these improvements would be greater under Alternative 4 than Alternative 3.

C-3.150 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 4, page 165, it states:

- Design and implement livestock grazing strategies to provide for thick and brushy understories and multi-story and multi-age structure in riparian habitats, wooded draws, and woody thickets, contingent on local site potential. Guideline (Grasslands Plan, pp. 1-13)

Comment: See comments #130-148.
RESPONSE: See Responses to Comments C-3.130 - C-3.148.

C-3.151 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences, Woody Draws, Alternative 4, page166, it states:

- Avoid grazing activities, such as feeding, which concentrate livestock in riparian/woody draw areas. **Guideline** (Grasslands Plan, pp. 1-19)

- *Feeding in woody draws is not allowed on any allotment in the project area. Annual Operating Instructions identify that feeding is not to be conducted in sensitive areas such as woody draws.*

- *Livestock are attracted to woody draws for a number of reasons, the primary ones being water and shade. Alternatives 3, 3A, and 4 implement a variety of different initial management actions, such as relocating water developments, fencing, reducing Authorized Use, etc., to reduce the effects of livestock on woody draws.* ***If initial actions were not successful in meeting this guideline, then adaptive options or other tools from the toolbox would be implemented under Alternative 3, 3A and 4 to achieve the guideline.***

Comment: The FS has included the above statement outlined in bold at every opportunity in the SDEIS. It is evident that FS is announcing that they will be able to continue reducing numbers until they get what they want without regard to the effects on cooperators or MGA members.
RESPONSE: See Response to Comment C-3.146.

C-3.152 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, page 166, it states:

- Today, the primary influences on herbaceous structure in the project area are generally limited to climate and livestock herbivory. Formerly, herbivory by wide ranging bison herds was one of high intensity and short duration followed by a 2- to 3-year period of rest (Higgins 1986). In contrast, grazing by domestic livestock is characterized by high intensity over long duration followed by short lengths of rest, depending on the grazing system and management scenario (USDA 2000 NGP Viability Report). These two scenarios produce differing structure mosaics across the landscape.

Comment: With the millions of buffalo that roamed the plains, it is improbably that there weren't places grazed with high intensity over long durations. The journals of Lewis and Clark state that many places on the plains were devoid of grass and riparian areas denuded of vegetation.

So, now the only way to get more high structure is to control the one variable that the FS actually can, and that is livestock. In the SDEIS it states:

- There is a need for continued livestock grazing to support local families and communities. Local ranch families depend on forage on these NFS lands to augment their own lands and raise livestock to provide an income for their families. Much of their income is spent locally and contributes to the general economic well-being of the community.

The Grassland Plan states that:

- One key goal of the Demonstration Project is to maintain or improve current on the-ground conditions while maintaining, to the maximum extent possible, a grazing program at current AUM levels and providing sufficient habitat for grassland species.

So far in the SDEIS the FS has not addressed this "one key goal." In fact, the FS has done everything to ignore that key goal and has proceeded in the opposite direction of that goal.
RESPONSE: The Forest Service agrees with the commentor regarding historic grazing by bison. See SDEIS Volume I Chapter 3 Herbaceous Structure Introduction, page 166; NGP FEIS, page 3-234; and USDA (2000 i.e. Terrestrial Assessment). See also Response to Comment C-3.3.

C-3.153 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Methodology page 167, it states:

- Within the herbaceous communities, VORs were taken on areas that were "biologically capable" of producing high structure. For this analysis, habitat types were used to define those areas. This approach is in keeping with the DPG direction identified for SRT Recommendation 1-3 in the DPG Final Response to the Scientific Review Team Report 2006. A habitat type is a unit of land that has similar soils, topography, aspect, climate, elevation, and potential vegetation. Habitat types identify, in terms of plant communities, what a particular area is capable of supporting, regardless of the existing plant community. The habitat types used to identify biologically capable areas were western wheatgrass/green needlegrass, western wheatgrass/green needlegrass/blue grama, western wheatgrass/needle-and-thread grass, silver sage/western wheatgrass, big sage/western wheatgrass, and western snowberry.

Comment: The FS states that VORs were taken on areas that were "biologically capable" of producing high structure. The MGA has challenged the FS definition of "biologically capable" and has offered better science than the FS is using to determine "biologically capable."

From Dr. Kevin Sedivec's work, MGA has determined the following:

The below figures represent the production needed on clayey, loamy and sandy sites for these soils to be "biologically capable" of producing a VOR reading of 3.5 at peak production (see below).

- **Clayey = 1661 lbs/ac.**
- **Loamy= 1638lbs/ac**
- **Sandy= 1694lbs/ac**

If VORs are measured in the fall (Oct-Nov), such as the Forest Service does, then you will have to account for senescence, which is a 35% increase in production for each clayey, loamy and sandy site to get a VOR reading of 3.5 (see below). This will then give you an average biomass stand on Nov. 1 of **1661lbs/ac for Clayey; 1638 lbs/ac for Loamy; and 1694lbs/ac for Sandy.**

- Clayey= 1661 lbs/ac. x 1.35 (35% increase) = 2242 lbs/ac
- Loamy= 1638 lbs/ac x 1.35 (35% increase)= 2211 lbs/ac
- Sandy= 1694 lbs/ac x 1.35 (35% increase)= 2287 lbs/ac.

This is much different from the FS's use of "biologically capable" habitat types that range from 1100 lbs /ac to 1400 lbs /ac. The FS decided that the above was "inadequate science" and continued to use their definition of "biologically capable." The FS dismissal of NDSU data and conclusions is baffling. FS helped design the study, funded it and approved the protocol. The SDEIS does not say NDSU failed to follow the protocol. One can only conclude that the FS does not like the answers -- and is trying to discredit the work for that reason alone.

The FS states in the SDEIS:

- For this analysis, habitat types were used to define those areas. This approach is in keeping with the DPG direction identified for SRT Recommendation I-3 in the DPG Final Response to the Scientific Review Team Report 2006.

The FS first starts to justify their definition by referring to the SRT report. Issue I-3 and the SRT recommendation from the SRT report states:

- **Issue I – 3:** There is, at present, a lack of information to define "Biologically Capable" acres to meet structure goals.

  Presently the FS defines "Biologically Capable" as "herbaceously-dominated soils capable of producing at least 800 lbs/ac"(Gary Foli and Arden Warm's presentation to the SRT on March 10, 2004). Based upon best available information from the area (Vader 2000), the SRT believes this level of annual production will be unlikely to produce an herbaceous structure resulting in a transect Visual Obstruction Reading (VOR) of at least 3.5 inches.

  For example, Vader (2000) reported that an ungrazed Shallow Ecological Site had a mean herbaceous production of nearly 1100 lbs/ac, while VORs for the site averaged 2.4 inches. A Silty Ecological Site produced over 1400 lbs/ac of herbage and yielded a mean

VOR of2.8 inches. Finally, an Overflow Ecological Site, dominated by western snowberry, yielded approximately 3500 lbs/ac standing crop with an average VOR of 10.5 inches.

Recommendation I – 3: The SRT recommends studying and revising the definition of' Biologically Capable" to accurately reflect the capability of the soils and plant communities to meet structure goals for the gallinaceous Management Indicator Species.

The SRT never offered any science on habitat types or their opinions relating to biologically capable. In fact, the SRT stated no data showed the production necessary and urged the FS to initiate research.

The DPG response to this issue is as follows:

- **DPG Response**

The Grasslands Plan calls for diversifying vegetative structure. Specifically, there are objectives and guidelines to have approximately 10-20 percent low vegetative structure, 50-70 percent moderate structure, and 20-30 percent high structure (actual objectives vary by Geographic Area). These objectives are to be applied across all herbaceous communities.

We have interpreted these objectives and associated guidelines to apply only to sites "biologically capable" of producing high structure vegetation. The SRT is supportive of this concept, but questions the definition of biologically capable as any site capable of producing at least 800 lbs of herbaceous material/acre. *This is not the definition used by the DPG.*

Throughout the SRT review process we defined biologically capable as any site classified as one of the following habitat types: western wheatgrass/green needlegrass, western wheatgrass/needle-and-thread grass, needle-and-thread/sedge, silver sage/western wheatgrass, big sage/western wheatgrass or western snowberry. Sites dominated by crested wheatgrass were also considered biologically capable.

These habitat types, as well as crested wheatgrass sites, are generally capable of producing 1100 lbs of herbaceous material/acre, and most are capable of producing 1400 lbs or more. The exception is the western snowberry habitat type (which is rarely found on the DPG). Although the western snowberry habitat type produces relatively little herbaceous cover, it is nevertheless capable of producing high structure vegetation.

Over the last several years, monitoring shows the above habitat types (and crested wheatgrass sites) are all capable of producing high structure vegetation, and therefore are a reasonable definition of biologically capable. Based on the SRT's input, we will continue to monitor and evaluate this relationship as we update AMPs.

The FS has conveniently forgotten about the SRT comment that," Vader (2000) reported that an ungrazed Shallow Ecological Site had a mean herbaceous production of nearly 1100 lbs/ac, while VORs for the site averaged 2.4 inches. A Silty Ecological Site produced over 1400 lbs/ac of herbage and yielded a mean VOR of2.8 inches. Finally, an Overflow Ecological Site, dominated by western snowberry, yielded approximately 3500 lbs/ac standing crop with an average VOR of 10.5 inches." This should have been the first place the FS would start to look at what ecological sites might be biologically capable. The research cited by SRT discredited the FS's working assumptions, that 1400 lbs per acre production was sufficient to meet VOR.

The FS instead chose to say that throughout the SRT review process we (the FS) defined biologically capable as any site classified as one of their five habitat types. The FS goes on to say "these habitat types, as well as crested wheatgrass sites, are generally capable of producing 1100 lbs of herbaceous material/acre, and most are capable of producing 1400 lbs or more." The FS concludes their response with:

- Over the last several years, monitoring shows the above habitat types (and crested wheatgrass sites) are all capable of producing high structure vegetation, and therefore are a reasonable definition of biologically capable. Based on the SRT's input, we will continue to monitor and evaluate this relationship as we update AMPs.

The FS has not offered any science for their conclusion about their habitat types. And, they have not used the SRT's input, because they ignored the input on Vader (2000). The FS obtained their information on habitat types from the work completed by Mark Jensen et al. when they published a draft in 1992 of "Ecological Sites and Habitat Types of the Little Missouri National Grasslands and Western North Dakota.

The FS is also using the most recent work by Jeff DiBenedetto, et al. in their draft of 08/14/2011 called "An Ecological Classification for Mixed Grass Prairie Ecosystems of the little Missouri National Grasslands and Southwestern North Dakota." When Jeff DiBenedetto was contacted about his work, he offered the following:

- When asked if he could send his transects and locations on the production clippings they did for the 1992 draft, he said they did not do any transects, it was all ocular estimate.
- When asked he used a double sample method, clipping once at the start of the day and then again right after lunch, for training one's eye on how much production they are looking at, he responded that they did not.
- When asked for his transects on the canopy coverages, he said they did not do any transects, it was all ocular estimates.
- When asked if he could determine if the habitat types in his draft publication were biologically capable, he responded that their publication wasn't intended to do that, and we would have to ask some one else that question.

Jeff DiBenedetto et al.'s latest draft publication is based entirely off the 1992 draft publication. No new transect or ocular estimates were taken for the new draft. The SDEIS's reliance on the work is clearly flawed.

The FS contends that over the last several years, monitoring shows the above habitat types (and crested wheatgrass sites) are all capable of producing high structure vegetation, and therefore are a reasonable definition of biologically capable. The monitoring data the FS is referring to are VOR transects taken from 1996 to 2010 and the use of the "Dragon "data. In SRT Issue 1-1 it states:

- The SRT believes that the Dragon data set, at best, adequately reflects broad-based, landscape level vegetation community composition and structure. However, the SRT has serious reservations about its effectiveness as a management tool at the allotment or pasture level. This is because the Dragon data "habitat types" are based on high-altitude imagery that does not appropriately consider or accurately reflect the detailed impacts that different soils, slopes, and aspects have on both current and potential vegetation and plant species composition at the individual pasture or allotment level. This is in contrast to mapped Natural Resources Conservation Service (NRCS) ecological sites, wherein soil series are the principal mapping units that define each site. Moreover, because the NRCS has a wealth of information on most ecological sites relative to actual and potential plant species composition, herbage production, ecological condition, successional pathways, etc., instances where mapped NRCS soil series/ecological sites are available greatly enhances management's ability to accurately estimate and predict the effects of various land management strategies and tactics at the individual ecological site level.

Any use of the Dragon data should be removed from this document.

A case in point would be an email from Arden Warm to Jeffery Adams, dated September 20, 2010 that says:

- Jeff, I've got a couple of spread sheets here that outline those transects that reached high structure (□ 3.5"). The first one is all transects from 1996 to 2008 or 2009, I think. And right now, it's only Medora RD transects.

The spreadsheets show the DTG Code as Dragon data.

Also, the SRT found that the VOR field methodology was neither well defined nor standardized between 1996 and 2006.

RESPONSE: The Forest Service never said the cooperative monitoring data collected by NDSU was "inadequate science". Cooperative monitoring data was used in relevant portions of the SDEIS. The reasons for why it was not used for the VOR assessment can be found in the SDEIS Volume I Chapter 3, page 169. Appendix B, Wildlife specialist report, more fully describes the rationale as to why various studies are not applicable to the VOR assessment.

The use of *Ecological Sites and Habitat Types of the Little Missouri National Grasslands and Western North Dakota* (Dibenedetto) for VOR data collection has been limited to stratification of mapped HTs to place the VOR transect. During the NGP analysis, range and wildlife professionals used the classification to help identify upland sites that possessed

the general combination of species composition and productivity to produce high structure (i.e. "biologically capable"). The species composition within the habitat types is similar to those identified in grouse habitat studies done on the LMNG such as Bernhoft (1969), Kohn (1976), and Christenson (1970).

As stated above, the Dragon code simply identifies the habitat type (HT) code necessary for the stratification. This is to help evaluate the various HTs (Grasslands Plan, Chapter 4) as well as address SRT and others' request to monitor for VOR validity.

Refer to Response to Comment C-3.58, C-3.92 and C-3.95. See also SDEIS Volume I Chapter 3, Capability, pages 176 and 177.

The SRT Issue II-I is as follows:

- ***SRT Issue II - 1:*** *Field methodology is neither well defined nor standardized.*

  Because of the ease of using the Robel pole, especially in comparison to more detailed but time consuming methods such as the Wiens rod (Wiens 1969), and studies that showed that its readings reflected habitat preference for a number of wildlife species, it became a common tool used by wildlife investigators and managers (common, but not standardized). As the use of the Robel pole spread, adherence to protocols established by Robel et al. (1970) did not. Variants on the pole itself and on how readings were taken blossomed. For example, Kirsch et al. (1978) in an early application to waterfowl nesting habitat indicated that they used a "slightly modified version" of the Robel method, without indicating what those modifications were. Changes in pole shape (from round to square) or diameter (3 em to 2-inch) occurred. Some poles were marked in decimeters; others were in fractions of decimeters or even in inches. Readings also varied. Some observers recorded the lowest number visible, others recorded the highest number not visible, and some interpolated. Some of these variants likely represented changes thought to be improvements, at least in the situations to which they were applied. Others may have resulted simply from expediency-- perhaps square poles were easier to obtain than round poles. Many changes simply resulted from inattention or indifference to the established protocols. Regardless of their etiology, variations in the methodology pose problems when applying the Robel method, especially at a broad scale, for multiple objectives or in contentious situations. If management for a particular species is a goal, for example, evaluation of management practices might be based on published research that describes appropriate habitat for that species. If appropriate habitat has been described through research using Robel readings, the evaluation of management practices based on Robel readings should be obtained by the same protocol. (There is another issue involving how habitat needs of species might vary geographically, or temporally, but that is not relevant to this discussion.) If multiple objectives are being evaluated by Robel readings, problems may arise if studies that addressed those multiple objectives used different variants of the Robel methodology. Clearly, a systematic assessment of the consistency of Robel methodology would be worthwhile.

- ***SRT Recommendation II – 1:*** *Standardized protocols should be adopted and training provided for consistency among years and observers using the Robel pole method.*

The DPG response to this is stated:

- In the future, our monitoring efforts will be focused to address the question: "are we meeting Grasslands Plan objectives for low, moderate, and high vegetative structure?" The protocols needed to answer this question have been developed and standardized in recent years with peer review. These protocols have been incorporated into the DPG's "Monitoring Handbook," which will be finalized in December 2006. That handbook, and associated field training, will be provided to all field observers collecting VOR data in the future.

The SRT report was finalized in May 2005 with the DPG final response completed in October 2006. Standardized protocols were not finalized into the DPGs "Monitoring Handbook," until December 2006. This would put standardized protocols into the field in 2007. The SRT told the FS to not use the VOR data gathered between 1996 and 2006 because the *field methodology is neither well defined nor standardized.* The FS accepted that fact by committing to new protocols.

Even with well-defined standardized field methodologies, training had to take place to get everyone on the same page for using the VOR methodology. It is unclear if this happened or when it might have taken place. However, FS personnel have seen the following:

- When it comes time to read VORs, all hands are on deck to do so. Crews not usually required to perform this methodology, i.e. minerals crews go out and read VOR transects. They are required to have a trained specialist with them. This doesn't always happen and crews are left to read VORs without training or a trained specialist with them.

- Some resource specialists stomp the grass around the pole before placing it to conduct VOR readings, making the readings extremely low. This is either ignorance or a deliberate effort to bias the readings.

- The methodology protocol does not require the re-calibration of the rope connecting the two poles. This is needed because that rope can stretch, sometimes up to 2 -3 inches, throwing the readings off.

- The protocol does not account for whether a person is personally biased to read "higher" or "lower" which most people are one way or the other. This can affect readings.

- Training isn't always provided to the crews per the existing VOR protocol.

Inconsistencies such as these lack the objectivity needed as a FS rationale to enforce grazing reductions to MGA members. As stewards of the public lands, it is incumbent upon FS to objectively study and measure rangeland capabilities. These inconsistencies also discredit the FS commitment to objective data collection.

RESPONSE: Nowhere in the Report of the SRT (2005) did the SRT tell the Forest Service "not to use the VOR data gathered between 1996 and 2006…" In fact the SRT would not have had access to VOR data collected in 2005 and 2006 since their final report was presented in May of 2005.

When it comes to VOR data collection time frame, the work load typically falls to range conservationists, the biologists, and the botanists. Most of the individuals doing the surveys have several years of experience with the methodology. At times, if they are available and willing, other members of the unit are utilized. If so, they accompany an experienced member until they are comfortable with the methodology.

Without providing a citation documenting which Forest Service employees have made these observations, it is simply hearsay to assert that resource professionals would "stomp the grass around the pole" to obtain a low reading.

The recalibration of the VOR pole dimensions, such as the rope length, is not in the protocol. The stretching of the rope is not expected to skew the readings in a statistically significant way.

The protocol from 1996 to present has always been to read the lowest visible band on the pole. It is possible and probable that some personnel may see a different band than another on a specific reading. However, given the transect length is 20 stations, averages are expected to be within approximately one-half inch (Schenbeck 1996) and perhaps less.

Training isn't always required because the field crews (range conservationists, biologists, and botanists) are typically very experienced in the methodology. Most have 10 years or more experience. If inexperienced individuals participate, they accompany an experienced member or crew to gain an understanding and working knowledge of the methodology.

Refer to Response to Comment C-3.119.

C-3.154 In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Methodology, page 168, it states:

- Sites dominated by crested wheatgrass were also considered biologically capable.

Comment: Sites dominated by crested wheatgrass are changed sites from the usual native loamy, clayey or sandy sites. They were usually plowed up and lost most of their topsoil during the 1930s dust bowl. No one has accounted for this loss to see indeed if they still are biologically capable.
RESPONSE: Crested wheatgrass sites can produce as much as 1.5 to 2 times more than a native stand and often shows up in high structure readings. Sharp-tailed grouse in western North Dakota use these stands as well (Kohn 1976, Bernhoft 1969, and Christenson 1970). See also SDEIS Volume I Chapter 3 page 168 and DPG Final Response to the SRT Reports (2006) Issue I-3, pages 5 and 6.

C-3.155 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Methodology page 168, it states:

- If transects located in the three grass/shrub habitat types were dominated or co dominated by shrubs, they were separated in the analysis. This was done because it is generally considered inappropriate to analyze or lump shrubs and herbaceous dominated data together (Uresk, personal communication, 2009; Smith 2008).

Comment: The reason Dan Uresk makes that statement is because he hasn't developed a VOR protocol for shrub dominated communities yet. Dan Uresk said that shrub communities with approximately 5% or less canopy coverage can be included in the analysis. With any denser coverage the shrubs are too thick to see through and shrub biomass cannot be accounted for. However, the FS never indicated which transects had less than 5% canopy coverage. The FS may have separated those transects in the analysis, but they also never used them in the analysis. This suggests an attitude that if you can't sample it, it doesn't count. What this means is the 8,357 acres of the three (3) shrub dominated habitat types in the project area cannot be included in the biologically capable acres. This would mean under the FS definition of biologically capable there would be 46,018 ac. of biologically capable habitat types.
RESPONSE: See the Wildlife specialist report Appendix A, pages 48 and 49.

C-3.156 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Methodology, page 168, it states:

- However, interpreting station averages requires a different definition for high structure in order to account for the actual nest site needs of sharp-tailed grouse and other ground nesting species, such as Baird's sparrow. **It** was recommended during the SRT process that a station average of 5.5 inches or greater would define High structure (see Final Response to the SRT Reposts, Recommendation II-2). This analysis adopted that recommendation.

- During the SRT process, the focus of the station average versus transect average discussion was about High structure and whether one method would produce better information than the other. Apparently there was no discussion about the class sizes for Low and Moderate structure related to the station average approach. For the station average analysis, Low structure was defined as 0 to 1.49 inches and Moderate as 1.5 to 5.49 inches.

Comment: The FS comment that, "It was recommended during the SRT process that a station average of 5.5 inches or greater would define High structure" is not true. In the SRT report it states:

- In another scenario, if you had a desired vegetation height at nest sites (e.g., 5.5 inches) a logical questions would be, "How many stations were 5.5 inches or greater?"

The SRT gave this as an example, not a recommendation as the FS states in their DPG Response. There was no science offered by the SRT for the 5.5 inches. It was an example, as indicated by the wording, "In another scenario." Upon checking with several of the SRT members, they indicated the same thing, it was an example. After talking with Dr. Douglas Johnson, research statistician who designed the station level transect, he said he didn't know from where the 5.5 inches derived.

The FS states that this analysis (SDEIS) adopted that recommendation. The FS adopted an example, not a recommendation. It is an example without science behind it.

The FS also states Low structure was defined as 0 to 1.49 inches and Moderate as 1.5 to 5.49 inches. Is there any science behind this, since the 5.5" was merely an example?
RESPONSE: The Forest Service recognizes that "recommended" may be an incorrect word, whereas "example" may have been a better choice. The 5.5 inch "example" shows itself to be a reliable estimate considering the scale of management that the Forest Service works within and the number of species that use the grasslands. It is on the lower end of the average grouse nest habitat, but on the upper end of Baird's sparrow territories and Sprague's pipit habitat. See also DPG Final Response to the SRT Reports (2006), DPG Response to SRT Issue II-2 page 8.

C-3.157 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Cooperative Monitoring Data, page 169, it states:

- The NDSU and Forest Service VOR data sets are not compatible because of differing objectives, design criteria, and methodologies; therefore, the 2008 and 2009 VOR data could not be used in this project analysis.

Comment: The NDSU data are again not being used in the SDEIS analysis. Why did the FS approve of a method that wouldn't be useful in the analysis of the project area? By excluding the data, which did not support the FS conclusion, the FS used the earlier flawed data some of which was taken from drought years.
RESPONSE: See SDEIS Volume I Chapter 3, Cooperative Monitoring Data, page 169 and the Wildlife specialist report Appendix B.

C-3.158 In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, pp.
169-170, it states:

- VOR measurements were used to describe the existing condition of herbaceous structure in the project area. The LMNG has been collecting VOR measurement since 1996. Between 1996 and 2001, structure data was collected on approximately 350 transects scattered across the LMNG. This broad-scale effort was used by the Northern Great Plains Land and Resource Management Plan Revision process to identify how structure was distributed across the landscape. In general, this information showed that grassland structure across much of the LMNG was strongly skewed towards the lower levels (NGP FEIS, pages 3 to188).

- Transects located on NFS lands in Billings County were segregated from the above data set and analyzed. Figure 3.14 shows the range of High, Moderate, and Low structure from transects surveyed from 1996 through 2001 in Billings County.

- Figure 3.14 shows that between 1996 and 2001, in Billings County, 3 to 8 percent of the surveyed transects had a VOR average greater than 3.5 inches (High structure), approximately 47 to 83 percent averaged a VOR rating of 1.5 to 3.5inches (Moderate structure), and roughly 11 to 49 percent had VOR ratings of less than 1.5 inches (Low structure). This transect information shows that herbaceous structure during that time period was skewed towards Low and Moderate classes with a minor amount of High structure.

Comment: This whole section refers to LMRP VOR data collected between 1996-2006, pages 169, 170, and 171. The SRT concluded this data should not be used. See Comment #153 above.
RESPONSE: See Response to Comment C-3.153, C-3.8,See DPG Final Response to the SRT Reports 2006, DPG Response to SRT Issue II - 1 page 7.

C-3.159 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, page 171, it states:

- In 2004, a total of 183 VOR transects were located in the project area. This represents a sampling intensity of approximately 1 transect per 320 acres of biologically capable habitat type. Of the 183 transects 22 had shrubs (such as western snowberry or silver sage) listed as dominant or co-dominant vegetation on the data sheets. These transects were separated in the analysis because, as previously stated, it is thought to be generally inappropriate to analyze or lump shrubs and herbaceous dominated data together (Uresk, personal communication, 2009; Smith 2008).

Comment: The FS gathers VOR data from 183 transects collected in 2004, a severe drought year. The FS is again biasing their data by collecting in a drought year. The SRT said this data should not be used.

See Comment #153.
RESPONSE: See Response to Comment C-1.3, C-3.158 and C-3.153, See DPG Final Response to the SRT Reports 2006, DPG Response to SRT Issue II - 1 page 7.

The Forest Service cannot locate where the SRT noted that 2004 (VOR) data "should not be used." In fact, on page 18 of the SRT Report (2005) they suggest consideration of Visual Obstruction Reading as an index to standing biomass that is often a useful proxy for the height and density of vegetation.

C-3.160 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, pp. 171-172, it states:

- The 2004 transect information (Figure 3.16) shows that approximately 53 percent of the transects were in the 1.0- to 1.49-inch class (Low structure), 47 percent in the 1.5- to 3.5-inch class (Moderate structure), and 1 percent in the greater than 3.5-inch class (High structure). This information shows that structure in the project area continued to be skewed to Low and Moderate structure, with insufficient High structure to meet Grasslands Plan objectives.

- It is important to put 2004 in context of what was happening climatically. According to the North Dakota Agricultural Weather Network (NDAWN), during the months of April through September 2004, precipitation in Billings County, ND, was approximately 50 to 75 percent of normal for the analysis area. The Grasslands Plan (p. G-15) defines drought as 75 percent or less of normal annual precipitation.

Comment: Arden Warm is correct in his following statement:

- It is important to put 2004 in context of what was happening climatically.

Specialist Warm stated in his report that 2004 was a "drought year" for the North Billings Project area. Specialist Warm was wrong. It was a "severe drought." Analysis of any project based on a severe drought year is flawed and should not be used. MGA requests the FS not use Specialist Arden Warm's report in the North Billings project

In March of 2011, Forest Service Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops:

- The FS will not use a drought year as the basis for any analysis.

Several scientists, like Dan Uresk, when asked if they would ever base their analysis on a severe drought year, they stated that doing analysis during a severe drought year and then basing your results on it is not science. It is definitely the wrong thing to do. They indicated that basing any results on a severe drought year will skew your results and make them meaningless.

Specialist Warm was wrong to base his Wildlife Report on 2004, a severe drought year, and the FS was wrong to accept it and include it in this document. The whole section and the resulting findings and conclusions should be removed from the SDEIS.

See Comment #12.
RESPONSE: See Response to Comment C-1.3 See also Grasslands Plan Chapter 1 Section F, page 1-13 #1 (modified from Standard to Guideline per Livestock Grazing ROD 2006). See Response to Comment C-3.12.

C-3.161 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, page 173, it states:

- Table 3.20 summarizes where each allotment falls in relation to Grasslands Plan structure objectives. Review of the 2004 transect data, field visitations (2006), and

IDT discussion determined that structure objectives were being met on allotments 132A, 239, 241, 243, 248, 282, 287. A total of 12 allotments are not meeting Low or High structure but are meeting Moderate objectives. Twenty-one allotments are not meeting any of the objectives. Two allotments are meeting Low structure but not Moderate or High structure objectives. One allotment is a hay pasture.

Comment: That Table 3.20 is based on 2004 transect data makes the summary of the allotments unreliable. Using 2004 data definitely put more allotments in the low and moderate structure than data that is based on an average year, or a series of years that not only were drought years but also has an above normal year like 2010 or 2011, that would be fair.

This is not a true picture of how much High structure can or does exist on the project area.

The FS would normally not use a drought year, much less a severe drought year as a benchmark just like they wouldn't use an above normal year like 2010 or 2011 as the benchmark.

Table 3.20 shows the following: Of the 42 allotments that are counted toward herbaceous structure:

- 7 allotments are meeting High structure objectives, 35 allotments are not
- 12 allotments are meeting moderate structure, 30 allotments are not
- 2 allotments are meeting low structure, 40 allotments are not

In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure.

Any transects measured in 2005 are not usable since it snowed before they were read. The FS read the transects after the snow storm flattened the vegetation.

2005 was also the year after the severe drought and it should not be used as a stand alone year to determine structure.

2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005. In short, the SDEIS used the worst production years to assess High Structure.

The following guidelines were used by MGA to determine herbaceous structure for each allotment given the FS used drought years to collect their data.

- 2004 was a severe drought year; it should not be used as a reliable source of data for herbaceous structure.

- 2005 was the year after the drought; it should not be used as a standalone year to determine structure. It also had a wet snow storm (2-3”) on Oct. 3-4 and once it snows VOR transect readings are done.

- If an allotment has only 2004 readings, then the structure is labeled as "cannot be determined".

- If an allotment has only 2004 and 2005 readings, then the structure is labeled as "cannot be determined".
- If an allotment tried to use 2005 and 2006 readings, then the structure data was used to determine an estimated structure, although very unreliable.

- Visual observations in 2006 are not sufficient to make a determination of structure in this case where reductions are determined from the observation.

When the above guidelines are applied to the 42 allotments that are counted toward herbaceous structure, the following results were obtained:

- 37 allotments had a herbaceous structure that "cannot be determined".
- Of the remaining 6 allotments:
  - 3 allotments met or exceeded High structure;
  - 6 allotments met or exceeded moderate structure;
  - and 2 allotments met or exceeded low structure.

Because of FS bias used in obtaining VOR data they do not have enough data to determine herbaceous structure on the project area or whether MGA can or is meeting the plan objectives.
RESPONSE: Further monitoring will provide data over many years that should include a spectrum of differing weather patterns. VOR data from 1996 to 2001 and other sets of data can shed some light about VOR under various weather patterns and grazing management.
See SDEIS Volume I Chapter 3, pages 169 - 173.
See Response to Comments C-1.3 and C-3.160.

C-3.162 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, Field Visitations- 2006, page 173, it states:

- Results of the 2004 data collection were shared with the grazing permittees in the project area, who were then given the opportunity to challenge an issue if they felt their allotment was meeting Grasslands Plan objectives. Several permittees issued challenges related to the amount of High structure present on their allotments. The IDT revisited these allotments and several others in 2006 and ran additional VOR transects. The transect locations were purposely biased to survey areas of the highest structure that could be found. Allotments 1261128, 127, 129, 132A, 239, 272, 278, and 281 were revisited. Two allotments, 132A and 239, had at least 20 percent High structure, the remaining allotments did not meet the High structure objective.

Comment: Why would the FS offer the opportunity for the members to challenge the data? If the FS had taken the members with in the first place, they wouldn't of had to offer the challenge to the members. The FS's motives for this look questionable on proving their point on 2004 data. This is an example of FS's lack of collaboration with the MGA in the data collecting process. It

is another example in how MGA has to refute FS actions as incorrect or imprecise after the fact rather than working with them prior to data collection. Redoing transects during a drought is equally flawed.
RESPONSE: In the spirit of collaboration, the IDT determined that given the concerns over the use of VOR and herbaceous structure for monitoring wildlife habitat, it would be the "right thing to do" to open up an opportunity to allow "challenges" to the interpretation of the data as well as offer an opportunity to inform members about the use of the VOR method. This opportunity allowed members and the ID team to get together in the field. It should also be noted that the MGA board of directors was invited to attend VOR data collection efforts.

Refer to Response to Comments C-1.3, C-3.161, D-2.1, and D-2.8.

C-3.162a – The two transects placed in allotment #126 had VOR readings of3.44" and 3.5". These could have easily been High structure considering the degree of variance around the band width readings and the degree of variability in the VOR methodology itself, which for the Little Missouri National Grasslands is 10-15%, and could be as high as 15-20%.

For the FS to take such a rigid stance on VOR readings and imply they are that accurate (tenth of a decimal) is incorrect. And for the FS to believe that only two transects in a 4100 acre allotment is enough to sample the allotment statistically and then give reductions based on this kind amount of information is unprofessional. Even a 10% variance would put both readings over the 3.5" mark.
RESPONSE: The two transects mentioned were placed in what appeared to be the highest cover available according to the MGA member authorized to run livestock in that allotment and the Forest Service personnel that accompanied him. These transects were surveyed in mid-September prior to the first hard frost, outside the normal protocol, thus providing the potential for averages skewed towards a higher value. To maintain credibility with all sides of the grazing management issue, the Forest Service could not compromise by calling them "high structure." See Jack Dahl November 8, 2006 letter to the project file documenting the field visit to Allotments 126, 128, and 281 (Project Record, Supporting Documentation – Herbaceous Structure/Wildlife, L-80 CD – VOR & Misc.).

The two transects were placed in areas that the MGA member authorized to run livestock in that allotment believed had the greatest potential to achieve high structure. The fact that neither area pointed out by the permittee achieved high structure indicates that the team's assessment is correct. Also, the conclusion is not that "the allotment has no high structure" but that it does not have a sufficient quantity of high structure to meet Grasslands Plan objectives.

C-3.163 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, VOR at the Station Scale, page 174, it states:

- High structure for station averages is a VOR of 5.5 inches or greater (ibid.). The primary concern during the SRT process was with High structure; however,

all three structure levels are provided in Figure 3.17, which summarizes the station data for herbaceous dominated transects within the project area.

- The Grasslands Plan identifies structure objectives. Specifically, in order to meet the structure objectives, there must be approximately 10-20 percent Low vegetative structure, 50-70 percent moderate structure, and 20-30 percent high structure (Grassland Plan, Ch 2, pp. 2-13 and 2-21).

- The Visual Obstruction Reading (VOR) methodology is used by the DPG and in this analysis to measure and quantify residual herbaceous cover, i.e., structure. The Grasslands Plan describes desired structure in terms of VOR. The VOR measurements associated with each structure class are: low structure at 0 to 1.49 inches, moderate structure at 1.5-3.5 inches, and high structure at greater than 3.5 inches (Ch.2, pp. 2-13, 2-21).

Comment: The FS continues to provide a very biased report by continuing to use 2004 data as their benchmark or at least as the basis for comparison.
The validity of the VOR at the station scale-5.5" has already been addressed in Comment #156.

On pages 2-13 and 2-21 of the Grasslands Plan, Badlands Geographic Area and Rolling Prairie Geographic Area under "Composition" it addresses desired structure objectives as:

• Low	Moderate	High
10-20%	50-70%	20-30%

The Visual Obstruction Reading (VOR) methodology is not referred to in Ch.2, pp. 2-13,2-21 of the Grasslands Plan as indicated above.

See Comments #158, 159, 160 and 161.
RESPONSE: The specific VOR methodology is not mentioned in the Grasslands Plan. However, as outlined in Appendix B of the NGP FEIS, it follows logically that the method would remain due to consistency reasons.
See Response to Comments C-3.156, C-3.158, C-3.159, C-3.160, and C-3.161.

C-3.164 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, VOR at the Station Scale, page 174, it states:

- As previously noted, 2004 was a dry year, so an increase in Low structure and a decrease in High structure would be expected but not to the degree indicated by the data. The 2005 data show about a 1 percent recovery in High structure and approximately an 18 percent reduction in Low structure. These changes could be explained by increased precipitation and the mandatory 20 percent animal unit reductions and turnout restrictions put in place in early 2005.

Comment: As previously noted, 2004 was a "severe drought" year.

The FS states that an increase in Low structure and a decrease in High structure would be expected but not to the degree indicated by the data. Why not? As stated by the FS on page 172, "Given the climatic events in 2004, a reduction in High structure would be expected, but not to the 0.6 percent level." Does the "0.6% level" have any significance?

The literature doesn't state that there is a standard by which you can judge the reaction of any resource to severe drought. Saying High structure shouldn't have had such a severe reduction, is like saying Low structure shouldn't have had such a severe reduction in 2010 and 2011 during extreme moisture conditions.
RESPONSE: The near total absence of High herbaceous structure and the overabundance of Low herbaceous structure should not be expected or desired as it does not meet Grasslands Plan direction. The very low level of high structure does not sufficiently address the Grasslands Plan direction (pages 1-3 and 1-13) to reduce the effects of drought on wildlife. See Response to Comments C-3.160 and C-3.165.

C-3.165 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, VOR at the Station Scale, page 175, it states:

- A comparison of 2004 and 2005 VOR data for project-level transect averages and station average method is presented in Table 3.21. Information in the table indicates that while there are some differences in the figures, they are minor in nature. Both methods of analyzing the VOR data show a skewed distribution of structure towards Low and Moderate structure classes and a minimal amount of High structure. As noted previously, High structure for the VOR transect average is a VOR reading of greater than 3.5 inches, and for the station average a VOR reading of greater than or equal to 5.5 inches.

Comment: If the FS wanted to establish a baseline or a benchmark year then an average moisture year would have been established protocol. However, to use 2004, a severe drought year, and compare it to 2005, the year after a severe drought year, is not an acceptable practice. Both of these could be used as a benchmark for Low Structure. In order to follow accepted practice, then years like 2010 and 2011 would be used as baselines and benchmarks for High structure. 2004 and 2005 should never be used to proceed to give reductions base on a Low structure benchmark.
RESPONSE: Nowhere in the VOR protocol does it speak to monitoring only in average moisture years for a baseline. See Response to Comment C-1.3, and C-3.160.

C-3.166 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Affected Environment, Summary, page 175, it states:

- It is acknowledged that 2004 was a drought year and that structure would tend to shift towards Low and Moderate; however, the near total absence of High herbaceous structure {<1 percent) should not be expected or desired (Grasslands Plan, p. 1 to 13). Because of a lack of residual structure from 2004, herbaceous

structure remained below structure objectives for 2005 despite moisture recovery, stocking reductions, and tum-out restrictions. Analyzing the allotment VOR data under the transect and station methodologies provided essentially the same results.

Comment: The FS does acknowledge that 2004 was a drought year. What they do not acknowledge is that using the VOR data from 2004 & 2005 to base reductions on is incorrect?
RESPONSE: See Response to Comments C-1.3, C-3.160 and C-3.165.

C-3.167 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Desired Condition, page 176, it states:

- *Objective:* Within 10 years, implement management practices, including prescribed fire that will move landscapes toward desired vegetation composition and structure as described in Geographic Area direction" (Grasslands Plan, Ch 1, p 1-3).

Comment: On page 166 of the SDEIS it states:

- The analysis area for herbaceous structure is the NFS lands located in the 43 grazing allotments located in northern Billings County, ND. As there are no other management factors influencing structure located outside of the area that would dictate a different analysis area, this is an appropriate analysis area for structure. The temporal setting is 10 to 15 years from the signing of the ROD for this project proposal.

The monitoring and achievement of objectives should be set and measured against the spatial and temporal setting timeframe, 10-15 years.
RESPONSE: The Forest Service agrees. Grasslands Plan objectives identified for the North Billings project area should be met or have movement towards them within a 10 to 15 year time span.

C-3.168 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Desired Condition, page 176, it states:

Table 3.22 – Grasslands Plan structure objectives for the Rolling Prairie and Badlands Geographic Areas

Structure Objectives		
Low	Moderate	High
10-20%	50-70%	20-30%

Comment: The structure objectives for herbaceous structure are to be obtained at the end of the spatial and temporal setting timeframe for the project area. The objective is meeting or moving towards which requires trend monitoring. This is not stated in the SDEIS.

RESPONSE: The SDEIS in the first paragraph on the commentor's indicated page (176) clearly states, "…that will move landscapes toward desired vegetation composition and structure as described in Geographic Area direction".

C-3.169 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Capability, page 176, it states:

- VOR transects conducted on the Medora Ranger District for various purposes from 1996 to 2009 show that the habitat types used to define biologically capable are capable of producing High structure. One hundred and nineteen VOR transects surveyed during that time measured VORs ranging from 3.5 to 7.96 inches. The VOR transects encompassed all the habitat types except for one (Table 3.23) included in the definition of biologically capable lands. **VOR transects measured across the Medora Ranger District from 1996 to 2009 show that approximately 6 percent of these transects had VORs greater than 3.5 inches.**

Comment: Any use of the Dragon data and VOR transect data between 1995 and 2006 should be removed from this document (see Comment #153). The VOR data between 2006 and 2009 do not show that the habitat types used to define biologically capable are capable of producing High structure. In fact they show the exact opposite. Case in point; what is the primary issue that the FS has with herbaceous structure on the NB SDEIS. Not enough High structure.

The FS states that on the Medora Ranger District that only approximately 6 percent of these transects had VORs greater than 3.5 inches. This doesn't prove that all habitat types are capable of obtaining High structure.

The NDSU work suggests that much of the LMNG is not biologically capable.
RESPONSE: The Forest Service agrees with the statement that not all habitat types are capable of producing high structure. Currently there are only seven of the approximately 18 identified habitat types that are considered biologically capable. These are identified in SDEIS Volume I Chapter 3, page 168 Table 3.19. See Response to Comment C-3.58 and C-3.153 and Appendix B of the Wildlife specialist report.

C-3.170 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Capability, page 177, it states:

- Adjacent to the Medora Ranger District is the McKenzie Ranger District; together these two districts encompass the LMNG. The McKenzie District contains the same habitat types used in the definition of biologically capable lands as the Medora District. A review of VOR transects conducted during 2001 and 2002 for the 2006 Northeast McKenzie Allotment Management Plan Revisions FEIS (NE McKenzie FEIS) shows that High herbaceous structure is attainable on these habitat types. Within that project area, 46 VOR transects measured VORs of 3.51 or greater (Table 3.24).

- Also on the McKenzie District, in the fall of 2009 in Pasture 10, three transects measured VORs ranging from 3.69 to 4.13 inches in HT7. These transects accounted for 9 percent of the transects measured in that pasture. Pasture 11 in the fall of 2008 had seven transects with VORs ranging from 3.51 to 6.15 inches; six were located in HT 7 and one in HT 31. Ten percent of the VOR transects in Pasture 11 measured High structure.

Comment: Northeast McKenzie Allotment Management Plan Project is not next to the Medora District. **It** is northeast of Watford City and has soils that are different than the North Billings project.

According to the McKenzie Grazing Association (MCGA) and their projects, Pastures 2, 10 and 11, the FS is telling them they are not meeting structure objectives. Again, the VOR data is taken before 2007, and so it cannot be used.

Almost any ecological site can make High structure if given enough moisture. Yet the FS uses a drought year, 2004 as their baseline for stating the NB project area doesn't meet High structure.
RESPONSE: The SDEIS said that the McKenzie Ranger District is adjacent to the Medora RD. The soils are relatively similar with the majority of the LMNG within the same Major Land Resource Areas, MLRA 54 and 58C as delineated by the NRCS.
See Response to Comments C-1.3, C-1.10, C-3.153 and C-3.165.

C-3.171 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Capability, page 177, it states:

- The above information shows that the habitat types used in the definition of biologically capable lands are capable of supporting High herbaceous structure as defined by the Grasslands Plan.

Comment: The FS uses this one statement as their "science" behind what constitutes biologically capable soils supporting High herbaceous structure. In a recent FS response to a FOIA by the McKenzie County Board of Commissioners (MCBC) on the term "biologically capable", the Forest Service sent all their VOR transect information from 1996 to 2010. They provided NDSU field data for 2007 & 2008 on the Pasture 2, 10 & 11 project. They provided copies of the MCGA alternative for the Pasture 2, 10 and 11 project. They also provided FS memoranda, emails and other responses to the question of what is biologically capable and the FS science behind it.

The 1996 to 2006 VOR transects have already been addressed (see comments above).

Data from 2007 to 2010 have not been completed to determine a trend, so the FS cannot say habitat types used in the definition of biologically capable lands are capable of supporting High herbaceous structure based on VOR measurements.

The emails attached to the MCBC's FOIA show the FS was struggling with what was biologically capable in 2009 and 2010 and remained undecided on this question.

Emails:

1. In an email dated December 8, 2009 from Jack Norman, Zone Soils/Hydrologist, DPG to Libby Knots, Planner DPG on "High Structure Tables based on soil productivity states the following:

    - In light of our direction to use the Grand River AMP as a template I reviewed their methodology again in the determination of biologically capable soils to produce high structure. I think we should stay consistent if at all possible with their interpretation of 1600 lbs/acre/year for biologically capable if we choose to address this in the document. Therefore since I like numbers I developed tables for each pasture using the 1600 lbs. To determine what percent of the area we have that is biologically capable or not. Each range mgmt. spec will have their own soil tables so feel free to check these numbers in case I made any mistakes.

2. In an email dated December 11, 2009 from Libby Knots, Planner, DPG to Jack Norman, Zone Soils/Hydrologist, DPG to on "High Structure Tables based on soil productivity states the following:

    - Jack does this mean you have all the pasture 2 allotments done now? Please send as soon as you do. Thanks much

      On capability, this certainly needs to be a team discussion. I had started doing similar calculations with your tables for 1100, 1400, and 1600 lbs/acres....all of which have been used in the past. NE McKenzie used 800 lbs/acre- it would be interesting to go back and see what % of NE McKenzie has 1600 pound per acres probably quite a bit frankly - it has some of the best soils on the district I am told; nevertheless, with current management, the area had 29% high structure and 24% high structure (we read NE McKenzie twice) - NOT with no grazing. Those areas that made high structure may have received light or not grazing the year the transects were read – because of their location in the pasture or whatever - we should go back and look. But, that is perhaps the important part of the whole equation - that pastures are stocked/grazed such that some areas receive light or not grazing on at least some years. Preferably, this would be a somewhat shifting mosaic to meet the needs of wildlife and so that we don't have areas of pure rest, which would not be good for the vegetation - no one internally that I have heard has ever recommended that (pure no grazing).

      Anyway, I was waiting to get the rest of pasture 2 soil acres before emailing the % calculations out to the team. No one has taken time to look at the NDSU data like Mark did; no one has taken the time to scrutinize where current high structure transects are located in relation to the soils maps. Part of that maybe a problem. I don't know. Because of all the inclusions, if a high transect is shown on the map to

be on soils X, which aren't supposed to be capable of high structure, then do you assume it fell on an inclusion or what? For example, only 19% of pasture 11 meets 1600 pound, and yet from the random Robel transects in 2008, 9% of the pasture had high structure. It seems like we got pretty lucky to hit that many capable sites if only 19% of that pasture could make high. Although we would have to talk to Jeff - some of that may have been silver sage.

So we will continue the discussion. Everyone's input is needed to work together on this. I'm sorry if I put you on the spot on the “interdisciplinary” comment the other day. You have great input, and we all need to put our heads together on this and be professional and objective as much as we can. I would never say that we should not question - anything - but I sometimes feel it is a slap in the face to professionals who developed the plan to patently say that the Plan's structure objectives are not realistic (which is what Jack said). It needs more scrutiny and more holistic thinking to address the issue. What I often hear is that “it cannot be done” before we have made ONE SINGLE attempt to even raise the structure readings, much less meet the objectives. Can we not do better than 0% high, or averages in the l-inch range? I think we can. Just a couple of weeks ago I went out and read Robel stations that averaged almost all above 3” and 2 that made high in a unit of pasture 2 that had been grazed all season. Kicker is, just that week more cows had been turned in and all would remain there until December 31 unless snow forces them home.

3. In an email dated December 11,2009 from Jack Norman, Zone Soils/Hydrologist, DPG to Libby Knots, Planner DPG on “High Structure Tables based on soil productivity states the following:

- We now have soils/ecological site data from NRCS with annual vegetative production that of course I am using. **This is better data than habitat types and we should use the best available data.** The 1600 lb. number is out and the public have it so I think we will need to address a number. I expect the 1600 lb number will be the number or close to it that equates to approximate high structure. I expect now if we apply this across the landscape we can predict a starting place at least where to look for high structure. The badland ecological sites 58C have minimal potential to produce high structure based on the above production and probably the grouse aren't there as much? I fully expected to participate in this effort on the ID tern. All I was saying in the meeting was that I would not be leading the effort like Gonzalez did in South Dakota. I feel this is a range/botany/wildlife issue more than watershed.

  As far as the planning team, hopefully I wasn't coming across as criticizing them. I just think it would have been more practical all along to manage high structure separately from the livestock management program. These areas which now can be delineated based on soils and production can be managed as sensitive areas to achieve high structure objectives (before they could be delineated through

inventory). They and their AUMs may need to be excluded from livestock to achieve this on a consistent manner. They could become like I mentioned in the meeting high structure pastures. WE would have full control and they could be grazed when necessary for plant health but not to the extent that high structure objectives are compromised. This would clean up grazing management and minimize the need to micro manage their allotments for the lack of better wording.

As can be seen by the above emails, the FS was in a dilemma as what to call biologically capable. They really were not looking at the science, they were looking at what was already out there, the 1600 lbs/ac number.

4. Then on February 9, 2010 District Ranger Ron Hecker sent an email to his ID Team members stating the definition of biologically capable, removing all doubt as to what the direction the FS would go as follows:

- ID Team Members,

- Here is the definition that we will be taking forward for the definition of biologically capable lands for the Pasture 2, 10, and 11 Project. This is from the Livestock Grazing ROD for the DPG (September 2006), approved by the Regional Forester September 20, 2006. The Final FS response to the SRT report is hereby attached to the finalized Grassland Plan as Appendix M (the Livestock Grazing ROD, 2006, p.l 0).

  The Final Response to the SRT (October, 2006, p. 5-6): interpreted these objectives and associated guidelines to apply only to sites "biologically capable" of producing high structure. Biologically capable sites are those that are classified as one of the following habitat types: western wheatgrass/green needlegrass, western wheatgrass/needle-and-thread grass, needle-and thread/sedge, silver sage/western wheatgrass, big sage/western wheatgrass or western snowberry. Sites dominated by crested wheatgrass were also considered biologically capable.

  Basically biologically capable lands are lands described by one of the habitat types identified above.

What the SRT recommendation and the DPG response said in full are as follows:

SRT Recommendation I – 3*: The SRT recommends studying and revising the definition of "Biologically Capable" to accurately reflect the capability of the soils and plant communities to meet structure goals for the gallinaceous Management Indicator Species.*

DPG Response to the SRT Recommendation 1-3

We have interpreted these objectives and associated guidelines to apply only to sites "biologically capable" of producing high structure vegetation. The SRT is supportive of this concept, but questions the definition of biologically capable as any site capable of producing at least 800 lbs of herbaceous material/acre. This is not the definition used by the DPG.

Throughout the SRT review process we defined biologically capable as any site classified as one of the following habitat types: western wheatgrass/green needlegrass, western wheatgrass/needle-and-thread grass, needle-and-thread/sedge, silver sage/western wheatgrass, big sage/western wheatgrass or western snowberry. Sites dominated by crested wheatgrass were also considered biologically capable.

These habitat types, as well as crested wheatgrass sites, are generally capable of producing 1100 lbs of herbaceous material/acre, and most are capable of producing 1400 lbs or more.

Over the last several years, monitoring shows the above habitat types (and crested wheatgrass sites) are all capable of producing high structure vegetation, and therefore are a reasonable definition of biologically capable. Based on the SRT's input, we will continue to monitor and evaluate this relationship as we update AMPs.

5. On May 5, 2010 District Ranger Ron Hecker sends another email to his ID Team members as follows:

- ID Team

- I would like to remind you how VOR (high structure) and biologically capable lands will be carried through the Pasture 2, 10, and 11 project.

BIOLOGICAL CAPABLE LANDS: February 9, 2010 message:

- Here is the definition that we will be taking forward for the definition of biologically capable lands for the Pastures 2, 10, and 11 Project. This is from the Livestock Grazing ROD for the Dakota Prairie Grasslands (September 2006), approved by the Regional Forester September 20, 2006. The Final Forest Service response to the Scientific Review Team (SRT) report is hereby attached to the finalized Grassland Plan as Appendix M (Livestock Grazing ROD, 2006, p.10).
- The Final Response to the Scientific Review Team Reports (October, 2006, p. 5-6): interrupted the objectives and associated guidelines to apply only to sites "biologically capable" of producing high structure. Biologically capable sites are those that are classified as one of the following habitat types: western wheatgrass/green needlegrass, western wheatgrass/needle-and-thread grass, needle-and-thread/sedge, silversage/western wheatgrass, big sage/wheatgrass or western snowberry. Sites dominated by crested were also considered biologically capable.
- Basically biologically capable lands are lands described by one of the habitat types identified above.

HIGH STRUCTURE: Management Indicator Species-Plains Sharptail Grouse

- On the Little Missouri, Cedar River, and Grand River National Grasslands, high structure will be defined as areas average VOR transect reading greater than 3.5

inches (Grassland Plan, H-2). Additional information how VOR transects will be summarized in contained in the Final Forest Service response to the Scientific Review Team (SRT) report (pp. 7 and 8).

- Within sharp-tail grouse habitat, greater than 20% of the area around display grounds should be managed as quality nesting cover. Minimum patch size should be 160 acres (Grassland Plan, H-2).

I will reiterate this direction at the ID Team meeting next week. We need to quit spending our time discussing these two issues and move forward in the development, analysis, and monitoring of the decision for Pasture 2, 10, and 11 and the implementation of the Dakota Prairie Grassland, Land and Resource Management Plan. If you have any questions please feel free to visit with me.

6. In an email dated June 3, 2010 from Libby Knots, Planner, DPG to Jeffrey Adams, she states:

   - Even though the older data was not necessarily stratified by the 6 HTs, it still tells us something if there is high structure. The 6 HTs are the most capable, so if high structure did fall outside of those HTs, then that says something right there. So, perhaps "proving" that any given transect fell on one of the one the 6 HTs is not really necessary?

7. In another email dated June 3, 2010 from Libby Knots, Planner, DPG to Jeffrey Adams, she states:

   - Jeff I will get you the VOR data for 2, 10, 11 soon. He has a few other things on his plate. Let me/him know a "due date" and he can prioritize accordingly. Those VOR transects were stratified within the 6 HTs identified in or response to the SRT.

     Attached are spreadsheets summarizing VOR data collected in NE McKenzie in 2001 and 2002. Also attached is Gary Foli's wildlife report for that project. Those transects were stratified within soils producing at least 800 pounds/acre-it was before the HT direction. But, most of the project area is within those HTs. Someone could pull up the HT map and verify that [attachment "Pasture 12_13_14WildlifeReport_final.doc" deleted by Libby E knots/Rl/USDAFS] [attachment "2001-02vordataPas_12_13_14AMPrevisionl.xls" deleted by Libby E Knotts/Rl/USDAFS]

     Foli also says he remembers that David Freed (?) did an exercise analyzing the LMNG-wide VOR transects done in the 1990's where he overlaid the transects onto the HT map and identified what HTs each transect was in. I have never seen that, but Foli thought that you actually had it (maybe for the Dragon?).

     Anyway, let me know if you want something more of different and by when.

And when you've completed all of this, can you send it back to us so that we can use it in our effects analysis!

8. On June 3, 2010 *Medora Ranger District. Wildlife Biologist. Arden Warm* sends an email to Libby Knotts stating:

- Although I haven't done it, I would be willing to bet that 80+ percent (if not 95%+) of those old transects would fall in one of the BioCap HT's anyway…

We made a similar case in our doc. We even narrowed down the old data to the North Billings area where one year it showed we made 20% high structure (although the sample was low)! However, the rest of Billings county did not but sill was around 12% in that same year-I think. Even using the NCRS soil polys and those identified as being potentially "suitable" by the range shop, the overlap of our herbaceous dominated transects and those soil polys was very nearly total. So a lot of this moot…

I think that we have "overly" sampled the LMNG to a point where we can easily demonstrate that at the landscape level, we are not meeting structure objectives (LRMP!), even though the potential is there as shown by such-and-such transects…so how does that translate to individual allotments?

Adjustments due to drought results in improved structure at the end of the following year. For instance, drought in 2004 and adjustment in 2005. We went from <1% High structure on herbaceous dominated transects in 2004 to 7% in 2005-although 100-125% precipitation levels in 2005 played a role too! I would have liked to see how another year at the reduced stocking rates would have played out…

9. On September 20,2010 *Medora Ranger District. Wildlife Biologist. Arden Warm* sends an email to Jeffrey Adams stating:

- Jeff, I've got a couple of spread sheets here that outline those transects that reached High structure (>3.5").

The first one is all transects from 1996 to 2008 of 2008 to 2009, I think. And for right now, it's only Medora RD transects.

10. In an email dated September 20, 2010 from Jeffrey Adams to Libby Knots, Planner, DPG, he states:

- Libby,

  Below is some VOR information analysis for Medora that Arden just completed. We'll probably tum this into a summarized table for the EIS. Thought you might be interested .

> Arden, and I talked and decided to see if Phil might have some time to run the 1996 on McKenzie VOR data. Arden figured it would take about a half day to run if he did it, figured Phil could run much quicker. Will let you know the outcome. Jeff

What the emails show is that the specialists were trying to find a way to use the soils/ecological site data from NRCS with annual vegetative production and this data was better than the data associated with the habitat types and the FS should use the best available data. The specialists also thought the 1600 lbs used in the Grand River project would be consistent across the DPG.

Ranger Hecker put a stop to his specialists thinking of using the best available data. He went back to the Final DPG Response to the SRT report, and made a decision to use habitat types as biologically capable lands. He did this without the benefit of science that the FS doesn't have on habitat types and without the benefit of his specialists being able to use NRCS ecological sites to determine biologically capable at 1600 lbs/acre.

What this really shows is the FS doesn't really have any idea if their use of habitat types as biologically capable is correct or not. Yet they continue to hold fast on this decision to use habitat types producing 1100 lbs/ac or more as biologically capable even though all of the reports show it cannot.

The reason this is so important to the NBSDEIS is that Arden Warm, Wildlife Biologist for the Medora Ranger District, author of the Wildlife Specialist Report, joined the discussion on VOR data using Dragon data transects to support High structure, three months after the Hecker emails.
RESPONSE: The Forest Service agrees with the fact that no data has been collected in the project area since 2006. However, see Response to Comment C-3.2 and C-3.153, and the SDEIS Volume I Chapter 3, pages 176 and 177 for capability analysis summary.

The e-mails display an interdisciplinary team (IDT) discussion across Ranger Districts about how individual IDTs were addressing biological capability based on the products they had available to them. The definition of biological capable as described in the DPG Final Response to the SRT Reports, DPG Response to SRT Issue I-3, pages 5 and 6 has always been the definition utilized in the North Billings project.

C-3.172 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Herbaceous Structure, Alternative 2, page 178, it states:

- As this alternative would maintain current management direction, existing structure conditions will likely continue to reflect those identified in the Existing Condition section above. Essentially the skewed distribution towards Low and Moderate structure would continue, as would the continued shortfall in high structure.

Comment: The FS states Alt. 2 would not meet structure objective, and as such will not be considered as a viable alternative by the FS.

RESPONSE: The effects analysis referenced by the commentor displays the predicted effects of Alternative 2 for the Herbaceous Structure issue solely. For a description of the alternatives considered in detail go the SDEIS Volume I Chapter 2, pages 43 - 48.

C-3.173 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences- Herbaceous Structure, Alternative 3, pp. 179-180, it states:

- The initial actions of this alternative include establishing, changing, or maintaining rotational grazing systems; additional range improvements such as fencing, water development, range pipelines, etc, on approximately a third of the allotments; and range water management. Authorized Use would be Preference.

  Grazing systems-The use of rotational systems to address structure concerns appears to be of limited benefit according to Briske (2008), Holechek (1999), Hart et al. (1993), Salo (2004), Van Poollen and Lacey (1979), and others.

  Infrastructure-Under this alternative, 17 of the 43 allotments would receive additional range infrastructure (i.e., range water, water pipelines, tanksor fencing). The development or extension of existing water sources via pipelines affects livestock use patterns and, indirectly, structure. Fencing can have many of the same effects as water development.

  Stocking Level- The Wildlife Report (Project Record, Specialist Reports and Notes) notes that Holechek et al. (1989), Reece (1991), Hart et al. (1993), Briske et al. (2008), and others, have identified that stocking is the most important variable in managing range vegetation.

  The Wildlife Report (Project Record, Specialist Reports and Notes) concludes that some Low structure may move to the Moderate category. The opportunity to increase the amount of High structure appears unlikely because of the homogenization effects of increased infrastructure and rotational grazing systems and the lack of Authorized Use adjustments.

  Given that grazing systems, infrastructure, and the existing Authorized Use levels tend to favor homogenous structure, it ***does not*** *appear that under the initial actions of this alternative High structure objectives will be achieved*. Adaptive management actions may be necessary to provide appreciable movement towards structure objectives, in particular High structure.

Comment: The two main tools for making this alternative work are deemed by the FS to affect structure directly. The FS will not pick this alternative because it prefers to meet objectives using grazing systems and infrastructure to solve the problems. MGA disagrees with the SDEIS on grazing systems and agrees with the Society for Range Management who published articles in its *Rangelands* magazine by various range management specialists and scientists that disagreed with the Briske and Holechek on their conclusions about grazing systems.

The emphasis of the Wildlife Report by Specialist Warm on reduced stocking levels goes above and beyond what the report can justify. This is the same person who used a severe drought year as his baseline to measure herbaceous structure on the project area. He concludes that without reductions this alternative will not meet objectives, therefore it will not be considered as a viable alternative. The FS states: "Adaptive management actions may be necessary to provide appreciable movement towards structure objectives, in particular High structure." This will result in further reductions.

The Wildlife report favors reductions to light grazing intensity, 40-70%, monitor and reduce again until is not a concern.
See Comment #l04.
RESPONSE: The Rangelands issue presumably referred to (Oct 2009) did not find in Briske et al (2008) a repudiation of grazing systems (see Budd and Thorpe 2009) but rather an opening of a dialogue (Ibid.) to re-open the debate about the value of rotational systems in light of research and practice.

Refer to Appendix D (Grazing Management Toolbox) for the extensive literature review of the various range management tools and their effects on herbaceous structure. An authorized use adjustment is just one of the tools available under the Adaptive Management process that could be adopted if monitoring finds resource objectives are not being met.

The Grasslands Plan describes an objective to achieve a mosaic of herbaceous structure and composition across the landscape to help meet the diverse needs of wildlife species and other ecological objectives. Monitoring and project data indicates that current management has consistently produced an imbalance in the structure mosaic. See the SDEIS Volume I Chapter 3, pages 169 - 173.

See Response to Comment C-3.104.

C-3.174 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences- Herbaceous Structure, Alternative 3, page 180, it states:

- Table 3.25 summarizes the predicted results of implementing initial actions under Alternative 3. The results are identified in terms of improving, no change, or a decrease in the amount of High structure and structure objectives in general.

- Under this alternative *30 allotments are projected to have no change;* however, *six of these allotments are currently meeting structure objectives. Twelve (12) allotments are projected to decrease High structure;* of these allotments, one is currently meeting structure objectives. One allotment is hayed, and the structure objective is not applied to it.

Comment: Not one allotment is expected to improve High structure in Alternative 3. The reason for this is the Wildlife Report stated that without "reductions" there could be no

improvement. Table 3.25 is so subjective in its approach to predicting impacts, that it really isn't useful.

The table shows seven (7) not *six of these allotments are currently meeting structure objectives.*

The Wildlife Report provides one of the most biased opinions about livestock grazing with everything in it directed at getting rid of grazing. It is difficult getting a fair and impartial opinion on what herbaceous structure is really like on the project area, or what real chance objectives might be achieved. The report should be removed from the report and all related findings and conclusions.
RESPONSE: While the table does indeed display that a total of 7 allotments are currently meeting herbaceous structure objectives as indicated by the first footnote, the paragraph summarizing this table is correct. Refer to the first two sentences in the fourth full paragraph on page 180 (SDEIS Volume I Chapter 3).

The commentor does not provide a specific example that explicitly states their case. See also Response Comment C-3.173. Nowhere does the Wildlife specialist report or the SDEIS indicate a desire to get rid of grazing.

C-3.175 – In the SDEIS, Chapter 3, Part I, Environmental Consequences - Herbaceous Structure, Alternative 4, page 181, it states:

- Alternative 4 is similar to Alternative 3 in the use of management tools such as implementation or changes in rotations, but does not utilize range infrastructure to the extent Alternative 3 does. In addition to these actions, Alternative 4 includes *Authorized Use based on carrying capacity with an adjustment for livestock weight*. This alternative is also adaptive management based.

Comment: The FS cannot use the Wildlife Report data to make the adjustments based on initial stocking rate or livestock weight.

The FS actually doesn't know what the herbaceous structure is on the project area because they used drought data and also did not collect enough data (transect per allotment) to make an accurate determination of the herbaceous structure. At this point, the FS would be making reductions for the sake of making reductions.
RESPONSE: The Forest Service feels that adequate data was collected to base the analysis on. See the SDEIS Volume I Chapter 3, pages 84 - 92 on methods on how carrying capacity, initial stocking rate, and livestock weight were estimated.
Refer to Response to Comments C-1.3, C.3.160, and C.3.161.

C-3.176 – In the SDEIS, Chapter 3, Part 1, Environmental Consequences – Herbaceous Structure, Alternative 4, pp. 181-182, it states:

- Table 3.26 summarizes the predicted results of implementing initial actions under Alternative 4. The results are identified in terms of improving, no change, or a decrease in the amount of High structure and structure objectives in general.

Under the initial actions of this alternative, *29 allotments are projected to move towards structure objectives*. Seven of the 29 are currently meeting structure objectives; however, initial actions could further improve structure distribution in 5 of the allotments, and 2 would remain unchanged. No changes to the current structure distribution are projected for 12 allotments. One allotment would shift the structure distribution more towards Moderate and Low structure. One allotment is hayed, and the structure objective is not applied to it.

Comment: The reason this alternative gets rave reviews by the FS is because it imposes two reductions on the members, one for cow size and one for initial stocking rate.

The few the numbers of livestock the higher the amount of High structure can be achieved.

In Table 3.26 it shows 29 allotments moving toward objective. The FS doesn't say if objectives are met or not under this alternative.

What they do say is:

- If monitoring shows that initial actions are not meeting or making acceptable progress towards structure objectives additional reductions in Authorized Use or other management actions may be needed. The adaptive options identified under this alternative in combination with the tool box offer an array of different tools that could be used to further address structure objectives. However, as pointed out under Alternative 1 above, stocking rate is the most important variable in managing range vegetation.

What this means is that if members are not meeting management objectives, then further reductions can be made, which means every allotment can be reduced to "no grazing" or grazing so insignificant it has no effect on structure or wildlife.
RESPONSE: The commentor continually assumes that Authorized Use adjustments are the only management tool available and is portraying that the Forest Service wants to eliminate grazing. Authorized Use adjustments are one of several tools that can be utilized to work towards Grasslands Plan objectives (SDEIS Appendix D).

The Purpose and Need (SDEIS Volume 1 Chapter 1, pages 11 - 12) states that "There is a need to meet or move toward Desired Conditions for those affected resources in accordance with the Grasslands Plan direction while allowing grazing on suitable lands supporting local families and communities."
See the Carrying Capacity Analysis and Livestock Weight Adjustment discussions in the SDEIS Volume I Chapter 3, pages 86 - 92., C-3.173 and C-3.174.

C-3.177 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Cumulative Effects, page 183, it states:

- Despite the adverse effect on native species, invasive grasses such as annual brome, crested wheatgrass, and Kentucky bluegrass can supply High structure, which is the most limiting structure class in 36 of the 43 allotments in this project.

Comment: Even invasive plants provide some good. Livestock provides nothing, according to Arden Warm.
RESPONSE: The Forest Service does find on occasion that invasive grasses can provide high structure in the fall. However, the literature and monitoring indicates that Kentucky bluegrass, as a weak stemmed species, provides nearly no herbaceous structure in the spring (Svedarsky et al 2003 and the SDEIS Volume I Chapter 3, page 219). Smooth brome, particularly in monocultures, is not a preferred species for wildlife habitat due to being too thick to allow for effective movement of birds on the ground plus a reduced insect flora. Crested wheatgrass can provide the amount and type of structure for several species in the spring but native grass stands are preferred by some wildlife species, for example Sprague's pipit, and is important to other ecosystem properties (USDA 2000).

C-3.178 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Cumulative Effects, page 184, it states:

- *Drought* is a recurring natural event in western North Dakota that affects herbaceous structure, as demonstrated by the 2004 VOR data. The lack of moisture adversely affects plant growth, so the amount of High structure is naturally less. Livestock grazing during drought further reduces the amount of High structure.

Comment: According to the SDEIS. High structure is everything: the ultimate objective.

This statement also reflects that the FS's true objective is to have no grazing in a drought. Since drought has occurred 21% of the time in the years on the Northern Great Plains and 40% over the last 10 years, grazing will occur only 6 years out of every 10 years.

This is an obvious case where a Plan amendment is needed to fix the FS's focus on centering everything they do on High structure. It is the only fix to the survival of the MGA and its partnership with the MGA according to the terms of the Grazing Agreement.
RESPONSE: The Purpose and Need for the document states "Some resources are not at desired conditions" and those resources are identified in Table 1.3 (SDEIS Volume I Chapter 1); Key Issues (SDEIS Volume 1 Chapter 1 pages 21 - 25) and throughout the rest of the document.

The Forest Service focus is not centered solely on the need for High structure. See the Response to Comment C-3.176 .

C-3.179 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Cumulative Effects, page 185, it states:

- ***Alternative 4,*** initial actions would improve High structure in 22 of the 35 allotments not meeting high structure objectives. Reasonably foreseeable actions would have the same effects as identified under Alternatives 2, 3, and 3A.

Adaptive Management. Implementation of adaptive management options under Alternatives 3, 3A, and 4 including actions identified in the tool box singularly or in combination-would meet or provide significant movement towards structure objectives within the timeframe of this project. The greatest difference among these alternatives when considering adaptive actions is the **rate of improvement.** Alternatives 3 and 3A initially utilize management actions other than adjusting Authorized Use. *Determining whether these actions are effective requires time. generally 3 to 5 years. so this time is lost if the initial actions are determined to be ineffective.* In contrast, Alternative 4 initially adjusts Authorized Use to carrying capacity, among other actions. As identified above, stocking rate is the most important variable in managing range vegetation. So by addressing this variable initially Alternative 4 has potentially gained the 3 to 5 years over Alternatives 3 and 3A in the event additional adaptive management actions are needed.

Comment: This analysis makes it evident that the FS does not want to wait the three to five years to adjust stocking numbers, so the FS is likely to pick Alternative 4. If they do pick Alternative 3/3A, then it will be three to five years before the reductions hit. MGA doesn't think the FS could write it as plainly as they have here.
RESPONSE: The analysis referred to (SDEIS, Chapter 3, Part 1, Herbaceous Structure, Cumulative Effects, page 185) is simply disclosing what the projected effects may be between the adaptive management alternatives based on the assumptions of initial actions, monitoring, and potential subsequent adaptive actions. As range management is a complex issue, so also the decision found in the ROD. As part of his decision, the decision maker has chosen to provide an opportunity for the MGA and its members to develop an implementation plan on an allotment by allotment basis, utilizing the Grazing Management Toolbox that addresses the identified objectives for the given allotment (see Draft ROD 2013 for more details).

C-3.180 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Consistency with Grassland Plan, page 186, it states:

- There are no standards in the Grasslands Plan for structure; however, there is one guideline, which is presented below.

  - Apply vegetative structural and compositional objectives across all herbaceous community types (Grasslands Plan, p. 2-22). **Guideline**

Currently the project area is not meeting the structural objectives identified in the Grasslands Plan. In general there is there is an overabundance of Low structure and a scarcity of High structure.

Comment: Based on the Wildlife Report that used a severe drought year, 2004, as the baseline for determining that the project area is not meeting the structural objectives, it is plain to see

how the FS arrived at this determination. However, it is inaccurate for the FS to use the Wildlife report and wrong for the FS to use 2004 and 2005 data. The only data that is usable in the individual Allotment write ups in Chapter 3, part II is the year 2006. The FS did not sample an adequate amount of transects for each allotment to determine herbaceous structure. Some allotments had no 2006 data.

The FS steps out on a limb saying, based on severe drought year data, that the project area does not meet objectives. It is not industry standard to base this information on a severe drought year. The fact is the FS doesn't know if does or doesn't.
RESPONSE: See Response to Comments C-1.3, C-1.10, C-3.160, C-3.161, C-3.164, C-3.170, and C-3.173.

C-3.181 – In the SDEIS, Chapter 3, Part 1, Herbaceous Structure, Consistency with Grassland Plan, page 186, it states:

- *Alternative 4 establishes Authorized Use at carrying capacity. This results in a reduction in Authorized Use, which the SDEIS identifies as the most effective means of addressing the structural concerns in the project area.*

Comment: The FS has pre-selected Alternative 4 for meeting its most important objective, herbaceous structure which is a mere pretext to reduce grazing of livestock. This is the objective that defines everything else in the Plan. By pre-selecting Alternative 4 for structure, the FS has pre-selected Alternative 4 for all the objectives.
RESPONSE: See Response to Comment C-3.178 and C-3.179. There are six key issues presented in the SDEIS (Volume I Chapter 1, pages 21 - 25) that the decision maker will need to consider in order to make an informed decision on how best to meet the objectives of the Purpose and Need. Herbaceous structure is only one of the identified issues.

C-3.182 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Introduction, page 186, it states:

- The concept of seral stages is that, in the absence of disturbance, distinct plant communities develop and, over time, move along a linear path until a relatively stable climax plant community is attained.

Comment: It is very rare that plant communities "move along a linear path". More often, individual landscapes develop in varied and staggered stages, being influenced by precipitation, fire and other external forces. It is only in the most generalized, grand landscape sense that there is a path which ultimately leads to a climax community which, in tum, devolves into other stages. This is an overly broad generalization and is, therefore, meaningless.
RESPONSE: The statement may be broad and generalized but it remains valid (Briske et al 2011, 2003). Seral stage models can be used to predict general changes in plant composition with increasing or decreasing levels of disturbance, including livestock grazing. Thus, they can be applied to proposed management to move conditions towards seral stage/plant composition objectives. See Response to Comment C-3.185.

C-3.183 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Introduction, page 186-187, it states:

- Early seral stages occur in heavily disturbed sites caused by intensive livestock or wildlife grazing, burrowing rodents, severe fire, extended drought, and natural erosion and deposition. In general, Low-stature species such as blue grama and sedge dominate the early seral stages among western wheatgrass/ needlegrass potential communities. Early seral stages can also have an abundance of annual forbs, annual grass, club moss *(SelaginelladensaRydb.),* and/or bare ground.

Comment: Drought can cause a plant community to move to early seral stages and when monitoring the FS needs to recognize this when communities of low-stature species are present.
RESPONSE: See Response to Comment C-1.3 and C-3.102.

C-3.184 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Introduction, page 187, it states:

- The seral stage was **estimated** through measurements of the prominent grass species with respect to habitat types and ecological sites most commonly utilized by livestock.

Comment: How accurate were the estimates? The FS does not indicate the method used to make these estimations. If the FS cannot quantify crested wheatgrass, how can it quantify seral stage?
RESPONSE: The methodology for estimating seral stage was described in the Botany specialist report (20-25). Refer to Response to Comments C-3.16, C-3.118, C-3.194 and C-3.199.

C-3.185 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 187, it states:

FOREST SERVICE 2005 SERE PLOTS

- Page 192, SDEIS, states:

  A multivariate analysis of the 2005 sere data was also completed. This analysis identified frequency of western wheatgrass and blue grama as the only significant measured parameters. *However. because field evaluation of the model indicated that species frequency was not an accurate indicator of existing seral conditions, this model was not used to determine seral stage analysis.*

- Fifty-three randomly selected sites were sampled during 2005 to assess plant composition and the proportion of early, mid, and late seral stages relative to western wheatgrass-green needlegrass and western wheatgrass-needle-and-thread climax communities or habitat types (HTs).The sample sites were later cross-referenced to NRCS ecological site (ES) maps developed from soil layers by the NRCS (2009). Based on vegetative and edaphic (soil) keys (Jensen et al. 1992), 41

of the sites occurred in the western wheatgrass/green needlegrass HT, while 12 sites occurred in the western wheatgrass/needle-and-thread HT.

Comment: The FS did not follow the Sere Plot protocol which called for determining seral stage using Dr. Uresk's analysis methods, i.e "multivariate analysis" or discriminant analysis model (Uresk 2006). As stated above, "*because field evaluation ofthe model indicated that species frequency was not an accurate indicator of existing seral conditions. this model was not used to determine seral stage analysis.*"

The FS used both seral stage by ecological site and habitat type and traditional succession models to obtained seral stages when analyzing the sites in the sere plots.
Habitat type and traditional succession models were based on vegetative and edaphic (soil) keys (Jensen et al. 1992), 41 of the sites occurred in the western wheatgrass/green needlegrass HT, while 12 sites occurred in the western wheatgrass/needle-and-thread HT. Jensen et al. 1992 was based strictly on "ocular estimates" of production and canopy cover.

However, Jensen et al. 1992 was found to have only ocular estimates for both the production and canopy coverage. No field data was collected for their study. The classification of the sites appears to be an estimate and could be off significantly.
RESPONSE: Seral stage was evaluated with respect to climax communities of the habitat type and traditional succession models, and climax or Historic Climax Plant Communities (HCPC) of the ecological site using state-and transition models. The results using both methods were included in the analysis and discussion, but the final estimate of seral stages across the project area were obtained using ecological sites and state and transition models.

Field data involving ocular estimates of canopy cover by major species was collected at each of the Jensen et al (1992) sample sites. Regardless of the precise methods by Jensen et al (1992) the qualitative and quantitative descriptions of plant composition and community dynamics are highly similar between the habitat type and ecological site models with respect to the reference state and lightly affected native-invaded states. Thus the high degree of similarity in seral stage results using the two methods.

Classification of seral stages will always be an estimate based on the collected data and model used for analysis. As discussed in the results and indicated by the plant measurement data provided in Appendix E of the Botany specialist report, there were very few communities in the project area with plant species characteristics similar to descriptions of late seral communities provided by the work of Jensen et al (1992) or the NRCS (2006).

C-3.186 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 188, it states:

- Sampling protocol for the sere plots followed the Natural Resource Inventory System (NRIS) for terrestrial vegetation (USFS 2008), and sampling designs specific to this project are located in the Supporting Documentation- Seral Stages section of the Project Record.

Comment: The "sampling protocol" the FS is talking about is the Plant Composition and Seral Stage Monitoring Protocol, Draft- June 8, 2005, project case file. The FS states in the protocol that:

- A committee was formed to review various methods of vegetation data collection and to make a recommendation for a monitoring protocol. This group has since looked over and discussed various methods. We've went to several different agencies involved in rangeland ecology to get their opinion on different methods of data collection as well. The following is our recommendation for a DPG-wide plant composition &_seral stage monitoring protocol based upon the committee's discussions.

The committee's recommended protocol is as follows:

- **Recommended Protocol**

  The TERRA database *cover-frequency transect protocol* is recommended for monitoring grassland vegetation. It is a USFS accepted rangeland protocol, can be uploaded into the TERRA database for future reference, and the data can be directly used for estimating seral stage of a site using Dr. Dan Uresk's analysis method. It should be noted that upon consultation with a statistical rangeland ecologist, he advised to focus on key species for a given area, which is very similar to Dr. Uresk's analysis.

Comment: The *cover-frequency transect protocol* and estimating the seral stage of a site using Dr. Dan Uresk's analysis methods refers to native sites only.
The Sere Plots referred in the SDEIS uses the *cover-frequency transect protocol* for collecting data in the field. Establishing seral stage was to be completed with Dr. Dan Uresk's analysis method which is obtained on line at www.fs.fed.us/rangelands.

The committee recommended that on the Little Missouri National Grasslands and the Grand River & Cedar River National Grasslands only the following HT be monitored. These HTs make up the majority of these grasslands. The five HTs we recommend to monitor are as follows:

1) HT_6–Western wheatgrass/Needle-and-thread
2) HT_7-Western wheatgrass/Green needlegrass
3) HT_8-Western wheatgrass/Green needlegrass/Blue grama
4) HT_31-Silver sagebrush/Western wheatgrass
5) HT_42-Big sagebrush/Western wheatgrass.

Dr. Uresk's analysis methods cover the following habitat types or vegetation communities:

1. Needle-and-Thread/Western Wheatgrass/Blue Grama
2. Western Wheatgrass/Blue Grama/Buffalograss
3. Green Needle Grass/Western Wheatgrass/Buffalograss (Clayey)
4. Big Sagebrush/Western Wheatgrass/Blue Grama

However, upon further review, no evidence was found that the FS used Dr. Dan Uresk's analysis methods for estimating the seral stage. A check on line at www.fs.fed.us/rangelands found Dr. Uresk's excel workbook containing the datasheet for field data collection not functioning.

Contact with Dr. Uresk found him puzzled as to why it wasn't working. This does not follow the FS protocol for Sere Plots.
RESPONSE: The sampling protocol the Forest Service used consisted of the NRIS sampling methodology located in the project record, and analysis most fully described in the Botany specialist report (pages 20 - 25).

Methods for estimating seral stage among broken land/crested wheatgrass and other sites with invasive grasses are included in the Botany specialist report (pages 23 - 24). As indicated in Table 5, (page 44) of the Botany specialist report, the proportion of seral stages across the project area was not appreciably different whether including or excluding samples from broken land. There was still an excess of mid seral stages and scarcity of late and early stages compared to desired conditions.
See Response to Comment C-3.185, C-3.194 and C-3.199.

C-3.187 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 188, it states:

FOREST SERVICE 2006 TO 2010 SERE PLOTS

- *Twentv-six sites* were sampled in the project area from 2006 - 2008 and *another 9 sites* were sampled during 2009 and 2010.
- *Ecoplot sampling methods involved ocular estimates* of plant canopy cover within 0.1-acre circular plots. The ocular estimates were repeated during measurement of the sere plots, but the *primary sample was collected with the NRIS sampling protocol* as described above by roughly centering the 100-x150-foot macroplot over the ecoplot location.
- As discussed below under Data Analysis, only species frequency was planned for measurement after 2005 because a seral stage model developed from the 2005 data *indicated plant basal cover was not statistically significant* (Uresk 2006b).

Comment: Sere Plots is a name given to the plot by the FS. Sere Plots are not a protocol unto themselves. The Sere Plot uses a *cover-frequency transect protocol* to collect data to use in estimating seral stage using Dr. Dan Uresk's analysis method. The FS did not follow the Sere Plot protocol and used both seral stage by ecological site and habitat type and traditional succession models to obtained seral stages when analyzing the sites in the sere plots.
RESPONSE: The sere plots were simply named as such for a means of reference in various discussions, just as NDSU plots were referenced but are not a protocol unto themselves.

See Response to Comments C-3.185, C-3.194 and C-3.199.

C-3.188 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 189, it states:

NDSU 2008 TO 2009

- *Ninetv-eight (98) sites* were sampled by NDSU during 2008 and 2009 and referenced to the dominant ecological site that was verified in the field with soil pits and NRCS keys. Sample locations were buffered 164 feet (50 meters) from roads and fence lines, and 656 feet (200 meters) from water developments.

Comment: The NDSU data and the sere plot data are the only real project level data the FS used in the analysis of seral stages. The NDSU data are better than the Sere Plot data because the data was taken in the field using consistent methods.
RESPONSE: It is correct that the NDSU data and sere plot data were the primary data used to estimate seral stage in the project area, but several other types of data were extremely useful in documenting general conditions of plant composition across allotments and pastures.

Data from NDSU and sere plots provided similar results as summarized.
See Response to Comments C-3.185 and C-3.199.

C-3.189 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 190, it states:

ECOPLOT DATA

- P. 192- Seral stage was estimated from the ecoplot data (1996-1999) by comparing measurements of plant canopy cover to habitat type descriptions. While these data are valuable, the sampling methodology used to collect *the data was not as rigorous as the more current sere and NDSU data.*

Comment: Ecoplot Data is a broad scale analysis tool and uses a different sampling methodology than Sere Plots or the NDSU data. **It** therefore cannot be used in the determination of seral stages alongside the Sere Plot or the NDSU data.
RESPONSE: See Response to Comments C-3.185, C-3.188, and C-3.199.

C-3.190 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 190, it states:

PACE TRANSECTS

- Impediments to re-measurement of some sites included poorly documented sample locations or transect bearings, the addition of new fencelines adjacent to transects, or heavy grazing that increased the difficulty of species identification.

Comment: These *28 "pace transect"* are the old Parker 3-Step transects. They are fair for monitoring trend, but cannot be used in the determination of seral stages alongside the Sere Plot or the NDSU data. The photos were probably the most useful component of the Parker transects.
RESPONSE: See Response to Comment C-3.199 regarding the collective plant composition data. The pace transect data appeared to be adequate for monitoring trends in dominant plant composition and strongly indicate a downward trend with respect to increasing invasive grasses and decreasing maintenance of native plant communities. The Forest

Service does not agree that photos of the pace transects were the most useful component because there were not any photos of the first measurement period around 1980 for comparison.

C-3.191 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 190, it states:

BELT TRANSECTS

- *Ninetv-three belt transects* (Grant et al. 2004) were measured in the project area during 2004. The dominant functional group (warm season native short grass, cool season introduced mid grass, etc.) was identified every meter along a 25-meter transect. The two to three dominant grass species were also identified along each transect, and the data provided generalized information of plant composition and production.

Comment: The FS used the Belt Transects in helping to determine seral stages by providing generalized information of plant composition and production. Belt Transects cannot be used in conjunction with NRCS State & Transitions models. Belt Transects will not work for long term monitoring of seral stages by grassland types. The subjective data will not work to determine changes in seral stages.
RESPONSE: See Response to Comment C-3.199 regarding the collective plant composition data. The belt transects were never used or implied to be used for seral stage estimates. They did however provide additional information for general conditions of plant composition along the sample transect.

C-3.192 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 191, it states:

ROBEL POLE

- Plant structure as measured with Robel poles (Project Record, Specialist Reports and Notes, Wildlife Report) included recording the dominant grass species at 20 stations along 300- to 400-foot long transects. One hundred eighty-four Robel transects were measured in the project area. The plant species data was used to supplement general plant composition characteristics within pastures.

Comment: Other than a species list, the Robel Pole transects do not add anything to determine seral stages and in the determination of seral stages alongside the Sere Plot or the NDSU data.
RESPONSE: See Response to Comment C-3.199 regarding the collective plant composition data. Similar to the belt transects, Robel poles were never used or implied to be used for seral stage estimates but they did provide additional information for general conditions of plant composition.

C-3.193 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 191, it states:

FIELD OBSERVATIONS

- Notes of general grassland composition were collected while traversing several pastures on foot during the course of woody draw and seral stage sampling. This information was used to supplement descriptions of general plant composition.

Comment: Other than an ocular observation species list, it really doesn't add anything to determine seral stages.
RESPONSE: See Response to Comment C-3.199 regarding the collective plant composition data.

C-3.194 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, page 191, it states:

BROKEN LANDS

- Previously farmed and abandoned cropland, hereafter referenced as broken land, was identified from a GIS layer constructed from aerial photographs from the 1930s and 1950s. These lands were generally re-seeded to non-native crested wheatgrass and currently tend to support a mixture of crested wheatgrass, varying amounts of several native grasses, and invasive bluegrass, smooth brome *(Bromusinermis),* and annual brome. Other areas with high proportions of invasive grasses occurring outside of broken land were delineated during various fieldwork and pasture visits. An inventory of heavily invaded portions of the project area is incomplete but a partial map layer is included in Appendix A of the Botany Report (Project Record, Specialist Reports and Notes).

Comment: The FS did not provide a map of how much "broken land" or crested is in the project area. Invasive plant species were estimated to be 16% based on 16% of the transects were dominated by invasive species.

The FS established 24 of its sere plots in broken lands. Seral Stages apply to native ranges and cannot be evaluated in non-native grasses. The 24 plots should be removed from the seral stage analysis because they skew the data.
RESPONSE: The broken land layer and heavily invaded sites are shown in the map of Appendix A in the Botany specialist report. See Response to Comments C-3.16 and C-3.118a regarding the acreage of these sites.

Invasive plant species were not estimated to be 16 percent across the project area; this value represents the number of sample sites that were at an Invaded Grass State. Another 10 percent of sites were approaching a transition to an Invaded Grass State, and the majority of remaining sites contained varying amounts of invasive grasses. Including crested wheatgrass planted sites where crested wheatgrass was not treated as an invasive grass, only 13 (6 percent) of the 185 NDSU and sere plots sites contained only minor traces or no invasive grasses.

As indicated in Table 5 (page 44) of the Botany specialist report, the proportion of sere plots in broken land at early, mid, and late seral stages was about 13, 83, and 4 percent,

while the proportion of stages among unbroken land was about 6, 86, and 8 percent. The results are most appreciably different for the proportion of early and late seral stages, but among both groups of sample plots, there was a shortage of late stages and an excess of mid stages compared to desired conditions, in agreement with results from the combined set of broken and unbroken land sites. Thus, the results were generally similar. The greater proportion of early stages, and lower proportion of late stages among broken land sites is not surprising in view of the frequently poor coordination of grazing seasons with maximum crested wheatgrass palatability in broken land that impedes the establishment of native grasses through selective use.

C-3.195 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, Data Analysis, page 191, it states:

- The above data were utilized to estimate the distribution of seral stages in the project area. The sere plot data (2005; 2006 to 2010) were analyzed with respect to habitat types by comparing field measurements with quantitative descriptions of the habitat types (Jensen et al. 1992, 2002). These data were also evaluated with respect to the ecological sites by comparing species cover measurements with quantitative descriptions of the relative plant composition for the ecological site (NRCS 2006, 2009).

Comment: The Jensen et al. 1992, 2002 draft publications were all based on ocular estimates for both production and canopy coverage. The sere plot data (2005; 2006 to 2010) that were analyzed with respect to habitat types by comparing field measurements with quantitative descriptions of the habitat types would be an "estimated" data set. This data set should not be used for determining seral stages.

RESPONSE: Regardless of ocular estimates versus cover or biomass measurements, seral stages were evaluated with respect to the relative proportions of individual species in the community as described by Jensen et al (1992, 2002), and their validity is supported by the similarity of descriptions to those developed by the NRCS for ecological sites with the same climax communities. The results are equally as valid as comparing measurements against the ecological site descriptions, and both methods provided similar results as long as the site was not at an Invaded Grass State. The final reported analysis for seral stages across the project area was conducted with respect to ecological sites and state and transition models, decreasing the point of the comments argument.

Both the habitat type and ecological site descriptions are models and the resulting evaluations are estimates due to the numerous species and combinations of species involved. Seral stage classifications will always be an estimate based on conceptual models developed as a point of reference for the purpose of categorizing and describing existing conditions and predicting expected changes in plant composition with various management actions. The current state and transition models developed for several ecological sites by the NRCS are based on varying numbers of clipped sites, but fewer than ten sites for some ecological sites (NRCS 2006). However, the models are also based on field observations and the knowledge of range scientists and/or specialists.

C-3.196 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, Data Analysis, page 191, it states:

- Seral stage of the NDSU sample sites (2008 and2009) was estimated by comparing production and/or cover measurements with quantitative descriptions of the ecological site and associated state and transition models (NRCS 2006, 2009).

Comment: This data set is probably the FS's best data set to use in determining seral stages.
RESPONSE: The sere plots have similar results with NDSU plots, which substantiates the validity and conclusions of both. The NDSU data did indicate greater proportions of Invaded Grass States and early stages, and lower proportions of late seral stages. See Response to Comment C-3.195.

C-3.197 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Methodology, Data Analysis, page 192, it states:

- Measurements of species and ground component frequency obtained from the pace transects from 1978 through 1980 and 2009 through 2010 were compared to evaluate changes or trends in plant compositions.

Comment: This data set doesn't lend itself to help with seral stage determinations.
RESPONSE: See Response to Comments C-3.189, C-3.190, and C-3.199. It was not meant to imply that pace transects could be used to evaluate seral stages, but the downward trend in plant composition indicated by the pace transects is important.

C-3.198 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Affected Environment, page 192, it states:

- The results of the sere analysis are displayed in Table 3.27. With regard to the collective sere plots sampled between 2005 and 2010, the seral stage proportions were similar when evaluated with respect to habitat types or ecological sites, with the major difference involving the classification of Invaded Grass States that were not assigned a seral stage when referenced to ecological sites and state and transition models.

Comment: In the Sampling Protocol for the Sere Plots, the FS did not use Dr. Uresk's analysis methods for analyzing seral stages. NRCS State and Transition models were used to determine seral stage.

In Table 3.27, the FS has included the sampling of broken lands in the Sere Plot and Ecoplot transects. Seral Stage applies to native grass communities. Introduced or non-native stands do not have a seral stage applied to them as the FS has done. Taking the “broken land” sere plots (24 or 30%) and ecoplots (34 or 40%) out of Table 3.27 resulted in the following for the native communities:

	Early	Mid	Late	Total # Sites
2005 sere plots	2(5.9%)	28(82.4%)	4(11.8%)	34
2006-2008 Sere Plots	2(9.5%)	17(80.0%)	2(9.5%)	21
Total Sere Plots	**7.3o/o**	**81.8o/o**	**10.9°/o**	**55**
1996-1998 Ecoplots	18.9%	54.7%	26.4%	53

The respective proportions of early, mid, and late seral stages was about 7%, 82%, and 11% for the 2005-2008 sere plots

RESPONSE: The analysis was conducted by comparing all the NDSU and Forest Service sere data against current state and transition models (NRCS 2009, 2006).

There was minimal difference in the seral stage results and conclusions regardless of whether the broken land sites or Invaded Grass States were included in the analysis; there was still a shortage of early and late seral stages and an excess of mid seral stages. Data from the Forest Service sere plots included in the SDEIS and Botany specialist report illustrate the similarity. The final analysis of seral stage proportions in the project area was conducted with respect to ecological sites and state and transition models .

The ecoplot data were included for completeness in the reports but not included in the final analysis of current seral stages across the project area. See Response to Comment C-3.185, C-3.194, and C-3.199.

C-3.199 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Affected Environment, page 192, it states:

- The sere plots and NDSU plots measured from 2005 through 2010 provided the most current and accurate evaluation of plant composition and seral stages across the project area. The proportion of early, mid, and late seral stages of about 7, 72, and 5 percent, respectively, indicate a shortage of early and late seral stages compared to desired conditions. Sixteen percent of sites were at an Invaded Grass State (Table 3.27) and represent an undesired condition due to adverse effects on the maintenance of native plant communities, associated biodiversity, and the sustainability of current rangeland resources.

Comment: In the Grassland Plan, Chapter 3, page 231, Table 3-120 states:

Table 3-120. Percent Desired Versus Existing Composition by Seral Stage.
Dakota Prairie Grasslands Early Mid Late
<u>Medora Badlands GA</u>

Existing	52%	41%	7%
Desired	**10-15%**	**65-75%**	**15-20%**

Percent Desired Versus Existing Composition by Seral Stage.

Dakota Prairie Grasslands	**Early**	**Mid**	**Late**
Medora Rolling PrairieGA			
Existing	48%	43%	9%
Desired	**10-15%**	**65-75%**	**15-20%**

The FS states that in the project area, "the proportion of early, mid, and late seral stages of about *7, 72, and 5 percent*, with 16% invaded grass state, respectively, indicate a shortage of early and late seral stages compared to desired conditions." The FS doesn't address the 16% they labeled as "Invaded Grass State."

Compared to the Grasslands Plan, the FS has missed the mark in their Seral Stage estimates by an average of:

- 43% for early seral,
- 30% for mid seral
- 3% for late seral

Since the FS relied substantially on their Grasslands Plan Data for the ROD of 2002 and 2006, it doesn't look like the data was of sufficient accuracy to use for the ROD.

As an example, a summary of Allotment #126 was prepared on seral stages from pages 2 and 66 of the SDEIS, Chapter 3, Part 2 as follows:

On page 2, Table 126.2, existing condition:

> Seral Stages - Predominance of mid seral stages and varying mixtures of native and invasive grasses comprised unbroken land. The south and northeast portions of pasture 5, the south half of pasture 6, and all of pasture 10 consisted of broken land and crested wheatgrass.

On Page 6, a summary of "Seral Stages" section is as follows:

1. Pasture 126-01. 15% NFS.
   - The FS uses *ocular observation* to describe the pasture.
   - There was*1 Robel Transect* along a lower slope

2. Pasture 126-02. 44% NFS.
   - *Sere Plot* along a ridge - mid seral- with dominance of blue grama. Western wheatgrass and bluegrass.
   - The FS uses *ocular observation* to describe the pasture.

3. Pasture 126-04. 100% NFS

- Native pasture- with bluegrass and smooth brome
- *Sere Plot* – at the northern end of pasture – mid seral – with moderate amounts of annual brome and bluegrass.

4. Pasture 126-05. 100% NFS. 35% Broken or crested wheatgrass along broad ridgelines.
   - *Sere Plot*- at northern end of pasture- mid seral- for broken land with blue grama, sedge, bluegrass with crested.

5. Pasture 126-06. 100% NFS.
   - *Sere Plot* – on the edge of broken land- early seral- with blue grass, sedge, exceeding crested wheatgrass. Clubmoss comprises 22% of ground cover. Should not be used, is not representative of the area next to crested.

   - A plateau in the northeastern comer of pasture 6, isolated by Whitetail Creek, contained high condition communities of needle-and-thread *(Stipacomata* Trin. & Rupr.) and sedge, but invasive grasses increased along the lower slopes and dominated the terraces of the creek (no sere plots taken here).

6. Pasture 126-10. 100% NFS.
   - 80% broken or crested.
   - *NDSU sample plot* - crested wheatgrass, smooth brome, and Kentucky bluegrass *(PoapratensisL.)* comprised about 90 percent of the grass production.
   - The site was at or approaching an Invaded Grass State with Kentucky bluegrass and smooth brome comprising 35 percent of the grass production.
   - An *ecoplot* at the northern end of the pasture was dominated by crested wheatgrass and blue grama when measured in 1997.

The FS used both seral stage by ecological site and habitat type and traditional succession models to obtained seral stages when analyzing the sites in the sere plots. In the project file, a review of document "2006-2008 sere plots protected" found 2 of the 4 sere plots in Allotment #126 as follows:

- Sere plot "a126p5s1" was labeled for Ecological Site and HCPC as "Broken Land -Crested Wheatgrass, Loamy- AGSM-STVI; 5.2- Planted AGCR Invaded mid seral.
- Sere plot "a126p5/6s1" was labeled for Ecological Site and HCPC as "Loamy AGSM-STVI; 2.2) Native Invaded BOGR-CAREX/AGSM or; 4.1) shortgrass BOGR/Carex – early seral.

The terminology and ratings in the above two examples are used in the NRCS's state and transition models for determining seral stages based on frequency. NRCS State and Transition Models (S&T models) can be used to determine seral stages. The S&T models contain Plant Communities and Transitional Pathways diagrams for ecological sites found within the project area.

NDSU, in cooperation with the Medora Grazing Association (MGA) and Forest Service, collected baseline vegetative data (structure, biomass, basal & canopy cover, frequency & density, rangeland health, and general site conditions) for the NB project area in 2008. Prior in depth vegetation analysis for this allotment is limited.

Based on the frequency of species present, each plot was evaluated to determine which plant community phase in the state and transition diagram for the corresponding ecological site. Plant community phases descriptions were compared to seral stage objective descriptions in the Land Resource Management Plan (LRMP) to determine a seral stage for each plant community phase. A seral stage assessment can then be assigned to each plot.

The S&T models have to be used by a qualified rangeland or vegetative specialist because they have to be able to understand the Plant Communities and Transitional Pathways, interpret the narrative section of the S&T models and interpret the plant community phases descriptions compared to seral stage objective descriptions in the Land Resource Management Plan (LRMP) to determine a seral stage. If the person using the S&T models isn't qualified then the determination of seral stages can't be used.

An example of the interpretation that takes place is: When does a community go from reference state to a native invaded state? At what percentage of invasive species does this occur? There is no indication in the project file as to who determined the seral stages for the sere plots using the state & transition models. If the person(s) did not understand vegetation and plant communities, it would invalidate the whole analysis.

Method Assessment:

- A summary of the methods used to determine seral stages is as follows:

The best method to use in determining seral stage was the NDSU data. The SDEIS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites.

All “Broken Land” plots should be discarded also. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage.

Because seral stage only applies to native plant species, FS cannot measure for seral stage in introduced species pastures.

Summary of seral stage analysis for Allotment 126:

In Allotment #126, the FS used the following transects and plots: 1 Robel transect, 4 sere plots, 1 NDSU sample plot and l ecoplot. A breakdown of the transects and plots shows the following:

- 1 Robel transect along a lower slope (native)

- 2 sere plots in native: 1 along a ridge (native)
- 2 sere plots in broken land (crested wheatgrass)
- 1 NDSU sample plot broken land (crested wheatgrass)
- 1 ecoplot in broken land (crested wheatgrass)

Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and an ecoplot located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.

Two sere plots were taken in 2005 and the other two between 2006-2008. "*Twentv-six sites* were sampled in the project area from 2006 through 2008 and *another 9 sites* were sampled during 2009 and 2010." The years of2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. The FS again biases the data by taking their readings in drought years and then basing reductions from the readings.

By removing the 2 plots in or adjacent to crested, the NDSU sample plot in crested, the Robel transect and ecoplot data, this leaves the remaining 2 sere plots in native (1 along a ridge shoulder in Pasture 2 and 1 at the northern end of pasture 4) to make an assessment of_seral_stage for the entire allotment.

The 2 sere plots in native (1 along a ridge shoulder in Pasture 2 and 1 at the northern end of pasture 4) were determined to be in mid seral by the FS. NFS acres in the allotment are 1950 ac. The 2 sere plots represent 975 ac. each. This is not acceptable according to the protocol on statistical sampling for seral stages.

Most of the other allotment write ups for "Seral Stages" are similar to Allotment #126 and shows the FS did not have adequate data, especially since they really only used Sere Plot data to make seral stage determinations, and did not follow procedures.
RESPONSE: The NDSU and sere plots were used to estimate the current proportion of seral stages across the project area. There was no intention to imply that the miscellaneous plant composition data involving ecoplots, pace transects, belt transects, robel transects, field observations, broken land layers, and photographs were included in this analysis. However, this collective data greatly contributed to general descriptions and characterization of plant composition, both across the project area and within pastures and allotments. These are valid data sources to describe existing conditions (FSH 2209.13, Chap 90, 93.3b), particularly when their limitations are transparently evident from their description - i.e. belt transects and Robel transects involved only the recording of the apparent three to five dominant species. However, the collective data set, including the NDSU and sere plots, tended to substantiate one another in regards to existing conditions within allotments or pastures. The data sets were individually summarized across the project area, and collectively used in the Effects Analysis (SDEIS Volumes I and II Chapter 3) to describe existing conditions by allotment and establish a baseline to predict changes in plant composition according to proposed management by alternative. The pace transects were more rigorous than some of the other miscellaneous data and revealed

disconcerting invasive grass trends among most sample sites. Conditions inherent to achieving seral stage objectives, as well as a range of other resource goals, rely on the maintenance of native plant communities so using all available data to evaluate existing conditions is justified as well as efficient.

Transitions between vegetative states followed that of the current NRCS (2006, 2009) state and transition models and are discussed in the Botany specialist report (pages 21 - 24). Slightly more conservative ratings were applied to the Forest Service sere plots for transition to an Invaded Grass State compared to NRCS methods due to the lower amount of species data and absence of production measurements. Thus, relative composition by cover of invasive species had to exceed 40 percent rather than 30 percent as suggested by the NRCS for transitioning to an Invaded Grass State.

Native Invaded States and broken land/crested wheatgrass can achieve late seral stages despite the presence of invasive grasses. Seven of the nine sample sites at a late seral stage in the project area contained invasive grasses. Seral stage was not determined for Invaded Grass States, and removing these sites from the analysis increased the proportion of early and mid stages but had little effect on the proportion of late stages.

See Response to Comment C-3.185. The 185 NDSU plots and the sere plots indicated a shortage of late seral stages across the project area, so all allotments need to collectively work towards increasing the proportion of late stages. More importantly, management of allotments highly effected by invasive grasses (as supported by all of the collective plant composition data) need to acknowledge and adjust to existing conditions by changes in grazing management to effectively utilize this forage component, and ideally, begin to shift plant composition back towards the native community in order to implement "normal" grazing seasons and management.

See SDEIS Volume III Chapter 4 Table 4.1 for a list of preparers and their general qualifications.

C-3.200 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Affected Environment, pp. 192-193, it states:

- The results identified in Table 3.27 for the 2005 and 2006 to 2010 data agree with general field observations (Project Record, Specialist Reports and Notes, Botany Report) that indicated a predominance of mid seral communities and relatively few areas of early and late seral communities among the primary areas of livestock use.

- Analysis of the ecoplot data set from 1996 to 1999 suggest that seral stages were at 15, 64, and 21 percent of early, mid, and late seral stages, respectively, very close to seral objectives identified under the current Grasslands Plan. This information, when compared to the sere plot analysis, is suggestive of a downward trend in late and early seral stages and an upward trend of mid seral stages during the past 10 to

14 years. However, because of differences in sample methodology, the ecoplot and sere plot data are not statistically comparable.

Comment: The FS states that compared the ecoplot data set for 1996-1999 to the sere plot analysis, it suggests a downward trend in late and early seral stages. The FS goes on to state that, "because of differences in sample methodology, the ecoplot and sere plot data are not statistically comparable." The FS is correct that the_ecoplot and sere plot data are not statistically comparable. So why did the FS make the comparison in the first place. The reason is to imply there is a downward trend in last and early serial, when the FS really doesn't know if there is or isn't.

The reason they don't know if there is a downward trend in late and early serial is because they have very little data (seen Comment #199) to make the assumptions they are making on seral stages and they have no trend data because they haven't completed any monitoring to establish a trend. The NDSU data when it is completed and analyzed will establish the most accurate baseline from which to monitor trend.

The grassland objective for seral stages is meeting or moving toward the desired conditions of 10-15% early seral, 65-75% mid sera1 and 15-20% late seral. The FS states that in the project area, "the proportion of early, mid, and late seral stages of about *7, 72, and 5 percent*, respectively, indicate a shortage of early and late seral stages compared to desired conditions." However, since the FS is unable to establish a trend (Table 3.27) for the *7, 72, and 5 percent,* they really can't make the reductions they call for in Alternative 4 until a trend is established. The seral stages may be moving towards meeting the late and early seral objectives already.
RESPONSE: The ecoplot data was evaluated prior to realizing there would be two years of NDSU and additional time for sampling of sere plots, and to efficiently utilize all available data. The collective plant composition data does indicate an increase of invasive grasses that adversely affects the potential achievement of seral objectives and the maintenance of native plant communities, and the ecoplot data added to this conclusion (see Botany specialist report).

The most definitive trend data involves the pace transects. The collective plant composition data from these transects does indicate a downward trend in plant composition objectives as indicated by the high occurrence of invasive grasses.

Trends of seral stage/plant composition were predicted from current conditions and the likely effects of proposed management. The conclusions and assumptions are supported by the current and best available principles and theories of range science, including state and transition models. Additional NDSU and Forest Service monitoring data are expected to substantiate these conclusions.

Current analysis indicates a high likelihood that conditions are trending away from desired conditions, primarily as a result of invasive grass increases. The MGA has not provided any evidence to support contentions that plant composition or other resource

conditions are increasing towards objectives. However, as stated in the effects analysis for seral stage/plant composition in several allotments, neither current management nor proposed management, including livestock reductions, is predicted to contribute to decreasing invasive grass problems and upward trends in the maintenance of native plant communities.

See Response to Comments C-3.15, C-3.82 and Botany Report Part A pages 64-67 and 122-123.

C-3.201 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Affected Environment, page 193-194, it states:

> Current data provide evidence that invasive grasses are spreading and increasing throughout upland grass communities in the project area. This is of greater concern than the proportion of seral stages because of the adverse effect of invasive grasses on the maintenance of native plant communities and diversity. Re-measurement of the 28 pace transects with the same methodology and site locations provided strong evidence of an increase in invasive grasses, with the average relative frequency of all invasive grasses increasing from 21 to 37 percent, and Kentucky/Canada bluegrass increasing several fold, from 4 to 20 percent between 1980 and 2010.

Comment: The FS makes a very important statement concerning the health of the rangelands in the project area. They state:

- Current data provide evidence that *invasive grasses* are spreading and increasing throughout upland grass communities in the project area. **This is of greater concern than the proportion of seral stages because of the adverse effect of invasive grasses on the maintenance of native plant communities and diversity.**

The MGA agrees with the FS on this issue. MGA also doesn't see the FS addressing this issue. MGA however, disagrees with the FS's assessment on the source of the problem. The FS actually dropped this issue when it noted rangeland health was good and would not be addressed.

The FS states:

- These sites are at a high risk of transitioning to an Invaded Grass State without intensive management targeted to reversing the trend of increasing invasive grasses (NRCS, 2009).

- A fundamental principle of range management involves a change in species composition as a result of selective utilization of certain plant species that confers a competitive disadvantage and allows other plant species to increase in dominance (Belsky and Gelbard 2000, Briske et al. 2008, Dyksterhuis 1949, Holechek et al. 1999, Lewis et al. 1956, NRCS 1997, Trammel and Butler 1995).

- Mid and late summer grazing periods among mixed invasive-native grass pastures are likely to result in excessive utilization of the native component because grazing extent and production has been decreased in proportion to the extent of invasive grasses. Increased utilization of the native grass component therefore confers a competitive disadvantage to these species and establishes positive feedback for additional invasive grass expansion. Poor coordination of the grazing season with invasive grass palatability is referenced as a composition-timing conflict in table summaries and effects analysis that follow.

The FS makes the claim that sites are at a high risk of transitioning to an Invaded Grass State in the project area because a change in species composition as a result of *selective utilization of certain plant species* that confers a competitive disadvantage and allows other plant species to increase in dominance. So in essence the FS is saying that grazing is bad for the area.

What the FS doesn't say in this analogy is the competitive disadvantage occurs when plants are grazed continuously throughout the grazing season, and not provided the break they need to stay healthy. The break that is needed comes through sound grazing management practices that not only provide the needed break, but also allows plants to outcompete most invasive species.

The FS goes on to say that poor coordination of the grazing season with invasive grass palatability is referenced as a **composition-timing conflict** in table summaries and effects analysis that follow.

From page 4 of the Glossary, Composition Timing Conflict is defined as - poor coordination of grazing periods with invasive grass palatability when these species comprise significant portions of the potential forage resource. Results in an increased potential for excessive utilization of the native forage component.

On pp. 195-196, SDEIS, the FS states,

- "However, invasive grasses complicate typical paths of succession in much of the project area. *Invasive grasses have a high potential to continue spreading. even if livestock grazing is removed due to inherent competitive abilities and as assisted by increasing plant litter that increases moisture conservation.* Decreased plant diversity results with increased dominance of invasive grasses (Sedivec 2006). Populations of invasive sweet clover may assist invasive grasses by increasing nitrogen availability (NRCS 2009, but see Van Riper and Larson 2009), and removal of livestock that selectively graze sweet clover could assist greater seed production and prominence of the species, thereby assisting further invasive grass expansion."

- However, invasive grasses already present in the system have a high potential to continue increasing with or without livestock grazing, and would likely impede the development or long-term maintenance of late seral native plant communities.

The FS is admitting that even with livestock completely out of the picture, invasive species will continue to spread.

If this issue is **of greater concern than the proportion of seral stages because of the adverse effect of invasive grasses on the maintenance of native plant communities and diversity,** then why isn't the FS spending more time on this issue and working with MGA on how to solve the invasive species issue than it states in the SDEIS?

The only reason the FS brings this into the SDEIS is to state a change in species composition as a result of *selective utilization of certain plant species*. It supports their philosophy that reductions are needed at all costs in order for the project area to meet objectives. The FS does not offer any solutions to the problem nor any independent analysis of whether livestock is the cause. Given the intensive energy development, it is more likely that grazing is not the cause.
RESPONSE: Grazing, in general, is not bad, however some aspects of present management are contributing to the spread of invasive grasses due to a lack of prescribed grazing that targets the effective utilization and control of invasive grasses. Grazing strategies (via livestock) targeted to the efficient use and control of invasive grasses, and that provide for the maintenance and vigor of native grasses is a tool that would aid in the management of invasive species.

The large majority of grazing pressure is directed to native grasses and assisting the spread of invasive grasses. Stocking levels that incorrectly assume equal utilization of all forage components contributes to the problem, as do annual introductions of invasive grass hay. Corrective actions discussed by the NRCS (2006), Sedivec (2006), and others (Davies and Johnson 2011, Dekeyser et al 2010, Krueger-Mangold et al 2006, Larson et al 2011, Masters and Sheley 2001, Sheley et al 2010, Vasquez et al 2010) involve increasing the use of the invasive component and decreasing use of the native component until it has increased in dominance and can tolerate desired grazing levels and seasons of use. Halting the annual introduction of invasive species hay would also be a significant contribution to controlling the problem.

See Response to Comments C-3.65, C-3.82, and D-32.14.

C-3.202 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Affected Environment, page 194, it states:

- The desired proportion of seral stages for grassland habitat types among both the Badlands and Rolling Prairie Geographic Areas is 10-15 percent Early, 65-75 percent Mid, and 15-20 Late (Grasslands Plan, pp. 2-11, 2-19). A full spectrum of cool- and warm-season grass species and communities is desired to maintain or perpetuate inherent diversity of the system (Grasslands Plan, pp. 2-10, 2-17).

Comment: The objective for seral stages is meeting or moving toward the desired conditions of 10-15% early seral, 65-75% mid seral and 15-20% late seral. This excludes the 8,357 acres of shrub habitat types since the above statement applies to “grassland habitat types” only.

RESPONSE: The Grasslands Plan focus is on herbaceous plant communities but includes the herbaceous understory of sagebrush habitat (Grasslands Plan page 2-19).

C-3.203 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, pp. 194-195, it states:

- Intensity, frequency, and timing of disturbance on native species communities, and how these affect trends towards seral objectives, collectively constitute one of the indicators used to address seral stages. As intensity and frequency associated with livestock grazing increases, plant composition shifts towards early seral stages. As disturbance associated with livestock grazing decreases, plant composition shifts toward late seral stage. Changes in the timing of livestock grazing disturbances can also affect seral stages by changing the species that are selected; therefore, those species are competitively disadvantaged.

Comment: The generalized statements by the FS about native grass communities and grazing tend to show the lack of knowledge by the author of grazing systems. Intensity and frequency of grazing does not generally lead to a shift towards early seral stage. If this were true then in the analysis conducted by the FS on the McKenzie County Ranger District Pasture 2, 10 & 11 project, how does one allotment obtain 62% late seral with the approximately the same overall grazing program as the North Billings project? Literature supports the fact that native grass communities can have abundant late seral with increase intensity and frequency of grazing.

A reduction in intensity and frequency of grazing doesn't always lead to facilitate the development of late seral stages. It can just reduce the size of the problem, unless the reduction is followed by improved management and/or water development, neither of which the FS is supporting in this SDEIS.

See Comment #62.
RESPONSE: See Response to Comment C-3.62 and refer to *Conservation Benefits of Rangeland Practices* (Briske et al 2011).

C-3.204 – In the SDEIS, Chapter 3, Part I, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 1, page 195, it states:

> Research on the Northern Great Plains (NGP) has shown that long-term moderate and high stocking levels similar to those occurring in most allotments of the project area result in increased dominance of early seral species, with corresponding decreases in late seral species (Barker and Whitman 1989, Biondini and Manske 1996, Brand and Goetz 1986, Holechek et al. 1999, Jensen et al. 1992, Lauenroth et al. 1994, NRCS 2009, Rauzi 1963, Sims et al. 1978, Whitman and Wali 1975, Willms et al. 2002).
>
> **Comment:** The FS implies that the project area has had long-term moderate and high stocking levels. However, a review of the NDSU data for 2008 and 2009 shows that the project area is stocked from light to moderate levels on the average. The FS is grossly overstating the stocking levels on the project area, and thus misrepresenting conclusions

such as, “result in increased dominance of early seral species, with corresponding decreases in late seral species”.

RESPONSE: The NDSU data involved measurements of plant composition but did not analyze stocking levels and it cannot be concluded that the data shows stocking is light to moderate. Levels of utilization at the time of sampling were estimated but these are not indicative of total annual use.

Levels of Authorized Use and/or reported use well above initial estimated carrying capacity for most allotments are equated with high stocking levels. Levels of reported use in the project area were provided by the MGA and members through AOIs.

C-3.205 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 1, page 195, it states:

- Thus, removal of current livestock grazing pressure would create conditions favorable for a shift of grassland communities towards late seral stages and potential climax communities. A shift towards late seral stages would likely result in decreased plant diversity or species abundance (Milchunas and Lauenroth 1993) involving early and mid seral grasses and forbs. The greatest decrease would occur in the abundance of early seral species, but they would persist on sites of poorly developed soil or areas of primary and secondary succession such as residual buttes and parent material outcrops, sites of natural erosion/deposition, and prairie dog towns or other sites heavily disturbed by wildlife.

Comment: On one hand the FS states, “removal of current livestock grazing pressure would create conditions favorable for a shift of grassland communities towards late seral stages and potential climax communities.” Then on the other hand they state, “removal of current livestock grazing pressure would create conditions favorable for a shift of grassland communities towards late seral stages and potential climax communities.” This leads MGA to believe the FS does believe that some livestock grazing level is acceptable, but not the same level MGA believes is acceptable. MGA want to continue its moderate grazing level, and the FS would like to see a much lighter grazing level for political rather than scientific reasons.

Others in the FS on the DPG would like to see grazing eliminated all-together.

RESPONSE: The Forest Service desires to establish grazing levels and livestock management based on the best available science to achieve the desired resource objectives. See Response to Comment C-3.201. Eliminating grazing would not meet the Purpose and Need for the project.

C-3.206 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 1, page 195, it states:

- However, invasive grasses complicate typical paths of succession in much of the project area. Invasive grasses have a high potential to continue spreading, even if livestock grazing is removed due to inherent competitive abilities and as assisted by

increasing plant litter that increases moisture conservation. Decreased plant diversity results with increased dominance of invasive grasses (Sedivec 2006). Populations of invasive sweet clover may assist invasive grasses by increasing nitrogen availability (NRCS 2009, but see Van Riper and Larson 2009), and removal of livestock that selectively graze sweet clover could assist greater seed production and prominence of the species, thereby assisting further invasive grass expansion.

Comment: MGA agrees with what the FS has stated above. Even without livestock invasive grasses will continue to spread.
RESPONSE: Comment noted.

C-3.207 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 1, page 196, it states:

- In summary, removal of livestock grazing would contribute to potential shifts in plant species composition towards late seral stages, with a decrease of early and mid seral stages and species. Thus, *Grasslands Plan Desired Conditions for seral stages would not be met*. However, invasive grasses already present in the system have a high potential to continue increasing with or without livestock grazing, and would likely impede the development or long-term maintenance of late seral native plant communities. Furthermore, native plant diversity or abundance would decrease with increased invasive grass dominance. Natural dispersal of invasive grasses and noxious weeds would continue and be assisted through vectors of oil and gas development, road maintenance, recreation, and wildlife.

Comment: MGA agrees with what the FS has stated above. Even without livestock invasive grasses will continue to spread.
RESPONSE: Comment noted.

C-3.208 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 2, pp. 196-197, it states:

- "the apparent trend of increasing invasive grasses would be expected to continue under Alternative 2 and would be assisted by the current management practices outlined below."
    - Moderate to high stocking levels - The average weight of most modem cow breeds has significantly increased since the late 1940s (Carter 2008, Dhuyvetter 1995, Hancock 2006). Larger cows eat more forage, which isn't adjusted for under this alternative.
    - Composition-Timing Conflicts - there is a general lack of prescribed grazing that incorporates optimum periods of palatability and utilization of invasive grasses, including crested wheatgrass. This situation is referenced as a composition-timing conflict and affects about 70 percent of the allotments to

varying degrees.

- o Hay Feeding- Most hay is fed in the winter and is often composed of a variety of grasses including crested wheatgrass; more aggressive invasive species of sweet clover, smooth brome, bluegrass, and annual brome have also been observed.

- Invasive species have increased under the current grazing management and would continue. Alternative 2 would move further away from Grasslands Plan seral stage objectives.

Comment: As stated in Comment #207 above in Alternative 1, ",invasive grasses already present in the system have a high potential to continue increasing with or without livestock grazing, and would likely impede the development or long-term maintenance of late seral native plant communities." So with or without livestock grazing the invasive plants persist. So maybe the answer to controlling invasive species is something else besides removal or reductions of livestock.

The FS has not proven that there is a reason to adjust for larger cows or how big the larger cows actually are. Since the FS has little to no trend data based on monitoring, they cannot say which direction the objectives are going, and cannot say that objectives aren't moving towards.

The FS's use of the term "Composition-Timing Conflicts" is actually the first time the MGA has heard this term and now knows what it means. Since this issue is **of greater concern than the proportion of seral stages because of the adverse effect of invasive grasses on the maintenance of native plant communities and diversity,** then why isn't the FS working with MGA on how to solve the invasive species issue?

The FS states: "This situation is referenced as a composition-timing conflict and affects about 70 percent of the allotments to varying degrees." The data the FS used to determine the 70% provides an estimate and not a very good one at that, to how big the problem of invasive grasses on the project area.

Invasive species increase under Alternative 1 and Alternative 2, with or without grazing. Alternative 1 and 2 would move further away from Grasslands Plan seral stage objectives.
RESPONSE: The Forest Service agrees that the answer to controlling invasive species would involve something more than just livestock reductions; namely, establishing grazing seasons and other management tools. Any of these tools would require involvement from the MGA and its members.

The estimate of 70 percent composition-timing conflicts was obtained by evaluating grazing seasons among broken land/crested wheatgrass and heavily invaded pastures. A composition-timing conflict was identified if these components comprised a significant portion of the potential forage in 50 percent or more of an allotment, and grazing seasons were poorly coordinated with palatability of the invasive forage. The collective plant

composition data supports the stated extent and degree of the problem, and additional NDSU data from 2010 are likely if not certain to substantiate and possibly increase these conclusions.

See above responses and Response to Comments C-3.15, C-3.82, C-3.135, C-3.201, and C-3.208, and C-3.210.

C-3.209 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 3, pp. 197-200, it states:

- A summary of the effects of initial actions by allotment is presented in the Table 3.28. A detailed discussion of each allotment is contained in Part 2 of this chapter.
    - **Table 3.28 — Effects of proposed actions on current trends of plant composition under Alternative 3**
- Collective initial actions under Alternative 3 would improve plant composition in 11 of the 43 allotments. Of the 11 allotments, 10 are projected to show slight improvement and one 1 would show marked improvement. Of the remaining 32 allotments, 26 would experience no change in the current trend of plant composition and would remain neutral, and 6 allotments are projected to experience a decreasing trend in seral conditions as a result of the proposed actions.

Comment: The current condition for the project area is 7% early seral, 72% mid seral, and 5% late seral. With only 10 of the 43 allotments showing a slight improvement, and 1 of the 43 allotments showing a marked improvement (Allotment #278), there would be no shift in late seral since all the pastures in Allotment #278 are crested (Broken).

Of the remaining 32 allotments: 26 show no change in trend from current, and 6 allotments would have a decreasing trend in seral conditions (Allotments #130, 140, 142, 258, and 289). Analysis of the individual allotments write ups for Allotments #130, 140, 142, 258, and 289 from Chapter 3, Part 2 shows all 6 allotments would remain at mid seral. Alternative 3 would not change the project area seral stages from existing condition.

The FS doesn't give any seral stage percentages for Alternative 3 as to what they think can be achieved. The FS does state, "Invasive grasses would likely result in a downward trend of late seral stages and adverse effects on the maintenance of native plant communities." This is very subjective and probably means the FS could not interpret the data they collected to make that call.

RESPONSE: See Response to Comment C-3.194 regarding the potential for late seral stages in crested wheatgrass/broken land.

There would be some potential for positively increasing the maintenance of native plant communities and potential achievement of late seral stages among 11 allotments with positive effects, but persistent adverse effects of invasive species would decrease the degree

of positive effect. Neutral effects would not change the current trend of plant composition, but moderate to high composition-timing conflicts that presently occur in 15 of the 26 allotments, and lower levels of conflict in 4 allotments, would have a high potential to result in decreasing conditions rather than no change as concluded in the comment. Negative effects on plant composition objectives in six allotments would further contribute to decreasing the potential achievement of plant composition objectives.

It is virtually impossible to precisely quantify the proportion of seral stages that would occur over the 10 - 15 period of the project, but the effects can be summarized as positive, negative, or neutral on the trend of existing conditions compared to current management. Neutral and negative effects in 74 percent of allotments combined with the high occurrence of invasive grasses and likely increases of these species, have a high potential to impede the achievement of seral stage objectives and maintenance of native plant communities.

C-3.210 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 3, page 200, it states:

- The trend of increasing invasive grasses is likely to continue under Alternative 3. The main practices contributing to this outcome involve the persistence of varying levels of composition-timing conflicts in about 70 percent of allotments with high amounts of invasive grasses. Adverse effects associated with hay feeding would continue. These factors would likely result in downward trends of late seral stages and adverse effects on the maintenance of native plant communities.

Comment: The FS states that, "The trend of increasing invasive grasses is likely to continue under Alternative 3." As stated in Comment #208, "As stated in Comment #207 above in Alternative 1, "invasive grasses already present in the system have a high potential to continue increasing with or without livestock grazing, and would likely impede the development or long term maintenance of late seral native plant communities."

The trend of increasing invasive grasses is likely to continue under Alternative 1. 2. and 3.

The FS also states that, "The main practices contributing to this outcome involve the persistence of varying levels of composition-timing conflicts in about 70 percent of allotments with high amounts of invasive grasses." However, in Alternative 1 with the elimination of grazing, there would be no "varying levels of composition-timing conflicts", and yet invasive species would still increase. The FS needs to re-examine the causes of invasive species as it obviously isn't livestock.

RESPONSE: Even though invasive grasses are likely to increase under all alternatives, that does not mean that livestock grazing is not contributing to their increase. See Response to Comment C-3.15, C-3.82, C-3.135, C-3.201, C-3.208, and C-3.210.

C-3.211 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 3, page 200, it states:

- Change in grazing strategies that have the potential to result in varying levels of decreased composition-timing conflicts would occur in a small portion of invasive grass infested allotments.

- The proposed action of delaying tum-in dates until June 1 or after sufficient growth is attained in native-dominated pastures has the potential to assist plant health and community development among all affected pastures compared to premature grazing that often occurs at present (Manske 2001, Peck et al. 1994, Cook and Child 1971). Early May and occasionally late April tum-in into crested wheatgrass or invasive pastures is appropriate for coordinating grazing with periods of high palatability for these species. Efforts to shift grazing periods towards early use of invasive grasses is proposed among relatively few affected allotments.

Comment: The above 2 paragraphs are somewhat confusing.

The FS has already stated on page 193:

- Current data provide evidence that invasive grasses are spreading and increasing throughout upland grass communities in the project area. **This is of greater concern than the proportion of seral stages because of the adverse effect of invasive grasses on the maintenance of native plant communities and diversity.**

If the FS truly believes this is the case, then why are they only proposing to shift grazing periods towards early use of invasive grasses is proposed among relatively few affected allotments.

They state, "Early May and occasionally late April tum-in into crested wheatgrass or invasive pastures is appropriate for coordinating grazing with periods of high palatability for these species." If this is the biggest issue in this report, it would seem the FS would be more aggressive on solving the spread of invasive species, especially since *the trend of increasing invasive grasses is likely to continue under Alternative 1. 2. and 3* (see Comment #210).
RESPONSE: See Response to Comment C-3.82. The trend of increasing invasive grasses would continue under all alternatives, not just Alternatives 1 - 3A.

C-3.212 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 3, page 201, it states:

- Managing water sources would likely improve livestock distribution and decrease levels of excessive utilization in some pastures. The addition of new water sources has the potential to result in similar benefits. However, increased distribution has the potential to result in decreased secondary range and a decrease in seral stages and high structure. Disturbances associated with new water developments are likely to facilitate local spread of invasive grasses.

Comment: The FS makes its case why "managing water sources" or adding new water sources is not good for meeting Grassland objectives. However, without adding new water sources, Alternative 3 cannot meet objectives. In essence, the FS has created an alternative that cannot be achieved by their definitions of what decreases seral stages and High structure.
RESPONSE: Evenly spaced livestock distribution and utilization would not contribute to a mosaic of grazing pressure and resulting seral stages and plant structure. There may be opportunities to use water developments to meet other resource objectives.

C-3.213 – In the SDEIS, Chapter 3, Part I, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 3, page 201, it states:

- Across the project area, continued levels of apparent overstocking and composition timing conflicts are likely to facilitate current trends of increasing invasive grasses and shifts towards early seral and/or invaded grass states.

Comment: The FS has already stated that *the trend of increasing invasive grasses is likely to continue under Alternative 1. 2. and 3* with or without livestock. The above statement, "continued levels of apparent overstocking and composition-timing conflicts" must not be true, since Alternative 1 eliminates grazing.
RESPONSE: See Response to Comments C-3.208 and C-3.210.

C-3.214 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 3, page 201, it states:

- If monitoring reveals that initial actions are not resulting in the desired outcome, then additional adaptive management actions would be implemented. The primary effect under this alternative is that the timeline to meet the seral objectives would be extended beyond the 10- to 15-year timeframe associated with this project.

Comment: Again, adaptive management actions equates to more reductions. The FS does admit that," the timeline to meet the seral objectives would be extended beyond the 10- to IS year timeframe associated with this project. MGA has been stating this throughout the document, the timeframe for this document is beyond the 10 years the FS uses for making final reductions.
RESPONSE: As indicated in the effects analysis, waiting ten or more years to implement adaptive actions would increase the difficulty and/or feasibility of reversing conditions and achieving plant composition and interrelated resource objectives, including the quality and quantity of livestock forage. Under adaptive management, the Forest Service has multiple tools to utilize if monitoring shows the need for a management change. See also Response to Comments C-3.2, C-3.15, C-3.24, and C-3.135. Trigger points may or may not result in a change in livestock management.

C-3.215 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Direct & Indirect Effects, Alternative 4, pp. 203-206, it states:

- Alternative 4

  A summary of the effects of initial actions by allotment is presented in Table 3.30. Also provided is a short synopsis of the reasoning for the effects determination. A detailed discussion of each allotment is contained in Part 2 of this chapter.

Table 3.30 — Effects of proposed actions on current trends of plant composition under Alternative 4

- Collective initial actions under Alternative 4 would increase the potential for achieving seral stage objectives in 14 of the 43 allotments. Of the 14 allotments, 9 are projected to show slight improvement and 5 would show marked improvement. Of the remaining 29 allotments, 23 would experience no change in current trends and would remain neutral; however, communities with high amounts of invasive grasses would have the potential to transition to invaded grass states. Six allotments are projected to experience a shift away from Grasslands Plan seral stage objectives. Five of the 6 allotments would be adversely affected by an increase in composition-timing conflicts and one of the allotments would be additionally impacted by splitting pastures and adding water tanks. The sixth allotment is also affected by composition timing conflicts and would be additionally affected by a 42 percent increase in Authorized Use.

Comment: The current condition in the project area is 7% early seral, 72% mid seral, and 5% late seral. The FS states, "collective initial actions under Alternative 4 would *increase the potential for achieving seral stage objectives* in 14 of the 43 allotments. With only 14 of the 43 allotments showing a slight improvement (9), or marked improvement (5), there would be a slight shift in late seral.

Of the remaining 29 allotments: 23 show no change in trend from current, and 6 allotments would have a decreasing trend in seral conditions. Alternative 4 would not change the project area seral stages from existing condition.

The FS doesn't give any seral stage percentages for Alternative 4 as to what they think can be achieved. The furthest the FS will go is, "collective initial actions under Alternative 4 would *increase the potential for achieving seral stage objectives* in 14 of the 43 allotments. This is very subjective and possibly means the FS could not interpret the data they collected to make that call. What this could mean is Alternative 4 could possibly achieve late seral objective, but Alternative 4 would not achieve mid-seral or early seral objectives. Again, this is just a guess based on the data provided by the FS.

The difference between Alternative 3 and 4 is as follows:

- Collective initial actions under Alternative 3 would improve plant composition in II of the 43 allotments. Of the 11 allotments, I0 are projected to show slight improvement and one 1 would show marked improvement.

- Collective initial actions under Alternative 4 would increase the potential for achieving seral stage objectives in 14 of the 43 allotments. Of the 14 allotments, 9 are projected to show slight improvement and 5 would show marked improvement.

The difference between the alternatives comes down to 3 allotments with the "increase in potential to achieve seral stage objectives", whatever that means, since analysis did not indicate any percentage change.
RESPONSE: Refer to the Response to Comment C-3.209, relative to the ability to quantify potential percentage change of seral stages.

C-3.216 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Cumulative Effects, Alternative 1, page 209, it states:

- ***Alternative 1*** may slow the spread of invasive grasses, but they are likely to continue expanding through natural competitive advantages and other vectors of dispersal. Although native-dominated grass communities would have the potential to progress towards later seral stages and climax communities with the removal of grazing, the potential expansion of invasive grasses would likely lead to Invaded Grass States in a high portion of the project area. Also, increased herbaceous litter accumulation is likely to occur with the removal of livestock grazing and would assist the expansion of some invasive grasses (NRCS 2009, 2006) through increased shading and moisture conservation and decreased vigor of the native plant community. As native plant communities change, so too would the distribution of seral stages away from that desired by the Grasslands Plan.

Comment: Again, without livestock, invasive species continue to expand.
RESPONSE: This was concluded in the SDEIS Volume I Chapter 3 and Botany specialist report.

C-3.217 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Cumulative Effects, Alternative 2, page 209, it states:

- However, because this alternative maintains the existing Authorized Use levels, rotations, etc., it will maintain current conditions and trends in plant composition. For these reasons, this alternative has the least opportunity to achieve a significant improvement in late seral stage of all the alternatives.

Comment: The FS does not believe maintaining current conditions is acceptable. The FS does have the opportunity to use all the management options to solve the issues on the project area, but they have chosen not to do that. In fact they have misstated the "current management" situation. For this reason, Alternative 2 should have never been considered.
RESPONSE: See Response to Comments C-3.82, C-3.201, and C-3.208. Alternative 2 was analyzed for baseline conditions and the potential for achieving desired objectives.

C-3.218 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Cumulative Effects, Alternative 3 & 4, page 209, it states:

- ***Alternative 3,*** initial actions are projected to increase the potential for achieving seral stage objectives in 11 allotments, maintain current condition in 26 allotments, and experience a decreased potential to achieve seral objectives in 6 allotments.

- ***Alternative 4*** would increase the potential for achieving seral stage objectives in 14 of allotments, maintain existing conditions in 23 allotments, and decrease conditions in 6 allotments.

Comment: The difference between the alternatives comes down to 3 allotments with the "increase in potential to achieve seral stage objectives", whatever that means, since analysis did not indicate any percentage change (See Comment #215).

Does this small difference of 3 allotments justify making reductions for cow size and the FS initial stocking rate? MGA doesn't believe it does.
RESPONSE: See Response to Comment C-3.209. Alternative 4 would have a slightly greater positive effect than Alternative 3 despite implementing fewer rangeland improvement structures. The comment relates proposed livestock reductions with a relatively small increase in plant composition objectives, but other resource conditions were also predicted to increase with the proposed reductions.

C-3.219 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Cumulative Effects, page 210, it states:

- *Adaptive Management.* Implementation of adaptive management options under Alternatives 3, 3A, and 4, including actions identified in the tool box, would improve the distribution of seral stages. *The greatest difference among these alternatives is the rate of response.* Alternatives 3 and 3A are projected to improve fewer allotments than Alternative 4. The amount of time needed to improve allotments not addressed under initial actions will be greater for Alternative 3 and 3A than for Alternative 4, which addresses more allotments than Alternative 3 and 3A.

Comment: The FS again states "*The greatest difference among these alternatives is the rate of response.*" Also, the second biggest difference among alternatives is the small rate of improvement in the resource objectives by such a drastic change between Alternatives 2, 3, and 3A and Alternative 4. This suggests that Alternative 3 is a mere excuse to impose greater reductions without proportional benefit.
RESPONSE: See Response to Comments C-3.24 and C-3.218.

C-3.220 – In the SDEIS, Chapter 3, Part 1, Seral Stages, Environmental Consequences, Consistency with Grasslands Plan, Alternative 3 & 4, page 210, it states:

- Apply vegetative structural and compositional objectives across all herbaceous community types. **Guideline**

Initial actions under Alternatives 3, 3A, and 4 would, to differing degrees, move plant composition (i.e., seral stages) towards objectives identified in the plan. ***Where monitoring shows initial actions to be insufficient, adaptive management actions would be implemented to help move areas towards objectives.***

Comment: The FS will use adaptive management to implement reductions on any monitoring, especially short term that might show initial actions to be insufficient.
RESPONSE: See Response to Comments C-3.2, C-3.15, C-3.24, and C-3.135

C-3.221 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, page 210, it states:

- The plains sharp-tailed grouse *{Tympanuchusphasianellusjamesii)* is the management indicator species (MIS) for the biological community associated with grasslands that contain scattered shrubs and diverse vegetative structure (Appendix H USDA 2001a). An important feature to this community is the availability of high-structure vegetation (such as herbaceous dominated grassland). Such habitat benefits nesting sharp-tailed grouse and some other ground-nesting avian species.

Comment: The FS chooses to address the plains sharp-tailed grouse as a resource, since this section is entitled Affected Environment & Environmental Consequences" which provides an overview and summaries by resource.

In Chapter 1, SDEIS on pages 32-35 in the Sensitive Species, Management Indicator Species, and Raptors, it states the project will have no effect on everything listed except "sharp-tailed grouse" which is a MIS. All the other species that the FS usually associates with the sharp-tailed grouse, i.e. Baird's Sparrow, Loggerhead shrike, Sprague's pipit, Dakota skipper, Otto skipper and Regal fritillary are not affected by the project. So the FS is managing for a single species at this point, not an MIS.
RESPONSE: See Response to Comment C-3.64. SDEIS Volume I Chapter 3: pages 214 - 215

High Structure has already been addressed in the SDEIS.

C-3.222 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, page 210, it states:

- The analysis area for sharp-tailed grouse is associated with the potential occurrence of quality nesting and brooding habitat within 1 mile (Grasslands Plan 1-14, #17) of their leks (dancing grounds). Surveys in 2004 and 2005 (Knowles) identified 37 sharp-tailed grouse leks located in or adjacent to the project area. The analysis area for the sharp-tailed grouse includes the project area plus an additional mile buffer to account for the leks identified outside the project area. The temporal context for the analysis is 10-15 years from present.

Comment: The analysis area exceeds the size of the project area to account for leks outside the area. The FS doesn't say if the grouse inside the area use those leks or not.

RESPONSE: On average, approximately three-fourths of sharp-tailed grouse hens will nest within approximately one mile of a lek, so it is assumed, and it is probable, that use occurs.

C-3.223 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, page 211, it states:

- Lek surveys conducted in 2005 (Knowles 2005; Warm 2004, 2005) identified 37leks throughout the project area, with the majority located in the eastern half of the project area. Some of the 37 leks may be "satellite" leks.

Comment: The FS doesn't identify how many of the 37 leks are "satellite" leks.
RESPONSE: "Typically the number of active leks varies among and within years for a defined population of prairie grouse" (Haukos and Smith 1999). The number of satellite leks is a moot point since they vary in location and number from year to year. The point of the survey and data is to show that a grouse population occurs on the landscape which points to the need for the Forest Service to manage for their habitat needs as an MIS.

C-3.224 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, pp. 211-212, it states:

- The 2001 Northern Great Plans FEIS (p. 239) states that "livestock grazing is the most significant and widespread activity affecting grassland structure." *Baseline grassland VOR transect data. collected in 2004 and 2005 within the project area. indicates that High structure grassland habitat is under represented. whereas Low and Moderate structure habitats are overly represented.* Using the individual station data from the VOR transect information provides the same overall picture as the transect average. When analyzing by stations, High structure is defined as equal to or greater than 5.5 inches, in accordance with the DPG response to SRT recommendation 11-2. Structure data are collected in the fall after most grazing is complete. Tables 3.31 and 3.32 provide summaries of project area transect and station structure distribution data from 2004 and 2005.

Comment: The FS would normally not use a drought year, much less a severe drought year as a benchmark just like they wouldn't use an above normal year like 2010 or 2011 as the benchmark.

Specialist Arden Warm states in his report that 2004 was a "drought year" for the North Billings Project area. Specialist Warm was wrong. It was a "severe drought". Analysis of any project based on a severe drought year is flawed and should not be used. MGA requests the FS not use Specialist Arden Warms report in the North Billings project.

March of 2011, Forest Service Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops:

- The FS will not use a drought year as the basis for any analysis.

Several scientists, like Dan Uresk, when asked if they would ever base their analysis on a severe drought year, they stated that doing analysis during a severe drought year and then basing your results on it is not science. It is definitely the wrong thing to do. They indicated that to base any results on a severe drought year will skew your results and make them meaningless.

See Comments #160, 161, 162, 163, 164, 165, and 180.

The FS comment that, "It was recommended during the SRT process that a station average of 5.5 inches or greater would define High structure" is not true. In the SRT report it states:

- In another scenario, if you had a desired vegetation height at nest sites (e.g., 5.5 inches) a logical questions would be, "How many stations were 5.5 inches or greater?"

The SRT gave this as an example, not a recommendation. At the FS states in their DPG Response. There was no science offered by the SRT for the 5.5". It was an example, as indicated by the wording, "In another scenario". Upon checking with several of the SRT members, they indicated the same thing, it was an example. After talking with Dr. Douglas Johnson, research statistician who designed the station level transect, he said he didn't know where the 5.5" came from.

The FS states that this analysis (SDEIS) adopted that recommendation. The FS adopted an example, not a recommendation. It is an example without science behind it.

See Comment #156.

RESPONSE: See Response to Comments C-1.3, C-1.10, C-3.156, C-3.160 - C-3.165, C-3.170, and C-3.180.

C-3.225 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, page 212, it states:

- **Table 3.31 – (Left) 2004 and 2005 transect herbaceous structure distribution within the project area**
- **Table 3.32 – (Right) 2004 and 2005 station herbaceous structure distribution within the project area.**

Comment: The SRT said that data that refer to LMRP VOR data collected between 1996-2006, pp. 169, 170, and 171 and should not be used.

Any use of the Dragon data and VOR transect data between 1995 and 2006 should be removed from this document (see Comment #153).

The VOR data between 2006 and 2009 does not show that the habitat types used to define biologically capable are capable of producing High structure. In fact they show the exact opposite.

A case in point is the following: what is the primary issue that the FS has with herbaceous structure on the NBSDEIS? They indicated that it is not enough High structure.

The FS states that on the Medora Ranger District that only approximately 6 percent of these transects had VORs greater than 3.5 inches. This doesn't prove that all habitat types are capable of obtaining High structure.

See Comments #153, 158, 159, 169 and 170.
RESPONSE: Under Key Issue #3 (SDEIS Volume I Chapter I, page 23) it states that "there is a concern that livestock grazing has affected the mosaic of herbaceous structure in the project area which has generally resulted in *too little High structure* and *too much Low structure* (emphasis added) in light of Grassland Plan structure objectives."

See Response to Comments C-3.7b, C-3.153, C-3.158, C-3.159, C-3.169, and C-3.170.

C-3.226 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, page 212, it states:

- Buffering the known leks within the analysis area by 1 mile accounts for approximately 42 percent of the NFS lands in the project area. Table 3.33 shows that for 2004 and 2005 the herbaceous structure distribution within the buffered lek areas is similar to the overall project area. Because sharp-tailed grouse utilize a combination of grasslands and shrubs, the shrub dominated or co-dominated transects were included in determining structure distribution identified in Table 3.33.

Comment: The FS states on page 168:

- If transects located in the three grass/shrub habitat types were dominated or co-dominated by shrubs, they were separated in the analysis. This was done because it is generally considered inappropriate to analyze or lump shrubs and herbaceous dominated data together (Uresk, personal communication, 2009; Smith 2008).

The reason Dan Uresk makes that statement is because he hasn't developed a VOR protocol for shrub dominated communities yet. Dan Uresk said that shrub communities with approximately 5% or less canopy coverage can be included in the analysis.

Any thicker than that and the shrubs are too thick to see through and shrub biomass cannot be accounted for. However, the FS never indicated which transects had less than 5% canopy coverage. The FS may have separated those transects in the analysis, but they also never used them in the analysis. If you can't sample it, it doesn't count. What this means is the 8,357 acres of the three (3) shrub dominated habitat types in the project area cannot be included in the biologically capable acres. This would mean under the FS definition of biologically capable there would be 46,018 ac. of biologically capable habitat types (see Comment #155).

Now the FS says they included the shrub dominated or co-dominated transects in determining structure distribution in Table 3.33. Since there isn't a protocol to include them, how are they included?
RESPONSE: See the Wildlife specialist report Appendix A, pages 48 and 49. Only those transects where the shrubs were identified on the field data sheets as a dominant or co-dominant were excluded from the primary analysis set. A dominant or co-dominant species typically accounted for 15 percent or greater canopy cover along a transect (see Wildlife Specialist report, Appendix B). This is appreciably higher than the mentioned five percent.

In the SDEIS Volume 2 Chapter 3, page 212, it is explained why the shrub data was included, and that is because the analysis was talking specifically about the habitat for sharp-tailed grouse that are an indicator for "the biological community associated with grasslands containing scattered shrubs." It is, therefore, valid to include the shrub transect data in this specific analysis.

See the Wildlife specialist report Appenxix A, pages 48 and 49.

C-3.227 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, page 212, it states:

- Sharp-tailed grouse utilize a variety of habitats including green ash woody draws. These woodlands provide forage, cover, and roosting sites and may be important in **harsh winters** (Prose 1987). The quality of the green ash woody draw habitat varies from healthy to unhealthy; however, **because of the number of woody draws within the project area, the woody draws do not appear to be a limiting factor for the sharp-tailed grouse.**

Comment: Grouse usually do not spend harsh winters (significant snow) on the "Grasslands". They usually find their way to a shelter belt around a farmstead and spend the winter there. *However. the FS states woody draws are not a limiting factor for the grouse.*
RESPONSE: Comment noted.

C-3.228 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, page 213, it states:

- There are areas within some allotments that are either not grazed or are very lightly grazed. These static long-term "rested" areas occur primarily in the Badlands, where topography may limit access and/or the forage base. ***However, densities of sharptailed grouse in the Badlands are typically low and, within the Badlands, these rested areas do not provide appreciable amounts of potential habitat for grouse or other ground-nesting species that prefer high-structure habitats.***

Comment: What the FS is saying in the above statement is grouse do not rely on the "Badlands" for High structure and there are very few grouse in the badlands.

This is further confirmed in an email dated December 8, 2009 from Jack Norman, Zone Soils/Hydrologist, DPG to Libby Knots, Planner DPG on "High Structure Tables based on soil productivity states the following:

- The badland ecological sites 58C have minimal potential to produce high structure based on the above production (1600 lbs/ac) and probably the grouse aren't there as much?

If the Badlands really do not count as high structure for grouse, and Badlands make up 70% of the project area (60,872 ac.) then the FS is only looking at the Rolling Prairie for high structure (26,390 ac.)Instead of 54,375 ac. of biologically capable land for high structure in the project area, there would only be a potential maximum of 26,390 ac or 30% of the project area. The objective of having 20-30% in High structure would equate to a range of 5,278 ac to 7,917 ac. The SDEIS indicates the existing condition on the project area is 5% in High structure or approximately 1320 acres.
RESPONSE: The Forest Service doesn't state anywhere in the SDEIS that sharp-tailed grouse "do not rely on the Badlands for high structure." It actually states that leks are known to occur in both Geographic Areas (SDEIS Volume I Chapter 3, Existing Condition page 211) and the highest lek densities occur in the interface between the two Geographic Areas. Appendix C of the Wildlife specialist report identifies that 13 of the 37 leks occurred in the badlands portion of the project area. On page 213 (SDEIS Volume I Chapter 3) it is stated that densities of sharp-tailed grouse are typically lower in the badlands and summarizes that high structure is an important feature of quality habitat – regardless of Geographic Area. There is no stand-alone projection on the number of grouse in either Geographic Area.

The e-mail referenced, was centered on the work that was being done for the Pasture 2, 10, and 11 range project and is not applicable for the work that was done for the North Billings project. Sharp-tailed grouse do certainly inhabit the badlands, and high structure is an important habitat feature for quality habitat.

C-3.229 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Affected Environment, page 213, it states:

- Prose assumes that between 5 to 20 percent good cover is required for minimal population levels.

Comment: The term "good cover" is equated to "High structure" and Prose indicated a range of 5-20% needed instead of what the Grassland Plan states, 20-30%.
RESPONSE: The Grasslands Plan is the guiding document for management of the Little Missouri National Grassland. Further, "good cover" as defined by Prose et. al. 2002 and "high structure" are not synonymous.

C-3.230 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse Population, page 213, it states:

- The Nature Conservancy, however, notes 7 and 8 percent declines for Canada and the western U.S., respectively, and about an *8 percent increase for North Dakota.* According to the Nature Conservancy, sharp-tailed grouse populations in eastern Montana, North Dakota, South Dakota, Nebraska, and southern Canada are more secure than other populations.

- The NDGF has been surveying sharp-tailed grouse using a block survey method. One of their survey blocks, the Gorham Census Area, is located in the project area. NDGF has been surveying this area since 1966. *Their 1966 to 2009 data show a stable to slightly increasing sharp-tailed grouse population in that block.*

Comment: Based on the above two statements from outside groups, the FS really doesn't know if they need to improve the habitat for grouse. There is no evidence that grouse populations are declining because of existing conditions.
RESPONSE: The Grasslands Plan is the guiding document for management of the Little Missouri National Grassland and data shows that we are not meeting Grasslands Plan goals and objectives for structure.

C-3.231 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse Population, page 214, it states:

- The DPG also monitors sharp-tailed grouse unit-wide through a system of monitoring blocks. One of these blocks lies within the project area. Survey information from 2007 to 2010 showed that the number of male grouse peaked at 59 males in 2008. In 2010, the number of counted males had dropped to 20. In 2008 the survey block contained five leks and in 2010 there were three leks. *Two consecutive harsh winters, 2008 through 2010, likelv contributed to the decline in numbers.* However, these data cover a very short time period for a highly variable population and it would not be valid to determine population trend based solely on this information.

- The population of sharp-tailed grouse in the project area is unknown, and predicting populations in a finite area such as the project area is difficult without extensive, long-term field data. However, surrogate information, including lek survey information from the project area and information contained in North Dakota Game and Fish (NDGF) monitoring reports (from 1998 to 2006), was used to model the grouse population within the project area (Project Record, Specialist Reports and Notes, Wildlife Report). The estimated number of grouse in the project area is identified at between 473 and 659 grouse.

- When discussing populations of a wide-ranging species such as the sharp-tailed grouse, it is important to note that focusing on project scale populations is incorrect

since it is out of spatial and temporal contexts. Sharp-tailed grouse populations are highly variable and can experience significant annual fluctuations in population numbers due to climate and habitat changes and other influences. Therefore, separating the individuals within the project area (a very small portion of the larger range) from the larger population would not be consistent with most viability analyses (Ruggiero et al. 1994).

Comment: The FS provides further information that they really do not know what populations exists in the project area, i.e. computer models to determine between 473 and 659, maybe. If this was actually is the number of grouse out on the project area, and if there was never more than this, what is the FS providing habitat for by making more high structure?

Since all the other species' needs are being met, grouse are the only species that the FS is managing for with increased High structure.

The FS indicates that, "discussing populations of a wide-ranging species such as the sharp-tailed grouse, it is important to note that focusing on project scale populations is incorrect since it is out of spatial and temporal contexts." Yet the FS is targeting grouse on a project level basis and separating the individuals out from the larger population by their own analysis.
RESPONSE: The SDEIS makes it clear that the sharp-tailed grouse population in the project is unknown and probably cannot realistically be known (SDEIS Volume I Chapter 3, Sharp-tailed Grouse Population page 214). The model information is provided for context and to assess potential impacts to the population.

The commentor misrepresents Table 1.4 (SDEIS Volume I Chapter 1, pages 32 - 34). The table referenced illustrates that for many sensitive species the effects call depends on the alternative with some showing a Beneficial Impact with increased High structure.

See Response to Comments C-3.65, C-3.171, C-3.176 and C-3.230.

C-3.232 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse Population, Desired Condition, page 214, it states:

- The desired condition is to provide diverse and quality nesting, brooding, and wintering habitat at levels that, in combination with habitat on adjoining lands, help support stable to increasing sharp-tailed grouse populations within 10 to 15 years (Grasslands Plan, pp. 2-14, 2-21).

Comment: From the information above the desired condition is being met because there are stable to increasing sharp-tailed grouse populations on the project area.
RESPONSE: The desired condition is to provide for the varied habitat needs of the sharp-tailed grouse in support of the populations, therefore population levels is not the only determination for whether the desired conditions are being met or moved towards. See Wildlife specialist report (Appendix C, pages 91 - 93).

C-3.233 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Environmental Consequences, Alternative 1, pp. 214-215, it states:

- It is uncertain how much High structure could be produced; however, the 2001 Northern Great Plains FEIS (Alt. 4, page 3-319) analysis projects that a minimum of 46 percent High structure on the landscape may be produced under a no-grazing scenario. Given a lack of other large-scale disturbances (such as fire), biologically capable sites would be strongly biased towards High structure, which provides important nesting and brooding habitat for sharp-tailed grouse. Additionally, there would be no potential for nest destruction resulting from livestock trampling and there would be reduced incidences of collisions with fences.

Comment: The 2001 Northern Great Plains FEIS (Alt. 4, page 3-319) analysis shows the following:

- On the Dakota Prairie Grasslands, *Alternative 4 would provide the best vegetative structure for upland bird hunting (15%/39%/46%),* followed by Alternative DEIS 3 (15%/49%/36%), Alternative 5 (15%/52%/33%), Alternative FEIS 3 (15%/60%/25%), Alternative 2(14%/66%/20%) and Alternative 1 (15%/66%/19%).

The 2001 Northern Great Plains FEIS (Alt. 4, page 3-319) analysis does not say, as the FS suggests, that Alt. 4 projects as a "minimum" 46% high structure. The analysis projects that Alt. 4 would produce a mix of structures with an estimated outcome of *15%/39%/46%.*

The following comment depicts the FS emphasis on how much they dislike livestock;

- Additionally, there would be no potential for nest destruction resulting from livestock trampling and there would be reduced incidences of collisions with fences.

The FS has not completed any surveys on livestock destruction of nest due to trampling.
RESPONSE: Relative to the NGP FEIS, it does say that a mix of structures would result from implementing Alternative 4.

Nest destruction from livestock grazing activities is well investigated in the scientific literature; for example, Jensen et al 1990, Paine et al 1996, and Pavel 2004. However, a recent study by Lusk and Koper (July 2013 Rangeland Ecology and Management) found no significant effect of grazing on nest survival.

C-3.234 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Environmental Consequences, Alternative 1, page 215, it states::

- The occurrence of drought may affect grouse habitat and, therefore, populations under this alternative. However, because of the substantial increase in High structure and absence of livestock influence, the effects on the sharp-tailed grouse population would be mitigated.

Comment: It is doubtful that even High Structure and no livestock grazing can mitigate the effects of drought on sharp-tail grouse.
RESPONSE: We recognize that while the Forest Service can manage the habitat, there are factors that are outside Forest Service control affecting wildlife population dynamics.

C-3.235 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Environmental Consequences, Alternative 3, page 215, it states:

- The initial actions of this alternative include establishing, changing, or maintaining rotational grazing systems, additional range improvements, fencing, water development, range pipelines, and range water management. Authorized Use would be maintained at current levels. Table 3.34 summarizes the effects of proposed initial actions to sharp-tailed grouse nesting and brooding habitat.

- As identified in the Herbaceous Structure section of this chapter, the use of grazing rotations and additional range infrastructure without Authorized Use/AUM adjustments is likely to result in the continued homogenization of herbaceous structure. Some Low structure may move to Moderate structure. However, there may also be a loss of existing High structure as rangelands are more efficiently utilized by livestock because of smaller pastures and more water sources. Because the amount of High structure is not projected to increase, sharp-tailed grouse nesting and brooding habitat in18 of the allotments would remain neutral, that is, exiting habitat conditions within a mile of known sharp-tailed grouse leks would be maintained. Nesting and brooding habitat would decrease in 13 allotments because of increased number of water sources, smaller pastures, and absence of changes in Authorized Use. Twelve allotments had no known sharp-tailed grouse leks (Table 3.34) within a mile of the allotment.

Comment: Table 3.34 shows a summary of projected effects, by allotment, for Alternative 3 initial actions on the nesting and brooding habitat of sharp-tailed grouse. The FS analysis of the effects of Alternative 3 is subjective or the FS's best guess on what the initial actions of this alternative include establishing, changing, or maintaining rotational grazing systems, additional range improvements, fencing, water development, range pipelines, and range water management would have on high structure.

The FS projects:

- 18 allotments remain neutral (no change) and
- 13 allotments decrease.
- 12 allotments had no known sharp-tailed grouse leks within a mile of the allotment.

The FS statement, "the use of grazing rotations and additional range infrastructure without Authorized Use/AUM *adjustments is likely to result in the continued homogenization of herbaceous structure.* Unless an area is overgrazed, the above statement is not true. Even levels

of grazing do not occur in in any grazing system. What the FS describes may occur on an irrigated pasture with very control grazing timing, but not on the open range.

The FS has stated on page 211, SDEIS, "the analysis area for sharp-tailed grouse is associated with the potential occurrence of quality nesting and brooding habitat within 1 mile (Grasslands Plan 1-14, #17) of their leeks (dancing grounds). Since 12 allotments had no known sharp-tailed grouse leeks within a mile of the allotment, the demand for high structure is less on these allotments than those with leeks. The 12 Allotments are #127, 132A, 132H, 133, 133D5, 135, 141, 220, 239, 248, 281, and 286.

The FS's statement, "However, there may also be a loss of existing High structure as rangelands are more efficiently utilized by livestock because of smaller pastures and more water sources" provides a good summary of how the FS view of Alternative 3.
RESPONSE: The scientific literature comments on how the traditional range management paradigm encourages uniformity (for example, see Derner et al 2009 and Fuhlundorf et al 2006) through increased infrastructure.

One of the benefits of fencing listed by Vallentine (1989) is to obtain better distribution of cattle. Holechek (1989) says water is the center of grazing activity and additional watering locations will often improve livestock distribution. Briske (2008) points out that one of the objectives of grazing systems is to "ensure more uniform animal distribution."

C-3.236 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Environmental Consequences, Alternative 3, page 216, it states:

- Implementation of adaptive management actions, including reductions in Authorized Use and implementation of rest, would improve sharp-tailed grouse habitat. This is because both of these actions are key in improving herbaceous structure (Brisket et al. 2008, Rice and Carter 1984), which in turn provides quality nesting and brooding habitat.

Comment: The FS addresses adaptive management actions, but does not disclose the effects analysis for those actions. Not disclosing effects is not "full disclosure" and cannot be used in this SDEIS. It also points out that any adaptive management actions used in the future will need to have further analysis and undergo the NEPA process before they are implemented. NEPA does not exempt complex issues from cumulative effects.
RESPONSE: The effects analysis for each adaptive option is described in the SDEIS, Volume II, for each tool proposed under Adaptive Options by allotment, this included analysis of cumulative impacts. This provides a very extensive analysis for each prescribed option. All of the tools' effects are also displayed by resource in the Grazing Management Toolbox (SDEIS Volume III, Appendix D). Adaptive management tools that are not listed in the Toolbox would require analysis under NEPA.

If adaptive management needs to be initiated as indicated by monitoring, a team will be convened to go over the adaptive options proposed for the allotment as described in the

SDEIS, Volume I, under Adaptive Management, page 16. If this is the further analysis that the commentor is referring to, then no additional NEPA is required as long as the decision maker is staying within the constraints of the original analysis.

C-3.237 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Environmental Consequences, Alternative 4, page 217, it states:

- Alternative 4 is similar to Alternative 3; however, it would rely less on structural improvements and would set Authorized Use at levels below Preference. Under this alternative, adjustments for cow size would also be implemented. Of the 31 allotments that contained leks, 23 (Table 3.35) would see improved nesting and breeding cover, 7 would remain unchanged, and 1 would decrease. *The primary reason the 23 allotments would improve is because o(reductions in Authorized Use. which would potentially provide (or increased High structure.* Also, fewer range improvements are proposed under this alternative than under Alternative 3. This may lead to fewer impacts to existing secondary range, which potentially carries more High structure. *Continued monitoring of herbaceous structure and the grouse survey blocks would determine if the Authorized Use set under this alternative is sufficient or if additional actions. such as additional reductions in Authorized Use. are needed. The seven allotments projected not to change from existing conditions are those that are proposed (or an increase in water distribution. smaller pastures. and/or the change in Authorized Use does not account (or existing levels o(permitted use.*

Comment: The FS emphasizes that Alt. 4 uses fewer structural improvements and would set Authorized Use at levels below Preference. Of the 31 allotments that contain leks:

- 23 allotments would improve nesting and breeding cover,
- 7 allotments would remain unchanged,
- 1 allotment would decrease.

In the Herbaceous Structure section of the SDEIS for Alternative 4, it states:

- Under the initial actions of this alternative, *29 allotments are projected to move towards structure objectives*. Seven of the 29 are currently meeting structure objectives; however, initial actions could further improve structure distribution in 5 of the allotments, and 2 would remain unchanged. No changes to the current structure distribution are projected for 12 allotments. One allotment would shift the structure distribution more towards Moderate and Low structure. One allotment is hayed, and the structure objective is not applied to it.
  Summary:
  - 29 allotments would improve nesting and breeding cover, (7 of the 29 currently meeting objectives)
  - 12 allotments would remain unchanged,
  - 1 allotment would decrease and 1 allotment hayed.

The FS states that, "the allotment that is projected to see a decrease under this alternative would do so because of a projected 24 percent increase in Authorized Use, which would result in less residual cover, which adversely affects the amount of nesting and brooding habitat."

The allotment is #126, which is projected to get an increase of 42%, not 24%. Even though FS analysis shows initial stocking rate is higher than preference, the FS is making its best case to not grant the increase. This is just part of the case.
RESPONSE: The error in the value displayed (SDEIS Volume I Chapter 3, page 217 has been corrected in the Errata. See Response to Comment, D-12.15

C-3.238 – In the SDEIS, Chapter 3, Part 1, Sharp-tailed Grouse, Consistency with Grasslands Plan, pp. 222-224, it states:

- 1. Manage for native forb abundance and diversity to provide foraging habitat for big game, grassland birds, and other grassland wildlife. **Guideline**

  Alternative 1, through the removal of cattle, would initially result in an increase in native forb diversity, ***but over time there would be an overall loss in forb diversity because ungrazed grasses would eventually shade out many forbs, thus reducing their diversity.***

Comment: The FS again confirms that removing livestock reduces vegetation diversity. *Alternative 4, by increasing management intensity (implementing/changing rotations and infrastructure improvements) while adjusting current Authorized Use and accounting for livestock weight, would generally result in an increase in forb diversity.*
Comment: The FS statement that Alternative 4 would "*generally result in an increase in forb diversity." This statement can't be true with what Alternative 1 says above.* With more High structure according it would shave out many shrubs thus reducing their diversity.
RESPONSE: The Forest Service agrees that removing grazing completely would reduce plant diversity over time (for example, see SDEIS Volume I Chapter 3 page 222). Alternative 4, in contrast to Alternative 1, still provides for livestock grazing on all suitable and capable acres. The disturbance process associated with grazing at reduced (but certainly not eliminated) levels is expected to increase some forb diversity (Ibid.).

C-3.238a• Use the following criteria at the project level to help determine where to manage for high structure habitat in as large of blocks as possible in upland areas for waterfowl, prairie grouse, and other ground-nesting birds: **Guideline**

Currently there is a stable to slightly increasing trend in sharp-tailed grouse; therefore, no specific blocks have been identified for increasing High structure habitat. *Alternatives 1, 2, and 4 would maintain or increase the amount of sharp tailed grouse nesting and brooding habitat. Alternatives 3 and 3A have the potential to reduce the amount of habitat because of more intensive management actions. If Alternatives 3 or 3A were selected, and monitoring of initial actions*

showed a decrease in quality sharp-tailed grouse habitat, then this guideline would be implemented to improve grouse habitat. ***Waterfowl were not an issue for this analysis.***

Comment: The FS states no *specific blocks have been identified for increasing High structure habitat.* **The question that has to be asked is then why is the FS calling for more High structure?**

This statement would mean that the Grasslands Plan objective for structure is not correct. According to the Demonstration Project, page 10:

> "If a project is not consistent with the finalized Grasslands Plan guidelines, the deciding official has three options: 1) modify the project to be consistent; 2) develop an administrative record, to Administrative Procedure Act (APA) standards, explaining why deviation from the guideline(s) is a better way of achieving desired conditions and objectives of the plan; or 3) amend the plan (see Forest Service Handbook 1909.12 and 36 CFR 219.7(a)(2)(iii))."

The MGA requests the FS complete either option 1 or 3 for structure objectives from the Demonstration Project.

- 11. Meet rest objectives based on, but not limited to, the following desired conditions: Where High structure is required for plant and animal communities and reproductive success for Management Indicator Species (see Geographic Area direction). Where ungrazed areas are desired for biological diversity. **Guideline**

  There are no specific areas under this project identified as needing rest or requiring ungrazed areas for the reproductive success of MIS species.

Comment: The FS states no specific areas under this project identified as needing rest or requiring ungrazed areas for the reproductive success of MIS species. Again, **the question that has to be asked is then why is the FS calling for more High structure?**
RESPONSE: See the Herbaceous Structure analysis on pages 166 - 177 (SDEIS Volume I, Chapter 3) on the need for more balance in the structure distribution. See also Purpose and Need and Key Issue discussions on pages 23 - 24 (SDEIS Volume I Chapter 1). While no specific blocks have been identified as needing an increase in High structure, there is still a need to meet or move towards the Grasslands Plan objective of a mosaic of structure levels. Therefore, there is no need to modify the project or amend the plan as requested by the commentor.

C-3.239 – In the SDEIS, Chapter 3, Part 1, Economics,_FOREST SERVICE REGIONAL ECONOMIC CONTRIBUTIONS AND IMPACTS, page 226, it states:

- The MGA provided grazing permits for the allotments in the project area for 2005 through 2007. An average from this 3-year period was used to portray

current conditions. This analysis compares the pace of authorized AM reductions for each of the alternatives. The anticipated changes under each alternative were determined by range specialists calculating the number of AMs authorized for each alternative based on information obtained from grazing association issued grazing permits, grazing association Preference numbers, or estimating livestock carrying capacity numbers. Using the expected AMs under each alternative, economic impacts are estimated as direct, indirect, and induced employment (full- and part-time jobs) and labor income generated by (1) the foraging of cattle on NFS lands, and (2) the marketing of all cattle that rely on national grassland forage as part of their growth requirements. The true economic contribution and impacts associated with each of the alternatives likely falls within the ranges of estimates generated using these two techniques.

Comment: The FS makes an assumption that by using the "3-year average" to portray current conditions, will make the reductions look like they are less than they really are. Reductions will be based off preference, not the three-year average. As stated on page 95, SDEIS:

- This information will be used in the analysis to evaluate the effects of past grazing systems and whether or not trends would likely increase, decrease, or stay the same based on the alternatives and the comparison to the 3-year average MGA permitted use from the grazing association grazing permits, as well as Preference. *It is important to note that 1 of the 3 years in the average was a drought year in which mandatory grazing reductions were implemented.* **This information is provided strictly for comparison purposes to more sharply define differences between the alternatives.**

The FS is incorrect in stating one (1) of the 3 years (2005-2007) in the average was a drought year. 2005 was a normal year (103% of normal), but took a mandatory 20% reduction across the board for all members because 2004 was a severe drought year. 2006 was a moderate drought year, and 2007 was a severe drought year. The FS uses a three year average in which one year had a mandatory 20 reduction (2005), one year was a moderate drought, and the last year was classified as a severe drought year.

In March of 2011, Forest Service Tom Tidwell visited the DPG at the request of Senator Hoeven. Chief Tidwell made the following statement while at one of his stops:

- The FS will not use a drought year as the basis for any analysis.

The FS needs to correct their analysis to not include the drought year even though it is for "comparison" purposes only.

By using the "3-year average" in the Economic section, puts the economics at question. The three year average grossly understates the reductions that the FS is going to hand down to

MGA. This is another example of the FS using data to show their reductions are not a big impact to MGA.

See Comment #102.
RESPONSE: See Response to Comment C-3.102.

C-3.240 – In the SDEIS, Chapter 3, Part 1, Economics, Land Base Overview and Settlement History, page 241, it states:

- Livestock production from NFS lands on the Northern Great Plains is very important to the people who hold grazing permits. Overall, though, the national grasslands and forests of the Northern Great Plains play a minor role in the total production of cattle and sheep. Total production from the 37 counties in the area of influence (those counties containing or adjacent to NFS lands in the Northern Great Plains planning area) is approximately 2.2 percent of the national cattle herd size. Of the 37-county cattle production total, less than 4 percent of the 2.2 percent contribution to the national cattle herd is derived from the national grasslands and forests on the Northern Great Plains (Census of Agriculture 1992, Forest Service grazing records).

Comment: The FS tries to use the old story of "Overall, though, the national grasslands and forests of the Northern Great Plains play a minor role in the total production of cattle and sheep." This doesn't lessen the impact to the North Billings MGA members. The FS doesn't give the effort it should in this economic analysis to display the real impacts to the local community and to the members and make a better decision.

In the SDEIS, Summary of the SDEIS, Key Issue #5, Economics, page xi, it states:

- Calculating potential impacts to an individual permittee is very complicated and requires information not readily available.

- The NDSU analysis looks at the effects of two of the four alternatives in terms of changes in gross sales and net revenues from cow-calf operations and debt repayment capabilities.

Comment: Because it is very complicated and requires information not readily available, the FS fails to look at the impacts to the individual member. Social and economic impacts from this size of reduction have a tremendous impact at the local community and individual level. If the FS doesn't calculate potential impacts to an individual member, then the economic analysis is not worth a whole lot. MGA requests the FS stop to calculate potential impacts to individual members.

Only looking at the regional and state economics can easily wash away the impacts that the FS is proposing for a decision the FS made in the past.

See Comment #17.

In the SDEIS, Chapter 1, Key Issues, Key Issue #5, Economics, page 25, it states:

- **Indicator:** The Forest Service indicator is jobs and income generated in the agricultural community. The indicators associated with the NDSU study are cumulative net margins and debt repayment capability.

Comment: The FS is using an indicator that will show virtually no impact to the region or state and be able to justify their conclusion that the proposed actions will have no economic impact. However, if the FS was to look at the economics and social viability of the local community and members themselves they would come up with a much different indicator and outcome. This would tend to not support the answer the FS is after, and that is more reductions.

The FS will justify what they are doing by saying what they said about the Shadehill Recreation Project on the Grand River National Grasslands. There is no economic impact to the economic analysis conducted on the Pasture 1-5 Project said there wasn't. The Shadehill Recreation Project of Grand River National Grasslands showed no economic impact to the reductions given to the grazing district. MGA is sure their economic analysis will show the same thing for the North Billings Project.

MGA wants the economic analysis for the North billings Project to be directed to the economics and social viability of the local community and members themselves.

Also, see Comment #61.
RESPONSE: The Forest Service uses data from IMPLAN software and the NDSU Ranch Viability Analysis along with other statistical data and modeling to support the economic analysis for this project. Economic data are extrapolated for each alternative and summarized in the SDEIS, Volume I, Environmental Consequences – Economics starting on page 243. Neither of the analysis methods is based directly on financial information specific to the MGA permittees that would be directly affected by selection of an alternative. That would require obtaining personal financial data, which was not available. See Response to Comment, C-1.7, C-1.8 and C-3.17

C-3.241 – In the SDEIS, Chapter 3, Part 1, Economics, Cooperative Livestock Grazing Management, page 242, it states:

- Since the national grasslands were established, the Forest Service and the MGA have cooperatively managed livestock grazing on the LMNG in Billings and Golden Valley Counties. This cooperative management is outlined in a Grazing Agreement between the FS and the MGA. The Grazing Agreement acts as the permit for livestock grazing on NFS lands within the county, and spells out the terms and conditions under which the MGA administers permits for individual permittees to graze livestock within an allotment. Grazing allotments can be, and usually are, made up of a combination of NFS, private, and state lands.

Comment: The FS discusses the cooperatively managed livestock grazing on the LMNG in Billings and Golden Valley Counties. They also discuss the ranching lifestyles and how in Billings County farming and ranching are important components of the economic base of the county. However, this is where the FS stops its discussion and consideration of the cooperative management and the dependence of Billings county on farming and ranching. This is where the FS stops to consider the members and the effects of what they are proposing their livelihoods.

Just like the FS failed to consider the local community in the economic analysis on the Grand River Pasture 1-5 project, they are using the same format as they did for the Grand River project and doing thing to the North Billings Project. The FS is assuming the position that economically, this project will not affect the state or national economics.
FS states that, "Calculating potential impacts to an individual permittee is very complicated and requires information not readily available." Just because it is very complicated and requires information not readily available, the FS fails to look at the impacts to the individual member. Social and economic impacts from this size of reduction have a tremendous impact at the local community and individual level. If the FS doesn't calculate potential impacts to an individual member, then the economic analysis is not worth a whole lot. MGA requests the FS stop to calculate potential impacts to individual members.
RESPONSE: The Existing Condition section in the SDEIS, Volume I, starting on page 233 for Economics states, "Medora, ND, with approximately 100 residents, is the closest town to the project area. Nearby, Dickinson, ND, is the closest full-service city, with roughly 16,000 residents. To provide context and comparisons, some of the demographic and background economic information is summarized for Billings County, some for the 12-county economic impact area and some for North Dakota." The local community is further considered throughout the economic analysis, particularly under Ranching Lifestyles in the SDEIS, Volume I, starting on page 242, and again in the Summary of Economic and Social Conditions starting on page 254.

See Response to Comments C-1.7, C-1.8 and C-3.17.

C-3.242 – In the SDEIS, Chapter 3, Part 1, Economics, Environmental Consequences, page 243, it states:

- The growth of oil and gas production and its likely continued growth, means that outdoor work is available in this area; this could potentially moderate or negate any negative social impacts that could result from loss of a few cattle operations.

Comment: The FS makes a quantum leap in the statement above because of the growth of oil and gas production that anyone who loses their job or ranch from their upcoming decision is somehow justified because of oil jobs. This has no place in this economic analysis.

The same analogy can be used when the FS in the next few years will have to lay off or force out many of the current FS employees in their next reductions. But it is OK, because they can go to work in the oil patch

RESPONSE: The above statement located on page 244 of the SDEIS, Volume 1 was used to quantify direct and indirect effects of Alternative 1. Alternative 1 would prohibit livestock grazing entirely; it is the no-action alternative that serves as a benchmark from which the agency can evaluate the proposed action (CEQ regulations at 40 CFR 1502.14(d)). The statement is further clarified by the following: "As with any modeling, the combination of assumptions used and the fact that the economy is dynamic (the current boom in oil and gas) mean that both the ranch viability analysis and the regional economic impact analysis are best used as relative projections between alternatives. What is clear, however, is that those that could be affected by the selection of any alternative, local ranchers and communities, hold cattle ranching culture in high esteem and do not wish to lose this cultural identity and preferred lifestyle" (SDEIS, Volume I, page 255).

D – Medora Grazing Association Members

D-1 Jerry Anheluk – Allotment 132A

D-1.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comment C-1.3.

D-1.2 – The preference number for Allotment# 132A is 176 AMs.
RESPONSE: The Forest Service reviewed the Medora Grazing Association grazing permits and the preference for this allotment is listed as 176 AMs (Project Record Volume 7 Supporting Documentation Subsection Range, page L-12).

D-1.3 – Allotment 132A is meeting structure objectives.
RESPONSE: The Forest Service agrees as indicated by the need for action displayed for herbaceous structure in Table 132A.2 (SDEIS Volume II Chapter 3, page 118).

D-1.4 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: The Forest Service reviewed the 2008 and 2009 data collected by NDSU and there were no NDSU plots sampled within this allotment.

There was adequate data and recorded field observations to characterize existing conditions that are described in the effects analysis more fully than the commentor implies

(See SDEIS Volume II Chapter 3, pages 120 - 121 and Project Record Volume 12 Section K Specialist Reports and Notes, K-6). See Response to Comments C-3.194 and C-3.199.

D-1.5 – Summary of seral stage analysis for Allotment #132A:

In Allotment #132A, the FS used the following transects and plots: 2 ecoplots. The ecoplots were read in 1999.

By removing the 2 ecoplots from the seral stage analysis, leaves the FS without any data to assess seral stage.
RESPONSE: A sere plot in broken land in the west half of the allotment was measured in 2005, but because it was at an Invaded Grass State it was not assigned a seral stage. Collective plant composition data in the east half of the allotment indicated similar Invaded Grass States of unbroken land (See SDEIS Volume II Chapter 3, pages 120 - 121 and Project Record Volume 12 Section K Specialist Reports and Notes, K-6). See also Response to Comments C-3.199 and D-1.4.

D-1.6 - Using what is stated above, a determination of whether Allotment #132A is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: In addition to the ecoplots, one Forest Service sere plot was measured during 2005 in the west half of the 310-acre allotment. The collective field data strongly supports the conclusion that the allotment does not meet plant composition objectives due to the abundance of invasive grasses that represent the extreme range of an undesired condition. See Response to Comments C-3.199, D-1.4 and D-1.5.

D-1.7 - In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
For Allotment #132A this amounted to no reduction below preference. The FS states on page 124, SDEIS, Chapter 3, part 2:

•Initial Actions - Continuing to provide opportunity for growth and re-growth of native grasses and crested wheatgrass would not be changed from current management. In Chapter 3, Part 1, pp. 103-104, the FS states: "Two allotments, 132A and 248, are authorized Preference since they are meeting resource objectives."

Allotment #132A does not have any riparian and woody draw resources. The FS states Allotment #132A is meeting objectives. Stocking will remain at 202 AUMs, adjusted for cow Size.
RESPONSE: In alternative 4 the Forest Service is authorizing use as AUM's. An AUM is defined in the SDEIS and MGA grazing agreement (2009) as "The amount of feed or forage required by an animal-unit for one month".

The SDEIS (Volume I Part 1, pages 103 - 104) states "Two allotments, 132A and 248, are authorized Preference since they are meeting resource objectives". The SDEIS Volume II

Chapter 3 pages 123-124 indicates objectives for seral stage/plant composition are not met and this is largely due to trends of increasing invasive grasses and Invaded Grass States. However, neither increasing or decreasing Authorized Use without changing the season of use will alter this undesired trend. See Response to Comment C-3.92, C-3.93a and C-3.94. In Table 3.7 (Volume I Part 1, pages 104 - 105) the Forest Service clearly displays that the Authorized Use will be 176 AMs, not 202 AUMs, for Allotment 132A. There will be no adjustments for cow size initially under Alternative 4 for Allotment 132A.

D-2 Jerry Anheluk – Allotment 278

D-2.1 – The 2004 V.O.R. transects are a very poor gauge of range condition due to severe drought (2004). The inferences drawn from their data are biased toward lower readings than would be common to this area over long term monitoring data. Higher structure is especially dominant in the East and Southeast comer of the Allotment. In Pasture 278-01 and Pasture 278-02 this oversight alone should compensate for higher carrying capacity and allow for nesting habitat.
RESPONSE: The Forest Service does not use Visual Obstruction Readings (VOR) to determine carrying capacity. Visual Obstruction Readings are used to evaluate habitat conditions for wildlife, particularly ground nesting birds.

The SDEIS acknowledges that structure will be biased towards lower readings in drought years (SDEIS Volume I Chapter 3, page 172). But for there to be less than one percent of the herbaceous dominated VOR transects measuring as high structure in 2004 (a drought year) across the project area, indicates that management is not addressing the Grasslands Plan guideline to "reduce adverse impacts of drought to food and cover for prairie grouse and other wildlife (Grassland Plan page 1-13)." The practice of adjusting stocking levels in the year after a drought rather than the year of drought are likely to decrease the potential for avoiding adverse effects of drought.

The sampling protocol did not result in a transect in either location referenced by the Commentor.

D-2.2 – The windmill in Pasture 278-02 is nonfunctioning and in 2010 was blown over by severe wind. The well is very good and is pumped by a gas generator. The problem here is that at times the pumping does not concur with use and results in calves not being able to get good drinks of water or no water at all. This situation could be improved by establishing float control to tank preferable by solar power unit.

This improvement may ease the trampling of Whitetail and completely breaching the reservoir would eliminate cattle standing in dirty water for cooling. Pastures 1 and 2 are operating concurrently due to the difficulty on fence line at water site in keeping cows and calves in the same pasture. The condition on Whitetail Creek is exaggerated and could be improved with proper float/pump/tank management set to maintain water at accessible levels at all times. Cost share for these improvements has been requested.

RESPONSE: Maintenance of developments within an allotment is the responsibility of the permittee as stated in the Medora Grazing Association grazing agreement (2009 , N-Repair and Replacement of Improvements, on page 40).

The Forest Service also displays in Table278.2 (SDEIS Volume II Chapter 3, page 460) that Whitetail Creek is currently at PFC and the need for Action is to maintain PFC. Within the same table the Forest Service display's that the Woody draws sampled within this allotment were rated as unhealthy and At Risk with a need to increase seedling/sapling understory, and enhance shrubs. The Forest Service agrees that Woody draw conditions could improve along the Whitetail Creek and adjacent draw with maintenance of the existing water development.

D-2.3 – The woody draws west of the county road from the windmill, are in similar condition to those in Pastures 278 –0l and 02 even though no watering occurs west of the road. These are both Forest Service allotments. The FS needs to look beyond livestock use when considering condition of the woody draws.
RESPONSE: The woody draw west of 278-01 and 278-02 are in Allotment 286 and watering does occur adjacent to the draw. There are ephemeral pools in some sections of the draw that may attract livestock early in the season. Poor condition of the draw was attributed to livestock disturbances that are relatively high due to the scarcity of draws in the pastures. There is virtually no tree regeneration and no desired shrub layer in the draw. Cumulative effects on woody draw condition were evaluated. See also Response to Comment C-1.135.

D-2.4 – In my opinion the wood draws in this allotment are quite good and the draw at the water well is certainly impacted and is unfortunately on the public/county road. I think that the early intensive use of pastures 1 and 2 has checked the invasive Kentucky Bluegrass.
RESPONSE: See Response to Comment D-2.2. The existing data and pasture observation collected within 278-01 and 278-02 don't support intensive use having checked invasive Kentucky bluegrass at this time (See Project Record Volume 12 Section K Specialist Reports and Notes, K-6).

D-2.5 – However, occasionally the alternating use with a later season may have beneficial impacts on herbaceous structures.
RESPONSE: Removal of herbage in the later season would remove the potential cover, the potential for regrowth, and would promote homogenous herbaceous structure within Allotment 278.

D-2.6 – Pasture 278-03 in section 28 has the potential to use S.W.A. stock tank located in Northeast Southeast 28. The situation could easily be implemented by water lot on the adjacent private permittee pasture.
RESPONSE: Comment noted. In review of the MGA permittee meeting minutes the Forest Service did not find any proposal for a stock tank in pasture 278-03, in the NE ¼ SE ¼ of Section 28.

D-2.7 – In view of the excellent production potential of Allotment #278, I feel the cut at 26% is excessive especially with the use of"2004" V.O.R. data. In my opinion varying rotation can correct the documented deficiencies.
RESPONSE: The Authorized Use adjustment of 26 percent is comparing the current authorized use to the initial estimated carrying capacity. The Forest Service in Table 278.2 (SDEIS Volume II Chapter 3, page 460) displays the existing condition within Allotment 278. The Forest Service reviewed the existing condition and the desired condition within the Grassland Plan. There was and is a need for action in woody draws, herbaceous structure, and sere because they were not meeting the desired conditions. The proposed Authorized Use in Alternative 4 is just one of several proposed changes in management to move the existing condition towards or meet Grassland Plan Goals and Objectives. Regularly varying rotations in the pasture would not be consistent with the dominance of crested wheatgrass and invasive grasses that comprise the current plant composition.

D-2.8 – Using the V.O.R. readings to register pasture vitality with grouse numbers is quite unrealistic and unscientific. This model will never justify proper utilization systems in dry/wet cycles of the Dakota grasslands. My concern is that it is natural not to have high structure in dry cycles. Alternatively, "under use" during wet cycles would increase fire risks and invasive grass species. The past "fall reviews" offered by association/F.S. are perhaps the best way to monitor trends in use and adapt for the boom/bust cycles that occur in grassland production.
RESPONSE: Fall pasture tours that involve general observations and impressions of conditions to monitor trends in use would not provide sufficient data for monitoring resource objectives and establishing appropriate use for the current season. End of season fall pasture observations would be less accurate than collecting plant composition data to determine trends of plant composition.

The Visual Obstruction Reading (VOR) is not used to measure "pasture vitality." The VOR is a tool used to measure "the height that herbaceous vegetation obscures 100% of a round pole placed vertically in grassland vegetation (Appendix G, Grasslands Plan)." The NGP (page 3-190) states that the structure of the grassland vegetation contributes to the diversity of plants and animals (NFMA, 36 CFR 219.19-20) and is primarily used on the Dakota Prairie Grasslands for assessment of sharp-tailed grouse habitat.

Relating a key habitat variable, such as structure, to wildlife populations is common practice (e.g. Prose 1987 and other HSI models). Though wildlife habitat is composed of several habitat components, nesting cover is often considered the most limiting factor (Vodehnhal et al 2007). Nesting cover is reliant on residual herbaceous vegetation from the previous year's growth (ibid.). See also Wildlife specialist report for more details.

The Forest Service agrees that high structure can be limited in dry years (SDEIS Volume I Chapter 3 page 172). But it may be instructive that within the project area, a small (n=30; 42; 39; 35) subsample of the larger NGP data collection effort (approximately n=350+ transects; 1996-1999), indicated that in 1999 high structure objectives may have been attained within the project area. However, low structure was still greater than objectives. The Billings County only subset (n=113; 134; 118; 123; 35; 35) of the NGP data indicates

that herbaceous structural Grasslands Plan objectives were not met in any year (1996-2001) with high structure varying from three to eight percent and low structure varying from 11-49 percent. Weather patterns during the growing season (NDAWN: April/May-September, project file) varied from above normal (2001), to normal or near normal (1996-1999), to drought (2000). More recently, 2004 was a drought year (with caveats) with an intensive project-level sampling that found a highly skewed structure distribution towards low and moderate classes and 2005 (an above normal precipitation year) which found herbaceous structure levels similar to data from the 1990s with six percent high structure and low structure at 29 percent. For more details, See SDEIS Volume I Chapter 3, pages 169 - 173 and Project Record Wildlife report Appendix A.

See Response to Comments C-1.3 and C-3.2.

D-2.9 – Creating a preconceived utopia about Dakota grasslands is a dangerous flirt with reality and does not offer enough flexibility with cycles. The overall status of the grasslands as being in good condition is verified by the high value of area ranch lands offered at sale. Our conditions here are the envy of most grassland ranchers in the state and nation.
RESPONSE: The Grasslands Plan Goals and Objective direct the Forest Service to manage the grasslands in a way that improves the condition of the various resources while maintaining livestock grazing. Indeed, many of the objectives of the Grasslands Plan could not be achieved without grazing.

D-2.10 – It is unthinkable to remove the grazing element from the vital sustainability of eco grassland system. Yet, this is precisely the trend that is occurring. This grazing pressure is how the grassland system evolved. This evolution creates many unpleasant conditions in drought and various conditions. Yet we attempt to ignore this part of nature's scheme. It is important to look at the difference of the North American grassland to the South American grassland where there was never any grazing evolution and no cloven hooved grazers in that continent to evolve a natural grassland condition. Note that in South America all pastures must be planted to African grass species to allow for grassland sustainability to introduce grassland agriculture livestock use.
RESPONSE: There is no evidence of trends to remove livestock grazing. The preferred alternative does not remove grazing, and analysis of the No Grazing Alternative identified several adverse effects to resource conditions.

D-2.11 – Journals of early pioneers indicate the variability of the weather cycles on the Great Plains. One instance will record the Plains as desert incapable of supporting agricultural life and yet on another account in a different time period on the same land will record grass as high as the saddle stirrups.
RESPONSE: The Forest Service acknowledges the variable weather patterns of the Great Plains within the SDEIS Volume I Chapter 3 pages 88, 145, 146 and 149. See also Response to Comment C-1.3.

D-2.12 –The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a

severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the NBEIS project area (See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.2, C-1.3, C-3.102.

D-2.13 – Preference = 280 AMs:
- Exhibit E, 2009 Grazing Agreement= 272 AUMs
- NBSDEIS = 272 AMs*

Currently, this allotment is issued a private allocation tum-in permit for 272 AMs by the MGA.

The preference number for Allotment #278 is 280 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 272 Federal AMs. Allotment 278 also has private land in it (SDEIS Volume II Chapter 3, page 460, Table 278.1), which the SDEIS displays only the preference for National Forest System lands.

D-2.14 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #278 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.
2. WoodvDraws

#278- P. 462	Healthy	At Risk	Unhealthy	Total
		1	1	**2**

A determination of whether Allotment #278 is meeting the Plan objective cannot be made - meeting plan objectives = "cannot be determined" as outlined below:

Grassland Plan resource objectives for Woody Draws in the North Billings Project Area is, "to at least 80 percent of riparian areas and woody draws toward self perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability."
RESPONSE: Woody draw objectives are not met in the allotment and the proposed alternatives were analyzed with respect to their potential for improving woody draw conditions.

D-2.15 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.

RESPONSE: See Response to Comments C-3.135 and D-2.14.

D-2.16 – #278- P. 463 Allotment #278 has 472 FS ac. and a total of 473 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined
RESPONSE: VOR data was indeed collected in 2004 in this allotment. The two transects measured herbaceous structure at moderate. VOR data is collected only from biologically capable habitat types – not the whole allotment. In 2006, an IDT follow-up field review was conducted to find high structure within the allotment. However, it was determined that there was not 20 percent high structure across the allotment. See Wildlife specialist report Appendix B for details concerning VOR data collection and the respective allotment.

D-2.17 – The only transects were in 2004. therefore structure objectives cannot be determined The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #278 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".

In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See SDEIS Volume II Chapter 3, page 460 for 2004 VOR results. See Response to Comments C-1.3, C-3.102, C-3.173, D-2.1, D-2.8, and D-2.16.

D-2.18 – 2005 was the year after the drought; it should not be used as a standalone year to determine structure. It also had a wet snow storm (2-3") on Oct. 3-4 and once it snows VOR transect readings are done.
RESPONSE: See Wildlife report pages 52 - 53 for details surrounding the 2005 VOR data collection. In contrast to 2004 when there was no snow and less than one percent herbaceous high structure across the project area, in 2005, with the snow event accounted for with data collection put off for a month for snow to clear, seven percent of the VOR transects were in high structure. In addition, low structure went from 53 percent in 2004 and decreased to 29 percent in 2005 despite the snow that had fallen a month previous to survey. See also SDEIS Volume I Chapter 3, pages 172 - 173.

D-2.19 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See SDEIS Volume II Chapter 3, page 460 for 2004 VOR results. See Response to Comments C-1.3, C-3.102, C-3.173, D-2.1, D-2.8, and D-2.16.
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D-2.20 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded.

The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.

Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.

By removing the NDSU sample plot in crested, the robel transects and belt transects and the sere plot in crested; there are no remaining plots to make an assessment of seral stage for the entire allotment.

The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities. Using what is stated above, a determination of whether Allotment #278 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined" since the entire allotment is broken land (crested wheatgrass).

In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".

Allotment #278 has riparian resources that meet objectives. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for woody draws, herbaceous structure and seral stages on the allotment, therefore stocking levels should stay at preference or 280 AMs until a trend can be established for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.15, C-3.135, C-3.194, C-3.199, and D-1.7.

D-3 Jerry Anheluk – Allotment 281

D-3.1 – V.O.R. transects taken in 2004 are very biased data due to severe drought (2004). The long term monitoring of V.O.R. readings for high structure should be adequate to excessive for Pasture 01, and just adequate for the other Pastures. The biggest problem to any management scheme on Pasture 01 is the lack of reliable water. Also concurrent areas of crested wheatgrass (Norden) with native areas are difficult to harvest properly and efficiently.
RESPONSE: The Forest Service visited this allotment on November 8, 2006 because of the challenged made on the 2004 VOR data (See Project Record Section L Subsection Herbaceous Structure/Wildlife, file VOR_challange126_128_281.pdf).
See Response to Comments C-1.3 and D-2.1.

D-3.2 – The one beaver dam is actually of human origin as there is no other water containment available. The loss of the beaver dam earlier in the decade was a considerable blow to reliable water as it served as a reservoir for a small stream that fed this containment area in summer months. This poor water situation impacts trampling of drainage areas and woody lowlands.

RESPONSE: The impoundment at the far west end of the pasture may have been human constructed but is generally non-functional at present. A series of upstream beaver ponds were observed to be supplying livestock water at the time of woody draw surveys as shown in photographs and discussions in the allotment-level effects analysis of the SDEIS (Volume II Chapter 3 pages 473 - 474). Lack of water outside the woody draw communities in pasture 1 was acknowledged as a factor contributing to poor conditions and the need for a new water source as proposed.

D-3.3 – I cannot stress that water, water, water is the single most limited resource contributing too many pasture inadequacies. An ideal situation would be to have a stock tank centrally located on the crested wheatgrass areas south of the complex draw. This would greatly reduce trampling and many woody draw problems related to cattle but not those warranted by Dutch elm and beaver. I believe that this would drastically improve woody draw ratings of 40°/o Healthy, 50% At Risk, and 15°/o Unhealthy. The Canada thistle on section 14 on Whitetail Creek is severely out of control. The only bright spot is that larvae laying insects are noted and do curtail thistle production but will not eradicate it. There is no leafy spurge on this allotment that I am aware of.

I cannot emphasize the bias of 2004 V.O.R. data vs. the long term trend. I feel that this allotment has too much potential to warrant a 20% reduction of carrying capacity. 5 as a T a 1 1t.. A The plant composition with crested wheatgrass/Kentucky Bluegrass must be harvested by trying different periods of use to facilitate grassland agriculture and habitat. Reduction in numbers will not address the issues positively.
RESPONSE: The 20 percent adjustment is based on carrying capacity and cow weight. Resource conditions as compared to Grasslands Plan objectives, not just herbaceous structure, indicate if an adjustment may be needed. It is agreed that adjustments in stocking level alone will not positively affect plant composition. As concluded in the SDEIS Volume II Chapter3 page 482 and more generally discussed in the Botany specialist report (Part A pages 65 - 67 and 122 - 123) grazing seasons need to be coordinated with early season palatability of crested wheatgrass and Kentucky bluegrass. Trying different periods of use as suggested would include seasons of low invasive grass palatability, which result in excessive stress on the native component and have likely contributed to the invasive species problem. This is particularly true since all four pastures of the allotments are affected by invasive grasses. See also Response to Comment D-3.2.

D-3.4 – Using the V.O.R. readings to register pasture vitality with grouse numbers is quite unrealistic and unscientific. This model will never justify proper utilization systems in dry/wet cycles of the Dakota grasslands. My concern is that it is natural not to have high structure in dry cycles. Alternatively, "under use" during wet cycles would increase fire risks and invasive grass species. The past "fall reviews" offered by association/F.S. are perhaps the best way to monitor trends in use and adapt for the boom/bust cycles that occur in grassland production.
RESPONSE: As indicated in comment D-2.1 it is difficult to efficiently harvest the existing forage resources. Therefore, either stocking levels need to be adjusted or strategies need to be implemented for effective use of existing forage components.

See Response to Comments D-2.1 and D-2.8.

D-3.5 – Creating a preconceived utopia about Dakota grasslands is a dangerous flirt with reality and does not offer enough flexibility with cycles. The overall status of the grasslands as being in good condition is verified by the high value of area ranch lands offered at sale. Our conditions here are the envy of most grassland ranchers in the state and nation.
RESPONSE: See Response to Comment D-2.9.

D-3.6 – It is unthinkable to remove the grazing element from the vital sustainability of eco grassland system. Yet, this is precisely the trend that is occurring. This grazing pressure is how the grassland system evolved. This evolution creates many unpleasant conditions in drought and various conditions. Yet we attempt to ignore this part of nature's scheme. It is important to look at the difference of the North American grassland to the South American grassland where there was never any grazing evolution and no cloven hooved grazers in that continent to evolve a natural grassland condition. Note that in South America all pastures must be planted to African grass species to allow for grassland sustainability to introduce grassland agriculture livestock use.

Journals of early pioneers indicate the variability of the weather cycles on the Great Plains. One instance will record the Plains as desert incapable of supporting agricultural life and yet on another account in a different time period on the same land will record grass as high as the saddle stirrups.
RESPONSE: See Response to Comments D-2.10 and D-2.11

D-3.7 – Special Note: The years of*2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.102, and D-2.12.

D-3.8 – Currently, this allotment is issued an inventory permit for 351 AMs by the MGA. It should be noted that although this allotment is permitted with an inventory permit, which typically means that livestock are somewhere on the allotment for a full 12 months, it is actually managed like a tum-in permit.
RESPONSE: Forest Service has reviewed the MGA grazing permit and the preference for NFS lands is listed as 295 AMs.

D-3.9 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #281 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.
RESPONSE: See Response to Comment D-2.14.

D-3.10 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be

used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-3.11 – #281- P. 475 Allotment #281 has 555 FS ac. and a total of 681 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.

The onlv transects were in 2004. therefore structure objectives cannot be determined.
RESPONSE: See the Wildlife specialist report Appendix B for details concerning VOR data collection and the respective allotment.

D-3.12 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comments C-1.3 and D-2.18.

D-3.13 – The degree of variability with the VOR method is approximately 10-20% (average= 15%).
RESPONSE: See Response to Comments D-2.1 and D-2.8

D-3.14 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
In Allotment #281, the FS used the following transects and plots: 2 Robel transect, 1 sere plots, 1 NDSU sample plot and 1 ecoplot. A breakdown of the transects and plots shows the following:

- Two Robel transects - recorded crested wheatgrass dominance - P.06
- Repeated pace transect- in broken land (crested wheatgrass)- P.06
- 1 sere plots- in broken land (crested wheatgrass)- P.02
- 1 Belt Transect- western wheatgrass as the dominant species- P.01

RESPONSE: The Forest Service has reviewed the project record and the existing condition within the SDEIS for this allotment. As result the Forest Service did not find any documentation of NDSU plots being taken in Allotment 281 for years 2008 or 2009. The Forest Service had not received 2010 data from NDSU until after the SDEIS was published and comments had already been received from the public.

See Response to Comments C-3.194 and C-3.199.

D-3.15 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage

can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.185, C-3.194, and C-3.199.

D-3.16 – By removing the Robel transects, the belt transect, repeated pace transect, and the sere plot in creasted wheatgrass; there are no remaining plots to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.185, C-3.194, and C-3.199.

D-3.17 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.185, and C-3.194 .

D-3.18 – Using what is stated above, a determination of whether Allotment #281 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined" since most of the allotment is broken land (crested wheatgrass).
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-3.19 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-3.20 – Allotment #281 has no. riparian resources. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment (reduction) in stocking levels is needed. The FS has not established a trend for woody draws, herbaceous structure and seral stages on the allotment, therefore stocking levels should stay at preference or 296 AMs until a trend can be established for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: The Forest Service has reviewed the MGA grazing permit Headquarter Land record and the NFS land is listed for 295 AMs. See Response to Comments C-3.15 and C-3.135.

D-4 Jerry Anheluk and Ike Hecker – Allotment 300 (The Forest Service combined the responses because the two comments were identical.)

D-4.1 – Table 3.6 lists an incorrect preference and thus Tables 3.5 and 3.4 have been calculated incorrectly as well. So the proposed decrease in authorized use would be markedly more than indicated in the tables. Also the 3-year average in Table 3.4 was taken from drought years when there were mandatory cuts in use. The math is very misleading (deceiving) and the language should be more consistent regarding the terms "preference", "permitted", and "authorized". I am opposed to any "adaptive" management plan. Decisions regarding any proposed cuts in grazing should be based on sound science after long term monitoring and not emotion, politics, or the preconceived agenda this plan was written for.

RESPONSE: The Forest Service has reviewed Tables 3.4, 3.5 and 3.6 within the SDEIS. The Forest Service on pages 94 and 95 of Chapter 3, Volume I explains the purpose of Tables 3.4 and 3.5, and why they are different than Table 3.6 illustrating the Authorized Use under alternative 2, which is AMs. The SDEIS also identifies that 1 of the 3 years in the average was a drought year in which mandatory grazing reductions were implemented and that this information is provided strictly for comparison purpose to more sharply define difference between the alternatives (SDEIS Volume I Chapter 3, page 95). The paragraph below the table also explains the math and rational for converting AMs into AUMs. The glossary provided in the SDEIS and DEIS explains the difference between the language for "preference", "permitted", and "authorized" because they are different. Preference in the SDEIS and DEIS was defined "Refers to the historical, maximum number of head of livestock for a given number of months on an allotment". Permitted or Permitted Use is defined as "This is the historical total amount of animals and months, expressed in Animal Months (AMs), that the permittee can utilize through grazing of livestock on an allotment". Authorized or Authorized Use is defined "This is the amount of animals and months, expressed in Animal Months (AMs) or Animal Unit Months (AUMs), that the permittee is authorized to utilize through grazing of livestock for a specific grazing season on an allotment".

D-4.2 – The spring in the southeast quarter of section 28 is a properly functioning spring with a good collection station. Drilling a well and adding pipeline is not a cost effective approach to this perceived problem. Discounting the initial installation costs, the ongoing utility cost would be detrimental. There would be no backup source for water in the event of lengthy power outages. The water lot on the northeast comer has not been used for two years so damage from cattle should be minimal. The grass is in good shape in this allotment and we've made progress in controlling wormwood.
RESPONSE: The commentor is incorrect. The referenced developed spring is not properly functioning because the existing development has not been maintained to Forest Service specifications. The Grasslands Plan has direction to maintain or improve long-term proper functioning of riparian ecosystem conditions (page 1-9 and 1-11, Standards and Guidelines B. 2. and B. 13.) Additionally, the stream reach within the waterlot was rated at FAR-D (SDEIS Volume II Chapter 3 pages 576 through 577), therefore, there is a need to take action to improve the riparian ecosystems in this allotment.

D-4.3 – In recent years this allotment has not utilized the water lot because of inability to control livestock at fences due to shifts in water levels and poor water quality. The trampling and heavy use should not be a surprise when recognizing what a water lot actually is. Manure and sediment problems are exaggerated by initial lot size and a lack of development to counter these problems with heavy use.
RESPONSE: This contradicts the statement of D-4.2 about resource damage being minimal. See Response to Comment D-4.2.

D-4.4 – An ideal situation would be to utilize a stock tank on top of the ridge in the crested wheatgrass area north of the spring. Perhaps this water could be piped in from Magpie well North of Allotment #300. In the event that this does not happen, the spring is the only reliable

source and is unreliable under extreme hot conditions. When the spring is reliable the Northeast water lot is and can be shut off to allow the healing of the internal area. Location of a separate stock tank mentioned above would reduce cattle use in woody draws as the cattle would be on the ridgeline to use winds for cooling and would not impact the draw with the water situation as it is now.
RESPONSE: This contradicts statements in Comment D-4.2. The Forest Service is in agreement with the tank location proposed above.

D-4.5 – In any situation the spring should never be reclaimed or eliminated from livestock use but fenced off for emergency water that would always be available for livestock.
RESPONSE: The Forest Service agrees that the method of "spring reclamation" should involve improving and maintaining existing fences around the spring and reserving the water source for emergency use.

D-4.6 – Woody Draws: The drought cycle was a major player in the damage to woody draws along with Dutch elm disease. These draws have not been sprayed extensively to control wormwood and thus new growth has been diminished. These factors are a much larger player than the cattle "trampling".
RESPONSE: See Response to Comments C-1.2, C-3.102, C-132, C-3.133, C-1.135, and C-140.

D-4.7 – Herbaceous Structure: The transect results listed were taken during drought years 2004 and 2005 and so they are unfair and probably invalid (2010 and 2011should be figured in if drought years carry so much weight). The VOR readings were biased because there was not a good sampling of areas on these allotments. There should be one reading for each 320 acres and not the select few that were done. Any permanent changes in grazing based on VOR readings should be done with a long term (10-20 years) average and not a 3 year average during a drought cycle. It is suggested that the west fence on the ally way be removed but this is a necessary route for the neighbor to move cows between his headquarters to common without disturbing Allotment #300.

Fencing this allotment into two pastures would do little to regenerate the woody draws and would just be more fences to maintain. There is abundant growth in the woody draws for wildlife. There are deer, antelope, elk, and grouse in the pasture. The cross fencing option is not readily accepted as a fence incurs cost/upkeep, and other associated problems.
RESPONSE: The Forest Service VOR sampling intensity is based on biologically capable acres. It was determined that there were approximately 786 acres of biologically capable habitat types within the allotment. There were three VOR transects measured in the allotment. Therefore, the sampling intensity was 1 transect per 262 acres. See SDEIS Volume I Chapter 3 page 167 and Project Record Section K Wildlife Report Appendix B

Though not specific to any allotment, long-term monitoring data can be found within the SDEIS Volume I Chapter 3, pages 169 - 171. This data provides a landscape context for grazing on the LMNG, and as primarily displayed in this case, Billings County. A subsample of this database specific to the project area also helps demonstrates a long-term

characterization. Basically it shows that herbaceous structure objectives have not been met since measurements were first taken in 1996 with the potential exception of 1999 in the project area (ibid.).

Changes to grazing management are not solely based on VOR levels. Rather, any potential changes are, and will be, the result of data collection, interdisciplinary discussions, and management objectives (See SDEIS Volume I Chapter 2, page 56, Trigger Points). Data from several potential resources, including woody draws, riparian areas, invasive species, etc, may be drawn in together to develop and ascertain management needs.
See Response to Comments C-3.2 and D-2.1.

The Forest Service agrees that there would be tradeoffs involved in splitting the pasture, and concluded that there would be minimal benefit to woody draw conditions SDEIS Volume II Chapter 3 page 582.

D-4.8 – Concentrating on the installation of the water tanks would be the single most positive decision in regard to cattle/woody draws. The biggest culprit in the woody draw is Dutch Elm which decreased the natural progression of the elm.
RESPONSE: Green ash should be easily capable of replacing the niche of American elm. Dead or dying elm have no bearing on the lack of desired shrub and green ash regeneration. See Response to Comment C-3.132, C-3.135

D-4.9 – Using the V.O.R. readings to register pasture vitality with grouse numbers is quite unrealistic and unscientific. This model will never justify proper utilization systems in dry/wet cycles of the Dakota grasslands. My concern is that it is natural not to have high structure in dry cycles. Alternatively, "under use" during wet cycles would increase fire risks and invasive grass species. The past "fall reviews" offered by association/F.S. are perhaps the best way to monitor trends in use and adapt for the boom/bust cycles that occur in grassland production.
RESPONSE: See Response to Comment D-2.8.

D-4.10 – Creating a preconceived utopia about Dakota grasslands is a dangerous flirt with reality and does not offer enough flexibility with cycles. The overall status of the grasslands as being in good condition is verified by the high value of area ranch lands offered at sale. Our conditions here are the envy of most grassland ranchers in the state and nation.
RESPONSE: See Response to Comment D-2.9.

D-4.11 – It is unthinkable to remove the grazing element from the vital sustainability of eco grassland system. Yet, this is precisely the trend that is occurring. This grazing pressure is how the grassland system evolved. This evolution creates many unpleasant conditions in drought and various conditions. Yet we attempt to ignore this part of nature's scheme. It is important to look at the difference of the North American grassland to the South American grassland where there was never any grazing evolution and no cloven hooved grazers in that continent to evolve a natural grassland condition. Note that in South America all pastures must be planted to African grass species to allow for grassland sustainability to introduce grassland agriculture livestock use.

RESPONSE: See Response to Comment D-2.10.

D-4.12 – Journals of early pioneers indicate the variability of the weather cycles on the Great Plains. One instance will record the Plains as desert incapable of supporting agricultural life and yet on another account in a different time period on the same land will record grass as high as the saddle stirrups.
RESPONSE: See Response to Comment D-2.11.

D-4.13 – Special Note: The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the NBEIS project area (See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.2, C-1.3, C-3.102 and D-2.1.

D-4.14 – • Preference = 488 AMs:
- Jerry Anheluk- 22 hd@ 8 mo = 176 AMs
- Jerry Anheluk - 40 hd @ 5 mo = 200 AMs
- Ike Hecker- 22 hd @ 5 mo. = 112 AMs

Total = 488 AMs
- Exhibit E, 2009 Grazing Agreement = 683 AUMs
- NBSDEIS = 486 AMs

Currently, the common is permitted through each permittee's associated headquarters permit by the MGA.

The preference number for Allotment #300 is 488 AUMs.
RESPONSE: The MGA provided the Forest Service with a definition of preference number (project record for data). MGA definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 486 AMS. The calculations provide by the commentor also show 112 AMs for Ike Hecker which is incorrect since 22 head X 5 months equals 110 AMs. Corrections made in the calculations provided by the commentor would equal 486 AMs.

Exhibit E, 2009 Grazing Agreement states "Information taken from latest permits within 2230 files before the land record was redacted. As of 3/7/2007. Some records have been updated based on MGA board action since 2007. Not all land records have been updated when several commons were broken into private allocations in the '80s". Based on these comments the permits provided to the Forest Service have not been updated.

D-4.15 – The FS measured PFC for Magpie 1b in 2006, which was a severe moderate drought year. The measurement the Creek during a severe moderate drought year should be re-measured during an above average moisture year to confirm the FAR-D rating.

Under Alternative 3 and Alternative 4:

Initial Actions- Rehabilitate entrenched livestock trails inside the water-lot located in the northeast comer of the allotment and creates a water gap in the far northeast comer with a hardened livestock watering area.

2. Woody Draws
Of six (6) woody draw samples, 50 percent (3) were Healthy and 50 percent (3) were At Risk. The primary water source involved a developed spring with At Risk woody draw conditions along the drainage bottom. Healthy conditions across the pasture were most frequent along steep upper lopes below ridgelines with active tree and shrub reproduction.

A determination of whether Allotment #300 is meeting the Plan objective cannot be made- meeting plan objectives = "cannot be determined" as outlined below:
RESPONSE: A resilient, healthy (properly functioning condition stream) should remain PFC during a drought, flood, etc. That is the rationale for the rating. See Response to Comments C-3.135, C-4.2 and C-4.3.

D-4.16 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comments C-3.132 and C-3.135.

D-4.17 – 3. Herbaceous Structure

#300- P. 578 Allotment #300 has 1,300 FS ac. and a total of 1,300 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.
RESPONSE: See Response to Comment D-2.1.

D-4.18 – The only transects were in 2004. therefore structure objectives cannot be determined.
RESPONSE: See SDEIS Volume II Chapter 3, page 573 for VOR results in Allotment 300, for 2004.

D-4.19 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #300 is meeting the Plan herbaceous structure objectives cannot be made- meeting.plan objectives= "cannot be determined".

In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation.

2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.

- 2004 was a severe drought year; it should not be used as a reliable source of data for herbaceous structure.
- 2005 was the year after the drought; it should not be used as a standalone year to determine structure. It also had a wet snow storm (2-3") on Oct. 3-4 and once it snows VOR transect readings are done.
- If an allotment has only 2004 readings, then the structure is labeled as "cannot be determined".
- If an allotment has only 2004 and 2005 readings, then the structure is labeled as "cannot be determined".
- If an allotment tried to use 2005 and 2006 readings, then the structure data was used to determine an estimated structure.
- Visual observations in 2006 are not sufficient to make a determination of structure in this case where reductions are determined from the observation.

RESPONSE: SDEIS Volume II Chapter 3, page 573 for VOR results in Allotment 300 for 2004.

D-4.20 – The degree of variability with the VOR method is approximately 10 - 20% (average =15%).
RESPONSE: See Response to Comment D-2.1.

D-4.21 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-4.22 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.194, and C-3.199.

D-4.23 – Two sere plots were read in 2005. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.

RESPONSE: See Response to Comments C-1.2 and C-3.199.

D-4.24 – By removing the plots and transects in or adjacent to crested wheatgrass (broken land) and the Robel transects does not leave any remaining plots to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-4.25 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comment C-3.15.

D-4.26 – Using what is stated above, a determination of whether Allotment #300 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-4.27 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment C-3.92, C-3.93a, C-3.94 and D-1.7.

D-4.28 – In Alternative 4, the FS projects Authorized Use for this allotment would be 524 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 550 AUMs, a +5% difference from the FS estimate. The effect of setting Authorized Use at MGA's initial stocking rate calculation equates to only a -2 percent reduction in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-4.29 – However, Allotment #300 does not meet riparian resources objectives, but implementing Alternative 3 initial actions, it is expected that desired conditions on Magpie Creek would be achieved in 10 to 15 years. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. Therefore, Allotment #300 should not receive any adjustment (reduction) in preference for either cow size or the FS "initial estimated carrying capacity" until the FS can establish a trend for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.15 in regards to seral trend, C-3.135 in regards to woody draw trend, and SDEIS Volume 1 Chapter 3 pages 169 - 173 in regards to herbaceous structure.

D-5 Jerry Anheluk and Clint Ridl – Allotment 301 (The Forest Service combined the responses because the two comments were identical.)

D-5.1 – The structure of the grasslands in Allotment #301 has greatly recovered since the last survey.
RESPONSE: We have no data to support the validity of this comment.

D-5.2 – With reduced grazing, uncontrolled structure can also increase life threatening fire hazards.
RESPONSE: The Forest Service has taken in consideration of the potential fire hazard under the Cumulative Effects Past and Present Actions, See SDEIS Volume I Chapter 3, page 219.

D-5.3 – There is too much emphasis given to 2004 V.O.R. transect taken in severe drought. The long term monitoring of V.O.R. readings should easily provide for proper high structure readings.
RESPONSE: See Response to Comments C-1.3, C-3.2, D-2.1, and SDEIS Volume 2 Chapter 3 pages 169 - 173.

D-5.4 – The 42 acre exclusion on Magpie Creek mentioned in Alt 4 would provide no real benefits to overall pasture condition. On the contrary, the exclusion would promote opportunities for noxious weeds and invasive grass species. This exclusion would also create bottlenecks for cattle and maintenance problems for the fence. Generally the exclusion would alter the overall integrity of Allotment #301 and the entire Magpie area as "back country recreation area".

The creation of the 4th pasture would also deter from the back country recreational area opportunity. I seriously think that this pasture has high potential as is to promote current livestock agriculture use and offer the highest off- recreational use.
RESPONSE: The proposed 42 acre exclusion under Alternative 4 is under the adaptive options. Implementation of this exclusion would only occur if monitoring shows that Reach 1 of Magpie Creek, in pasture 301-01, doesn't move toward PFC with the proposed initial actions (See SDEIS Volume II Chapter 3, pages 591, 595, and 606 - 608).

Creation of the 4th pasture in Alternatives 3, 3A, and 4 is proposed to address resource issues. There are no expected cumulative effects on recreation (SDEIS Volume I Chapter 1, pages 30 - 32).

D-5.5 – The June on date for cattle particularly benefits my ranch because I have excessive crested wheatgrass areas on my headquarters that could be property utilized. In May cattle are too young to be moved to summer pasture.
RESPONSE: Implementation of a June on date would only occur if monitoring shows that Goals and Objectives of the Grassland Plan are not met or not moving towards desired conditions. There are stands of crested wheatgrass within the allotment that need to be utilized or otherwise taken into account when setting stocking levels.

D-5.6 – The check valves mentioned for the springs would have to be proofed for winter reliability.
RESPONSE: The Forest Service has installed check valves on other spring developments within the Little Missouri National Grasslands. The check valve was designed to take into consideration of winter condition, and supports aquatic species habitat.

D-5.7 – The allotment has a huge inventory of woody areas. Due to the rough terrain, cattle have limited access to these areas until temperatures cool in late fall. I think that generally these wooded areas (poplar, cedar, etc.) are in generally good condition. The abuse from livestock is overstated and in these areas where stands are compromised, natural progression, Dutch elm, and beaver activity seem to be unrecognized.
RESPONSE: Temperatures do influence livestock desire to utilize woody draws. See SDEIS Volume II Chapter 3, page 595 and Project Record Section L Subsection Woody Draws, Field survey sheets (2/23/2010) for Allotment 301. In review of the Field survey notes beaver activity and Dutch elm disease were not noted as condition factors of the sampled seventeen woody draws.

D-5.8 – Over all the carrying capacity should remain as in the past. The documented good condition of Magpie Creek and the surrounding pasture are proof in themselves that historical use has resulted in good overall ratings for this allotment. With some water improvements the trend in sustainability should continue well into the future.
RESPONSE: Several springs, drainages, and primary use areas are in poor condition. There is a low but appreciable invasive grass component that will remain under-utilized that has the potential to adversely affect future trends.

D-5.8 – Based on the above points, the preferred alternative action plan for reductions for cow size and carry capacity reduction on grassland pasture and grazed forest land are misguided and will pose an unnecessary hardship and diminish the security of grazing privileges.
RESPONSE: See Response to Comment D-1.7.

D-5.9 – Using the V.O.R. readings to register pasture vitality with grouse numbers is quite unrealistic and unscientific. This model will never justify proper utilization systems in dry/wet cycles of the Dakota grasslands. My concern is that it is natural not to have high structure in dry cycles. Alternatively, "under use" during wet cycles would increase fire risks and invasive grass species. The past "fall reviews" offered by association/F.S. are perhaps the best way to monitor trends in use and adapt for the boom/bust cycles that occur in grassland production.
RESPONSE: See Response to Comment D-2.1.

D-5.10 – Creating a preconceived utopia about Dakota grasslands is a dangerous flirt with reality and does not offer enough flexibility with cycles. The overall status of the grasslands as being in good condition is verified by the high value of area ranch lands offered at sale. Our conditions here are the envy of most grassland ranchers in the state and nation.
RESPONSE: See Response to Comment D-2.9.

D-5.11 – It is unthinkable to remove the grazing element from the vital sustainability of eco grassland system. Yet, this is precisely the trend that is occurring. This grazing pressure is how the grassland system evolved. This evolution creates many unpleasant conditions in drought and various conditions. Yet we attempt to ignore this part of nature's scheme. It is important to look at the difference of the North American grassland to the South American grassland where there was never any grazing evolution and no cloven hooved grazers in that continent to evolve a natural grassland condition. Note that in South America all pastures must be planted to African

grass species to allow for grassland sustainability to introduce grassland agriculture livestock use.
RESPONSE: See Response to Comment D-2.10.

D-5.12 – Journals of early pioneers indicate the variability of the weather cycles on the Great Plains. One instance will record the Plains as desert incapable of supporting agricultural life and yet on another account in a different time period on the same land will record grass as high as the saddle stirrups.
RESPONSE: See Response to Comment D-2.11.

D-5.13 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.102, and D-2.12.

D-5.14 – Preference Numbers for Allotment #301 are as follows:

*The FS needs to correct their Authorized use in the SDEIS to 1.672 AM's.
RESPONSE: The 1,666 AMs in the SDEIS is correct because the 1,672 AUMs include all lands, not just NFS lands. The Exhibit E within the MGA Grazing Agreement also has to be updated because the total acreage of this allotment is 4,734 acres in which 4,717 acres are NFS, so the proper percentage of NFS lands within this allotment is 99.6 percent not 83.6 percent as listed in Exhibit E. Exhibit E also has a disclaimer on top that states that not all land records have been updated when several commons were broken into private allocations in the 1980's.

D-5.15 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #301 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.

1. Riparian

Allotment #301 has the following stream reaches and riparian conditions:
Pasture (Reach #)Miles of Stream in ea. Functionality Rating Group

PFC	FAR U	FAR NA	FAR D	NF	Total
301-01	Magpie (2)	1.87			1.87
301-04	Magpie (3)	2.04			2.04

RESPONSE: See SDEIS Volume II Chapter 3, pages 595 - 596 for correct PFC readings and existing conditions. The commentor has left out the FAR D rating on 0.14 miles of stream bringing the total miles of stream inventoried 2.01 miles in pasture 301-01.

D-5.16 – The FS measured PFC for Magpie 2 and 4 in 2004 and 2006, which was a severe drought year and a severe moderate drought year, respectively.
RESPONSE: See Response to Comment C-1.3.

D-5.17 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comments C-3.132 and C-3.135.

D-5.18 – 3. Herbaceous Structure

#301- P. 596 Allotment #301 has 4,717 FS ac. and a total of 4,734 acres. Placing transects on the allotment in 2005 and 2006 = structure cannot be determined.

2005 4 resurveyed transects= 2.36; 2.48; 2.00; 3.28 =Moderate

2006 2 transects- 3.06, 1.59 =Moderate

Average: 6 transects: average 100% moderate.meeting objectives.
RESPONSE: The commentor left out 2004 results. In 2004, eight transects were surveyed with 2 Low structure transects (1.43 and 1.39) and 6 Moderate structure transects (2.18, 1.63, 1.61, 1.61, 1.73, 1.76; (See SDEIS Volume II Chapter 3, page 591)). With no High structure transects observed over the three years, it can be stated that at least the high structure objective is not being met. This is not to say that there is no high structure, but that there is not enough to address the Grasslands Plan and project objectives.

D-5.19 – Transect results: Low – not meeting Objectives; Moderate – Meeting Objectives; High – not meeting objectives.
RESPONSE: See Response to Comment D-5.18.

D-5.20 – P. 596- In September, 2006, two VOR transects were subjectively selected in some of the highest cover observed by members of the IDT. These transects were conducted as a result of a challenge to the 2004 and 2005 results. One transect was measured at 3.06 inches and the other at 1.59 inches. Both are in the Moderate class. After measuring these transects and found to be Moderate, it was determined that there was not enough High structure grasslands in the rest of the allotment to fully address the structure objectives.
RESPONSE: See Response to Comments D-2.1 and D-5.18.

D-5.21 – Transects measured in 2005 cannot be used since they were measured after a wet snow storm. Transects measured in 2006 were taken during a severe moderate drought year.
RESPONSE: See Response to Comments D-2.1 and D-5.18.

D-5.22 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #301 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-5.18.

D-5.23 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-5.24 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-5.25 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-5.26 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-5.27 – One sere plots were read in 2005 and the other two between 2006-2008. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C-1.2 and C-3.102.

D-5.28 – By removing the plots in or adjacent to crested, the remeasured ecoplot, the remeasured pace transect, the belt transects, the NDSU sample plot in crested, the Robel transects, and the ecoplots; leaves the sere plot and the 4 NDSU sample plots to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-5.29 – NFS acres in the allotment are 4,717 ac. The plots represent 943 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: The Forest Service reviewed Benkobi and Uresk recommendation of one sampling site per 640 acres for a sagebrush habitat type. Requirements for plant composition sampling were exceeded (See SDEIS Volume II Chapter 3, pages 596 - 598).

D-5.30 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-5.31 – Using what is stated above; Allotment #301 is meeting the Plan seral stage objectives.
RESPONSE: The allotment is not meeting seral stage/plant composition objectives. See Botany Report Part A Table 7 page 49.

D-5.32 – Summary of resource objectives status

Allotment	Riparian	Woody Draws	Herb.Structure	Seral Stage
#301	**Does Meet**	**Cannot Be Objectives**	**Determined Cannot be Determined**	**Does Meets Objectives**

Allotment #301 does meet riparian resources and seral stage objectives. The FS has not proven with their data for Woody Draws and Herbaceous Structure that any adjustment in stocking levels is needed. Therefore, Allotment #301 should not receive any adjustment in preference for either cow size or the FS "initial estimated carrying capacity".
RESPONSE: Seral stage/plant composition does not meet objectives - See Botany Report Part A Table 7 page 49 and Response to Comments C-3.15, C-3.194, and C-3.199.

Woody draws do not meet objectives - See SDEIS Volume I Chapter 3 Table 3.13 page 135 and Response to Comment 3.135.

In regards to potential trends or achievement of herbaceous structure compared to current conditions, see SDEIS Volume 1 Chapter 3 pages 169 through173.

D-6 Jerry Anheluk and David Rodakowski – Allotment 133D5 (The Forest Service combined the responses because the two comments were identical.)

D-6.1 – The Current Preference is 80 Acres/56 AUMs (adjusted for cow size) = 1.42 AC/AUM
RESPONSE: The Forest Service has reviewed the Medora Grazing Association grazing association permit and the preference for this allotment is listed as 49 AMs

D-6.2 – In the SDEIS it states in the seral stages section, "excessive grazing may impede native grasses". It should also state that depending on season of use intensive grazing could impede invasive grasses and promote natives. Also, no credit is given for crested production, smooth brome, sweet clover, and high productivity per soil types.

RESPONSE: Statements in the Botany Report agree with the above assertions (Part B pages B54 and B55). Potential allowances for high forage production from crested wheatgrass were noted under the effects of adaptive options on seral stage/plant composition in Alternatives 3 and 4. However, there is no reason to credit high forage production when the allotment is hayed under initial actions.

D-6.3 – The forgoing statements would seem to indicate that estimated initial carrying capacity is seriously in error. Under the Alternative 4 scenario invasive species (Kentucky Blue Grass) would increase dramatically.
RESPONSE: There is a potential for the carrying capacity to be underestimated if dealing with a highly productive stand of crested wheatgrass. The initial action in Alternative 4 is to continue current management which is haying. Under the adaptive option in Alternatives 3 and 4 the Forest Service describes the effects of implementing livestock grazing and sets the authorized use in AUMs.

Kentucky bluegrass could increase under Alternative 4 adaptive options if the pasture is severely underutilized, but increases would be equally likely if the season and intensity of grazing is not well coordinated with Kentucky bluegrass and other invasive grass palatability.

D-6.4 – If the 49 AMs (preference) were used at discreet time periods. i.e.: (possibly (2) twice over) to accommodate the (2) permits there would be a much higher probability in successfully managing for improving favorable grasses.
RESPONSE: A prescribed grazing system could contribute to improved plant composition and could be preferable to haying, but there was a general impression of little interest in grazing due to a lack of water. Any grazing system should be coordinated with early-season invasive grass palatability due to their overwhelming dominance in the pasture. The suggested grazing season, i.e. time periods, is not necessarily related to the grazing system, i.e. twice-over. The proposed grazing system sounds like it is meant to accommodate the two member permits rather than the existing forage base, and this is unlikely to improve "favorable grasses".

D-6.5 – The 38% reduction for this allotment is doomed to fail. The more intensive use should be tested and can easily be reduced should favorable outcomes do not materialize. However, the converse of "reduced grazing" and failing consequences would be most difficult to change to "increased use", because of the imposed parameters.
RESPONSE: The only objective stated in the SDEIS Volume I Chapter 3 page 151 is to limit the expansion of invasive smooth brome and Kentucky bluegrass. The effects analysis indicated this is unlikely to be accomplished under the current management of haying. The 38 percent reduction in AU is only meaningful under the adaptive option of grazing in Alternative 4 where initial estimated carrying capacity was determined from the procedures described in SDEIS Volume I Chapter 3 pages 86 - 89. Changing the season and level (i.e. increased AUMs) of forage utilization are other adaptive tools that could be implemented to achieve resource objectives if proposed levels of use are not achieving resource goals.

D-6.6 – Water is available at pasture site from one of the permittees. There is no argument about water costs to get water to the allotment. There is potential here for implementing two grazing permits. The Manske twice over rotation used here may promote a win- win situation for both permittees and Forest Service.
RESPONSE: The Forest Service has reviewed the 2240 files (Range Improvements) for Allotment 133D5 and there are no water developments within this allotment. The Forest Service can only assume that the commentor is referring to a water development on private property adjacent to NFS Lands. Within Alternatives 2, 3, 3A, and 4 the initial action for this allotment is to continue haying this allotment. Since grazing is the proposed adaptive option, any options for a reliable water source would be considered by the Forest Service.

The goal of increasing native forage components would require directing all grazing stress towards the invasive grasses, and it is uncertain that a twice-over grazing rotation would achieve this due to decreased invasive grass palatability beginning by mid-summer. Combining both members' herds and implementing intense early season grazing is likely to hold the greatest promise for increasing native forage and plant diversity.

D-6.7 – Using the V.O.R. readings to register pasture vitality with grouse numbers is quite unrealistic and unscientific. This model will never justify proper utilization systems in dry/wet cycles of the Dakota grasslands. My concern is that it is natural not to have high structure in dry cycles. Alternatively, "under use" during wet cycles would increase fire risks and invasive grass species.
RESPONSE: See Response to Comment D-2.1.

D-6.8 – The past "fall reviews" offered by association/F.S. are perhaps the best way to monitor trends in use and adapt for the boom/bust cycles that occur in grassland production.
RESPONSE: See Response to Comment D-2.8.

D-6.9 – Creating a preconceived utopia about Dakota grasslands is a dangerous flirt with reality and does not offer enough flexibility with cycles. The overall status of the grasslands as being in good condition is verified by the high value of area ranch lands offered at sale. Our conditions here are the envy of most grassland ranchers in the state and nation.
RESPONSE: See Response to Comment D-2.9.

D-6.10 – It is unthinkable to remove the grazing element from the vital sustainability of eco grassland system. Yet, this is precisely the trend that is occurring. This grazing pressure is how the grassland system evolved. This evolution creates many unpleasant conditions in drought and various conditions. Yet we attempt to ignore this part of nature's scheme. It is important to look at the difference of the North American grassland to the South American grassland where there was never any grazing evolution and no cloven hooved grazers in that continent to evolve a natural grassland condition. Note that in South America all pastures must be planted to African grass species to allow for grassland sustainability to introduce grassland agriculture livestock use.

RESPONSE: See Response to Comment D-2.10.

D-6.11 – Journals of early pioneers indicate the variability of the weather cycles on the Great Plains. One instance will record the Plains as desert incapable of supporting agricultural life and yet on another account in a different time period on the same land will record grass as high as the saddle stirrups.
RESPONSE: See Response to Comment D-2.11.

D-6.12 – Special Note: The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the NBEIS project area (See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.102.

D-6.13 – Preference Numbers for Allotment #133 D5 are as follows:

- Preference = 49 AMs:
- Exhibit E, 2009 Grazing Agreement = none given in the Grazing Agreement
- NBSDEIS = 49 AMs

The preference number for Allotment # 133 D5 is 49 AMs.

Listed below are the four main resource objectives that the SDEIS identifies for Allotment #133D5 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.

3. Herbaceous Structure - There were no sampled VOR transects in this allotment. There is no data to indicate what the herbaceous structure distribution may be. It is assumed that herbaceous structure will be variable but dominated by Moderate and some High in those sites not hayed.

In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".

Allotment #133 D5 does not have any riparian and woody draw resources. It is assumed that herbaceous structure will be variable but dominated by Moderate and some High in those sites not hayed. Seral Stages does not apply since it is a created wheatgrass allotment.

The FS has proven that Allotment #133 D5 is meeting objectives. Therefore, no reduction in stocking levels is needed. Based on what I have written above, Allotment #133 D5 should not

receive any adjustment in preference for either cow size or the FS "initial estimated carrying capacity".
RESPONSE: The SDEIS has provided the effects of all alternatives along with the initial action and adaptive actions. Within each of the four resources displayed in the comment the SDEIS has covered the effects of all the alternatives. Alternative 4 is the only alternative within the initial actions that sets authorized use AUMs.
The Forest Service interdisciplinary team determined that due to the small size and current management, through haying, this allotment would not be subject to Grassland Plan structure objectives because at least a portion of the allotment would not be hayed on an annual base (See SDEIS Volume II Chapter 3, page 173 and SDEIS Volume II Chapter 3, page 154). The Forest Service has also identified that there were no sharp-tailed grouse leks within one mile of Allotment 133D5. See Response to Comments C-1.194 and D-1.7.

D-6.14 – Since water is available at pasture site from one of the permittees, there is the potential for implementing grazing on this allotment. The Manske twice over rotation used here may promote a win- win situation for both permittees and Forest Service.
RESPONSE: See Response to Comment D-6.1.

D-7 Jim Arthaud and Larry Cymbaluk – Allotment 287

D-7.1 – If the livestock tank in north half of Section 26 pasture 3 doesn't get added, or it fails to function at any time, or there is a need to obtain more water, the reservoir in Section 26 Pasture 3 can be used as an alternative water source for livestock.
RESPONSE: In Alternatives 3 and 4, adding a livestock tank in north half of Section 26 pasture 3 and adjust tank management accordingly is under Adaptive Options (Supplement DEIS Volume II Chapter 3, pages 536 - 537, and 543) and in alternative 3A this action was moved into the initial actions (Supplement DEIS Volume II Chapter 3, page 542).

Under Adaptive options the reservoir would be fenced to help control livestock distribution and achieve resource conditions, but it would remain available for emergency use.

D-7.2 – The years of*2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the only year existing condition data was collected in the project area (See the Methodology section for each resource in the SDEIS Volume 1 Chapter 3, pages 111 through 113, 132 through 135, 167 through 169, 187 through 192, and 211). See also Response to Comments C-1.3 and C-3.102.

D-7.3 – The FS needs to correct their Authorized use in the SDEIS to 1484 AM's.

RESPONSE: The Federal preference for this allotment is 579 AUMs not 1484 AM's. In review of the 2230 file (permit file) for this allotment shows that from 1966 to 1986 this allotment was an inventory allotment with a preference of 100 head. In 1987 the MGA permit changed to a Private Allocation with 100 for 8 months. In 2005 the permit showed 77 head for 8 months and in 2008 the MGA permit showed that the permit was a CC for 579 Federal AUMs.

D-7.4 – The FS measured PFC for this unnamed tributary of Blacktail Creek (Reach 9) in 2004, which was a severe drought year. The measurement the Creek during a severe drought year should have been re-measured in 2005.
RESPONSE: Resilient healthy streams should remain PFC during a drought, flood, etc. This is the rationale for the rating. See Response to Comment C-1.11.

D-7.5 – Allotment #287 does not meet Plan objectives for riparian. However, it is doubtful that reductions will achieve Plan objectives for this unnamed tributary of Blacktail Creek (Reach 9). Reducing overland flow through reductions in authorized use is not using a scientific approach to the management of the riparian zone. The reductions that would have to take place would be very significant (70% or greater) to meet the FS's projection of overflow reduction. Therefore, the reductions being imposed by the FS under Alternative 4 are not justified.
RESPONSE: This stretch of an unnamed tributary is rate as NF or FAR-D, the IDT has determined that management is necessary to improve riparian conditions.

D-7.6 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-7.7 – The only transects were in 2004, therefore structure objectives cannot be determined
RESPONSE: See Response to D-2.1.

D-7.8 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C–1.3.

D-7.9 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.19.

D-7.10 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: There are no NDSU upland plots sampled in 2008 and 2009 within this allotment in the project record. See Response to Comments C-3.15, C-3.194, and C-3.199.

D-7.11 – 1 Robel transect on the edge of broken land (native)- P.02
3 Robel transects- supported the dominance of native grasses- P.03
1 repeated pace transect in broken land (crested wheatgrass)- P.02
1 sere plot (2005) in native at mid-late seral- P.03
2 belt transects - bluegrass and junegrass - P.03
RESPONSE: See Response to Comment C-3.199.

D-7.12 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-7.13 – By removing the 2 transects in or adjacent to crested, the Robel transects and the two belt transects; this leaves the remaining sere plot in native at mid-late seral to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-7.14 – The one sere plot in native was determined to be in mid-late seral by the FS. NFS acres in the allotment are 1,744 ac. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-7.15 – Allotment Riparian Woody Draws Herb.Structure Seral Stage
#287 Does Not Cannot Be
Meet Obj. Determined Cannot be Determined Meets Objectives

In Alternative 4, the FS projects Authorized Use for this allotment would be 577 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 621 AUMs, a +7% difference from the FS estimate. The effect of setting Authorized Use at MGA's initial stocking rate calculation equates to only a -7 percent reduction in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment D-4.28.

D-7.16 – The FS has not proven with their data for Woody Draws and Herbaceous Structure that any adjustment in stocking levels is needed. Seral Stages does meet objectives. Based on what

we have written above, Allotment #287 should not receive any adjustment in preference for either cow size or the FS "initial estimated carrying capacity" until the FS can establish a trend for Woody Draws and Herbaceous Structure.
RESPONSE: There is insufficient data to ascertain that seral stage plant composition objectives are met. See Response to Comments C-3.15 and C-3.135. for trends of seral stage and woody draw conditions. See SDEIS Volume I Chapter 3 page 169 through173 for the potential of achieving herbaceous structure objectives.

D-8 Edwin Egly – Allotment 220

D-8.1 – One of the years used to study the pasture was 2004; the year 2004 was so dry that we were unable to make hay bales at home. I traveled all the way to Glasgow, MT to bale hay and to purchase the hay. In 2005, I was only able to make about 50 hay bales because of it being another drought year whereas on a normal year I can make about 2,000 hay bales.
RESPONSE: See Response to Comment C-1.3.

D-8.2 – In the years 2004 and 2005 there never was grass in the hay fields in the high structure stage.
RESPONSE: See Response to Comments C-1.2 and C-1.3.

D-8.3 – During the year such as 2005, a drought year the yearlings were never replaced with cow/calf pairs.
RESPONSE: See Response to Comments C-1.3 and D-2.1.

D-8.4 – When the Forest Service was selling land to even the acres with the Ebert's land purchased, they documented and declared this allotment to be suitable for farming, how can they now justify a 30% herd reduction requested now?
RESPONSE: Suitability for farming does not mean current stocking levels are appropriate for achieving resource objectives. See Response to Comments C-1.3 and D-2.1.

D-8.5 – The· years of*2004, 2007 ad 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-8.6 – The FS needs to correct Exhibit E, 2009 Grazing Agreement to 160 AM's.
RESPONSE: Information provided in Exhibit E was provided by MGA.

The land record on the MGA permit shows that there are 289 acres of NFS and 153 AMs for Allotment 220. The Headquarters preference for this allotment is 20 head for 8 months which equals 160 AMs. The MGA permit also states that Allotment 220 is 100 percent

NFS lands with 289 acres and 153 AUMs. One hundred and fifty three divided by 8 months equal 19 head. The acreage within this allotment is also incorrect since MGA has not adjusted for the road right away for Highway 85 and the county road on the North end of the pasture. The Forest Service used the existing fence lines and ArcGIS to determine the proper acreage for this allotment in the DEIS and SDEIS.

D-8.7 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #220 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.

The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #220 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".

In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.

The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: The Forest Service has reviewed the SDEIS Volume II Chapter 3, page 459 that describes the existing condition of herbaceous structure in Allotment 220. As a result of the review the commentor has left out one transect surveyed in 2004. The Forest Service also discussed the ability of Allotment 220 of meeting the high structure objective. The Forest Service will monitor the Allotment in the first three years after change of management occurs determine the capability of producing high structure.

See Response to Comments C-1.3 and D-2.1.

D-8.8 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-1.5, C-3.194, and C-3.199.

D-8.9 – In Allotment #220, the FS used the following transects and plots: 1 Robel transect, 1 belt transect, 2 sere plots, 2 NDSU sample plots. A breakdown of the transects and plots shows the following:

- 1 Robel transects - in native grass -plant composition.
- 1 belt transect- bluegrass as the dominant species.

- 1 sere plot (2005) -mid-early seral stage with blue grama dominance and Kentucky bluegrass
- 1 sere plot (unknown date) - mid seral stage with invasive bluegrass
- 2 NDSU sample plots - Invaded Grass State with bluegrass and mid seral stage with Junegrass and blue grama

Seral Stages refer to native plant communities.
RESPONSE: See Response to Comments C-3.194, and C-3.199.

D-8.10 – One sere plot was read in 2005, the other sere plot has an unknown data. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." The years 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C-1.3, C-3.82, and C-3.102.

D-8.11 – By removing the 1 Robel transect and the 1 belt transect, that 2 sere plots and 2 NDSU sample plots to make an assessment of mid seral for 75% of the allotment, with the other 25% in an Invaded Grass State.
RESPONSE: See Response to Comment C-3.199.

D-8.12 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comment C-3.15.

D-8.13 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-8.14 – Allotment #220 has no Riparian or Woody Draw resources. The FS has not proven with their data for Herbaceous Structure that any adjustment in stocking levels is needed. Seral Stages for Allotment #220 is 75% mid seral and 25% Invaded Grass State with measurements taken in 2005. The FS has not established a trend for seral stages on the allotment, therefore stocking levels should stay at preference or 160 AMs until a trend can be established for both Herbaceous Structure and Seral Stages.
RESPONSE: Two sere plots and three NDSU plots, along with other Robel transects and Belt transects were available to evaluate plant composition in the allotment (SDEIS Volume II Chapter 2 page 258). Only one sere measurement was collected in 2005 and an observation of the plot done in 2006 indicated the same sere conditions.

See Response to Comment C-3.15.

D-9 Edwin Egly, Don Stigen, Roger Klym, and Orest & Dale Baranko – Allotment 272 (The Forest Service combined the responses because the five comments were identical.)

D-9.1 – Preference should be 1707 AUMs vs. 1694 AUMs (adjusting for cow size).

RESPONSE: The Forest Service has reviewed the existing preference on NFS lands and there are 1,473 Federal AM's. Converting these AMs into AUMs would be 1,694 (1,473 Federal AMs X 1.15 AUE (1200 lb cow) =1,694 Federal AUMs).

D-9.2 – Forest Service has no solution to decrease invasive grasses.
RESPONSE: See Response to Comment C-3.82.

D-9.3 – No high structure was present, because transects were taken during 2 years of drought.
RESPONSE: See Response to Comments C-1.2 and C-1.3.

D-9.4 – No funding for pipeline to improve distribution of livestock.
RESPONSE: The Forest Service and MGA board of directors will need to prioritize proposed projects for Conservation Practices based on direction of the DPG Conservation Practices Desk Guide (2013).

D-9.5 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-9.6 – Preference Numbers for Allotment #272 are as follows:

- Preference = 1484 AMs: NFS only
- Dale & Orest Baranko - 67 hd @ 7 mo. = 469 AMs
- Orest Baranko- 31 hd@ 7 mo = 217 AMs
- Sonny Egly- 35 hd@ 7 mo. = 245 AMs
- RogerKlym-31 hd@ 7mo=217 AMs
- Don Stigen- 48 hd x 7 mo. = 336 AMs

  Total= 1484 AMs
- Exhibit E, 2009 Grazing Agreement= 1484 AUMs
- NBSDEIS = 1473 AMs*

Currently, the common is permitted through each permittee's associated headquarters permit by the MGA. Current AMs provided by NFS lands is 1,591.

*The FS needs to correct their Authorized use in the SDEIS to 1484 AM's.

The preference number (or Allotment #272 is 1484 AMs.
RESPONSE: The Forest Service has reviewed the calculations made by the commentors for each individual running in the common and the calculations are correct that Allotment 272's preference is 1484 AMs. However, the commentors are including all lands within the allotment. Allotment 272 contains approximately 23 acres of private land. The MGA's

grazing permit list it as 100 percent NFS Lands. The MGA grazing permit should reflect the private acres as 11 AMs and 1473 AMs NFS.

The commentors also states that "Currently, the common is permitted through each permittee's associated headquarters permit by the MGA. Current AMs provided by NFS Lands is 1,591". The Forest Service has reviewed the MGA grazing permits and project record and according to MGA's grazing permits Allotment 256 is Authorized 1,591 Federal AMs.

D-9.7 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-9.8 – #272 - P. 430 Allotment #272 has 2,956 FS ac. and a total of 2,979 acres. Placing only 3 transect on the allotment in 2005 = structure cannot be determined.
RESPONSE: The Forest Service collected VOR's at the project scale in 2005 to assess the distribution of structure across the project area, not at an Allotment scale. Only one herbaceous dominant transect was re-surveyed in 2005 on Allotment 272, not three as the commentors refer to. A total of eight transects were used to determine the existing condition within Allotment 272.

See SDEIS Volume II Chapter 3, page 427, Project Record Section K Wildlife Report Appendix B, and Response to Comment D-2.1.

D-9.9 – 2006 In September of2006, members of the IDT subjectively located two VOR transects in what was thought to have the highest potential height-density readings in pasture 1. One transect was recorded as 2.3 inches (Moderate class) and the other was 3.68 inches (High structure class). However, after checking through the rest of the allotment, it was the judgment of the members of the IDT present that the allotment did not have sufficient quantities of High herbaceous structure (or the allotment to address the herbaceous structure distribution objectives. The station average for these two transects was 12.5 percent in Low herbaceous structure with the balance, 87.5 percent, in Moderate herbaceous structure. No stations were measured in the High structure class.

2006 - 2 transects - 2.3", 3.68" =Moderate and High structure. However, since the station average was moderate, it made the second transect a moderate instead of high structure. And the team visually judged that allotment as not meeting any high structure.
RESPONSE: The commentors adds that the high structure transect (>3.5 inches) was "made moderate" due to no high structure stations (>5.5 inches). The Forest Service has reviewed SDEIS Volume II Chapter 3, page 430 and there is no statement as described in the comment above. The Forest Service ID team visited the allotment and determined that

there wasn't a sufficient amount of high structure on biologically capable habitat types to fully address structure objectives. This is not to say that high structure is not in the allotment. See Response to Comment D-2.1.

D-9.10 – Average: 3 transects: average- Low structure= 33%, and Moderate structure = 66% Transect Results: Low- Exceeds Objectives; Moderate- Meeting Objectives; High- not meeting objectives.
RESPONSE: The Forest Service used eight transects surveyed in 2004 to describe the existing condition of Herbaceous Structure in Allotment 272. The Forest Service does not combine transects across years in a single analysis because of the annual variability. See also SDEIS Volume II Chapter 3, page 427 for transects surveyed in 2004. See Response to Comment D-2.1.

D-9.11 – NFS acres in the allotment are 2,956 ac. The 2 plots in 2006 represent 1478 ac. each (2005 transect was not used because it snowed before the FS read the transect). This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: See Response to D-9.10.

D-9.12 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #272 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-9.13 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a severe moderate drought year and also should not be used to determine structure along with 2004 and 2005.

The degree of variability with the VOR method is approximately 10 - 20% (average = 15%)
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, D-2.1, and D-2.19.

D-9.14 – 4. Seral Stages

SDEIS Chapter 3, Part 2, p. 430
RESPONSE: The seral stages discussion begins on SDEIS Volume II Chapter 3, page 431.

D-9.15 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-9.16 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and an ecoplot located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-9.17 – Three sere plots were read 2006-2008. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. The FS again biases the data by taking their readings in drought years and then basing reductions off those readings.
RESPONSE: See Response to Comments C1.3, C-3.82, C-3.102, and D-2.1.

D-9.18 – By removing the all the transects and plots in crested wheatgrass, the Robel transects, belt transects and ecoplot data; this leaves 3 sere plots in native and 1 NDSU sample plot to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-9.19 – The 2 sere plots in native were determined to be in mid seral by the FS in Pasture 01. One sere plot and one NDSU sample plot were determined to be in an Invaded Grass State in Pasture 01. NFS acres in the allotment are 2,956 ac. Pastures 02 and 03 did not have any sere plots or NDSU plots. The 4 sere plots represent 739 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: There were four sere plots, one NDSU plot, and several miscellaneous measurements to evaluate plant composition. See Response to Comments D-5.29, C-3.194, and C-3.199. See also SDEIS Volume II Chapter 3, pages 431 - 432, and the Botany Report Part A Table7 page 48 for the number of upland plots sampled within Allotment 272.

D-9.20 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.

Using what is stated above, a determination of whether Allotment #272 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-9.21 – Summary of resource objectives status

Allotment	Riparian	Woody Draws	Herb.Structure	Seral Stage
#272	None Present	Cannot be Determined	Cannot be Determined	Cannot be Determined

RESPONSE: See Response to Comments C-3.15 and C-3.135 regarding trends of seral stage and woody draw condition, and SDEIS Volume 1 Chapter 3 pages 169 - 173 for herbaceous structure.

D-9.22 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-9.23 – For Allotment #272 this amounted to a 13% reduction below preference. The FS states on pp. 404-405, SDEIS, Chapter 3, part 2:
RESPONSE: The Forest Service has reviewed the SDEIS Volume II Chapter 3, pages 404 - 405 and found that the citation is actually for Allotment 256 Alternative 4. The correct citation for Allotment 272 is SDEIS Volume II Chapter 3, pages 440 - 441.

D-9.24 – The "existing Authorized Use of 1,473* federal AMs converted to AUMs by adjusting for cow size is 1,694* federal AUMs", should be 1,472 AMs, not 1,473. Converted to AUMs it should be 1693 AUM's, not 1,694.
RESPONSE: The Forest Service has reviewed the existing Authorized Use and there are 1,473 Federal AM's. Converting these AMs into AUMs would be 1,694 (1,473 Federal AMs X 1.15 AUE (1200 lb cow) =1,694 Federal AUMs).

D-9.25 – Allotment #272 does not have any riparian resources. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. Based on what we have written above, Allotment #272 should not receive any adjustment in preference for either cow size or the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comments C-3.15, C-3.135, and D-5.32 regarding trends of seral stage and woody draw condition, and SDEIS Volume 1 Chapter 3 pages 169 - 173 for herbaceous structure.

D-10 Edwin Egly, Kevin Kessel, Roger Klym, Kurt Kordon – Allotment #258 (The Forest Service combined the responses because the four comments were identical.)

D-10.1 – Why is the FS proposing a new management plan or any changes until the projects offered and proposed from the last management plan are completed?
RESPONSE: The last management plan (Allotment Management Plan (AMP)) was completed under the 1987 Custer National Forest Land and Resource Management Plan. The AMP under the Custer National Forest Land and Resource Management Plan addressed goals and objective which are different than the Dakota Prairie Grasslands Land and Resource Management Plan (2001) goals and objectives

D-10.2 – Which woody draws need to be fenced? There are no plans laid out and these should be shown on the maps, plans and documents prior to the comments period.
RESPONSE: The Forest Service within the SDEIS Volume II Chapter 3, page 410, Table 258.2 displays that Allotment 258 is meeting the desired woody draw condition and within the need for action to maintain current woody draw conditions. Fencing High-value woody draws are in the Adaptive Options in Alternative 3, 3A, and 4 (See SDEIS Volume

II Chapter 3, page 411, Table 258.3). The fencing of woody draws would only occur if monitoring shows a downward trend in woody draw condition.

D-10.3 – Who is to be paying for the fencing and maintaining of the woody draws and riparian areas under the SDEIS?
RESPONSE: The Forest Service and MGA would need to discuss the cost and the responsibility of maintaining fences if this Adaptive Option was chosen. See Response to Comment C-1.2

D-10.4 – Why did the 3 year study occur only on the drought years? Shouldn't it be more of an average of dry and wet years? Did the Forest Service use the data from the NDSU studies or only the data they collected?
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.8, and C-3.102.

D-10.5 – Where is the fence located in the 3 acres on Pasture #1? Is the fence to come out of Ash Coulee and up? The location is not documented on a map or in the plans?
RESPONSE: The Forest Service has identified the location of the three acre exclosure within the SDEIS Volume II Chapter 2, page 414. The Forest Service also stated that the degraded reach occurs in a fenced corner where Ash Coulee flows from pasture 2 into pasture 1 and then back into pasture 2. Livestock tend to bunch in this reach.

D-10.6 – Why did the Forest Service have the oil companies' seed crested wheat grass when doing reclamation if the crested wheat grass is so bad?
RESPONSE: Crested wheat grass was widely used throughout the Northern Great Plains in areas that once were cultivated, along ditches, and reclamation activities because the species was drought tolerant, cold resistant, well adapted to stabilization of disturbed soils reducing wind and water erosion, and provided forage for livestock species. The commentor is correct that the Forest Service allowed oil companies to seed crested wheatgrass when doing reclamation prior to the late 1980's. By this time, greater achievement of multiple resource goals by reclaiming with native species was recognized and has since been implemented.

D-10.7 – To maintain a high structure status can we obtain permission to spray and kill the sage brush?
RESPONSE: The use of various sagebrush management tools is addressed in the "Toolbox" (SDEIS Volume III Appendix D, pages 38 - 39). At this time none of these tools have been proposed for Allotment 258. The sole purpose of sagebrush control would not to be to gain high structure herbaceous vegetation – though it can aid in that regard. Sagebrush control can be utilized to help achieve multiple objectives such as provide potential forage and restoration opportunities.

D-10.8 – Why does Ash Coulee Allotment #258 consist of only 2 alternatives instead of the 4 alternatives plans on the other allotments?
RESPONSE: There are five alternatives displayed for Allotment 258 in the SDEIS Volume II Chapter 3, pages 416 - 425.

D-10.9 – Of the years used in the pasture study, 2004 and 2005 were so dry that most of the members were unable to make any hay or else the amount was so minimal from the normal years that they were forced to hay outside the area or to purchase hay from elsewhere. Why did the FS use 2004 as there baseline?
RESPONSE: See Response to Comments C-1.3 and C-3.102.

D-10.10 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-10.11 – Preference Numbers for Allotment #258 are as follows:

- Preference = 2,058 AMs:
- Kevin Kessel- 82 hd@ 5.5 mo.= 451 AMs
- Roger Klym- 45 }).@ 7 mo = 315 AMs G
- Kurt Kordon @&mo. =AMs IS :2
- Sonny Egly- 188 hd @ 6.5 mo = 1,222 AMs

Total= 2,058 AMs

- Exhibit E, 2009 Grazing Agreement= 2,142 AUMs
- NBSDEIS = 2,071 AMs*

Currently, the common is permitted through each permittees' associated headquarters permit by the MGA; however, one permittee has no associated headquarters allotment and is issued a tum-in permit for the common. The present AMs, including NFS lands. state land and private lands. allocated to this allotment are 2,140; however, in the past 5 years there have been drought reductions of which 3 of those 5 years the permittees have taken voluntary reductions. They have been running between 1,300 and 1,500 AMs.

*The FS needs to correct their Authorized use in the SDEIS to 2,058 AM's.

The preference number for Allotment #256 is 2,058 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment and its four permittees is 2,071 Federal AMs and all lands the preference is 2,140, as stated in the SDEIS and by two of the four permittees. In review of the comments from the four permittees two show a preference of 2,058 AMs and the other two shows 2,140 AMs. The permittees listing the 2,058 also refer to Allotment 256 in which they are not allocated numbers in and do not carry a MGA permit to graze in Allotment 256. Exhibit E also has a disclaimer on top that states that not all land records have been updated when several commons were broken into private allocation in the 80's.

D-10.12 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #258 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.

1. Riparian

Allotment #258 has the following stream reaches and riparian conditions:

Allotment/ Pasture	Stream (Reach#)	Miles of Stream in ea. Functionality Rating					Group
PFC	FAR U	FAR NA	FAR D	NF	Total		
258-02	Ash Coulee (0)			1.13			1.13
258-01	Ash Coulee (1)	0.06					0.06
258-01	Ash Coulee (2)				0.32		0.32
258-02	Ash Coulee (1)	1.15					1.15
258-02	Ash Coulee (2)				0.13		0.13
258-02	Ash Coulee (3)	0.80					0.80

PFC transects were read in late September of2004 (severe drought year) for Ash Coulee 1 and Ash Coulee 3.
PFC transects were read in late September of2004 (severe drought year) and 2006 (severe moderate drought) for Ash Coulee 2.

Total miles of PFC = 2.01 miles- Meeting Plan objectives (56%)

Total miles ofFAR-NA = 1.13 miles- FAR-U Total miles of FAR-D = 0.45 miles- FAR-D

Page 413, SDEIS: Ash Coulee (reaches 0, 1, 2 and 3) flow through Allotment 258. In the 1998 and 1999 surveys, these reaches of Ash Coulee had functionality ratings of FAR- NA and FAR-D. Small livestock exclosures (Figure 258.1a and b) were constructed along the most severely degraded reaches of Ash Coulee. The IDT resurveyed Ash Coulee in 2006 and gave a functionality rating of FAR-D to 0.5 miles of channel and a functionality rating of PFC to 2.0 miles of channel. Much of the improvement in the past decade is attributed to the livestock exclosures, which have permitted establishment of adequate riparian vegetation to stabilize banks, reduce erosion, and decrease sediment transport.

The degraded reach occurs in a fenced comer where Ash Coulee flows from pasture 2 into pasture 1 and then back into pasture 2. Livestock tend to bunch in this reach.
RESPONSE: The majority of the stream in the pasture is at PFC during the same drought years. This means stream is capable of being at PFC with proper management even during drought years.

A three-acre riparian exclosure is proposed to address the objective of moving FAR-D stream segments towards PFC and improve conditions similar to that which has occurred in the recently constructed exclosures.

D-10.13 – #258- P. 415 Allotment #258 has 5,605 FS ac. and a total of 5,792 acres. Placing only 3 transect on the allotment in 2005 = undetermined structure.

2005 3 re-measured transects- 1.0", 1.38", 1.13" =Low structure
2006 0 transects -
Placing only 3 transect on the allotment in 2005 == structure cannot be determined.

Since 2005 was the year after the drought, it should not be used as a stand-alone year to determine structure. If an allotment doesn't have any reading other than 2004 and 2005, then the structure cannot be determined.

The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #258 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".

The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: The Forest Service collected VOR's at the project scale in 2005 to assess the distribution of structure across the project area, not at an Allotment scale. . In 2006 there was no challenge raised against the 2004 results and no additional VOR data was collected by the Forest Service. See SDEIS Volume II Chapter 3, page 427 and the Wildlife specialist report, Appendix B for VOR data collected on Allotment 258.

See Response to Comment D-2.1.

D-10.14 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.

Summary of seral stage analysis for Allotment #258:

Allotment #258 meets herbaceous structure objectives for high and mid structure.
RESPONSE: The Forest Service will assume the commentor is referring to "seral stage" and not structure due to the context of the comment. As stated in Table 258.2, SDEIS Volume II Chapter 3 page 410, there appears to be a moderately high potential for seral stage objectives to be met in this allotment.

See Response to Comments C-1.5, C-3.15, C-3.194 and C-3.199.

D-10.15 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".

For Allotment #258 this amounted to a 29% reduction below preference. The FS states on page 424, SDEIS, Chapter 3, part 2:
RESPONSE: Data of reported use for this allotment covers the period of 2004-2008, and the proposed level of Authorized Use under Alternative 4 would remain 3-55 percent greater than use reported during these years (Botany specialist report, Part C Appendix F Table F2 – Reported Use).

See Response to Comment D-1.7.

D-10.16 – Allotment #258 is meeting objectives for Woody Draws and Seral Stages. Allotment #258 will meet riparian objectives when Alternative 4 initial actions of constructing a riparian fence are implemented. The FS has not proven with their data for Herbaceous Structure that any adjustment in stocking levels is needed. Based on what we have written above, Allotment #258 should not receive any adjustment in preference for either cow size or the FS "initial estimated carrying capacity".
RESPONSE: See SDEIS Volume 1 Chapter 3 pages 169-173 for discussion relative to herbaceous structure.

D-11 Ron Goldsberry – Allotment 282

D-11.1 – The years of*2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-11.2 – *The FS needs to correct their Authorized use in the SDEIS to 2,224 AM's.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 2,123 Federal AMs.

D-11.3 – PFC transects were read in late September of2004 (severe drought year) and 2006 (severe moderate drought) for Whitetail (11).
RESPONSE: All segments of Whitetail (11) were at PFC and Fantail was at FAR-U during the drought year of 2004, indicating that streams are capable of being at PFC during drought. A resilient, healthy (properly functioning condition stream) should remain PFC during a drought, flood, etc.

D-11.4 – Parts of three streams flow through Allotment 282. Fantail Creek (Reach 1) flows through pastures 3 and 5. This reach has undergone dramatic geomorphic changes following a wildfire in 1988. The DPG hydrologist visited Fantail Creek in 2003, 2004, 2005, and 2007. He observed that riparian vegetation is increasing, sedimentation rates are decreasing, sediment loads are decreasing. Consequently, he gave the creek a functionality rating of FAR-U, although this determination was not part of a formal riparian survey.

RESPONSE: All Segments of Fantail Creek were rated as FAR-U as indicated in the above response.

D-11.5 – Magpie Creek has some very serious issues far beyond what grazing by livestock has done to it. Oil companies have changed the course and structure of Magpie creek by installing pipelines with D-8 cats, in the middle of the Magpie Creek, crossing Magpie Creek, and around Magpie Creek. The FS fails to mention this impact in the analysis. It far surpasses any impacts caused by livestock, to the point Magpie Creek will take centuries to recover.
RESPONSE: Adverse livestock related involving excessive time or use of riparian areas were identified in the SDEIS Volume II Chapter 3 pages 487-488 and need to be addressed. Adverse effects of oil and gas related disturbances were also recognized along some of the above stream segments, but the Forest Service does not agree that it would take centuries for NF reaches of Magpie Creek to recover. Whitetail and Magpie Creeks would be expected to improve within a few years with the initial or adaptive options of creating riparian pastures (SDEIS Volume II Chapter 3 pages 496 and 500).

D-11.6 – In Alternative 4 Initial Actions and Adaptive Options it states: Initial actions include:

In pasture 6, on Lower Magpie Creek, construct a 167-acre riparian exclosure with no grazing for first 3years.

Adaptive options include: Create a riparian pasture through construction of a fence south of Magpie Creek in Sections 4, 5, 6.

If created, the riparian pasture would require an additional water source.

If riparian vegetation has been established on 80 percent of stream banks and active stream cutting has ceased occurring then initiate late or dormant season prescribed grazing. Prescribed grazing would be identified in AOVAW.

Therefore, riparian objectives of "meeting or moving towards" would be met at this point.
RESPONSE: Comment noted. Riparian objectives would nonetheless need to be monitored and trends established.

D-11.7 – #282- P. 489 Allotment #282 has 10,807 FS ac. and a total of 12,394 acres. Placing only 2 transect on the allotment in 2005 = structure cannot be determined. However, 3 transects were place in shrubs habitat types in 2005.

2005 2 transects - 1.66; 1.0

2006 0 transects- I

Allotment #282 is meeting herbaceous structure objectives.

RESPONSE: The Forest Service agrees that the allotment is meeting structure objectives for a drought year under the previously proposed drought guidelines (SDEIS Volume II Chapter 3, page 489) and if shrub transects are factored in. This is also implied on page 484 under the Need for Action column where it is stated to "[manage allotment to maintain meeting objectives." Like the commentor pointed out, the high structure was in shrub dominated sites. However, one of the proposed actions under Alternative 4 is to "reduce sagebrush encroachment on terrace along east side of pasture 6." This was pointed out later under Alternative 4 analysis (SDEIS Volume II Chapter 3, page 501), "reducing sagebrush would appreciably alter the existing vegetative structure condition." However, the effects of sagebrush management may be off-set under Alternative 4 by "adjusting the Authorized Use to account for cow size (ibid)."

See Response to Comment D-2.1. See also SDEIS Volume II Chapter 3, page 484 for VOR results in 2004 in Allotment 282.

D-11.8 – The FS states above that "the initial estimated carrying capacity is 2,598 AUMs." However, on page 483, Allotment #282, Chapter 3, Part 2, of the SDEIS it shows Allotment #282 initial estimated carrying capacity is 2,859 AUMs.
RESPONSE: Thank you for pointing out the differences in initial estimated carrying capacity within the initial action and the table on page 483 of the SDEIS. The correct value is the 2,859 AUMs and will be corrected in the Errata.

D-11.9 –In the SDEIS, four allotments had authorized use set by adjusting Preference for cow size because they were not meeting objectives, even though FS initial estimated carrying capacity on NFS lands was higher than preference, i.e. #129, #131, #135, and #282.
RESPONSE: See Response to Comment C-3.29.

D-11.10 – How can the FS withhold the +17% increase by saying objectives aren't being met when the FS knows they are being met?

The FS should not penalize Allotment #282 for meeting objectives. Based on what I have written above, Allotment #282 should receive a +17% increase in stocking rate.
RESPONSE: The initial estimate of carrying capacity included all forage, however, for example it did not adjust for poor distribution of water, topographic constraints, and unsuitable or rarely used rangeland characterized by steep sparsely vegetated south aspects and steep north aspects with dense Rocky Mountain juniper.

D-12 Ike Hecker – Allotments 126 and 128

D-12.1 – Table 3.6 lists an incorrect preference and thus Tables 3.5 and 3.4 have been calculated incorrectly as well. So the proposed decrease in authorized use would be markedly more than indicated in the tables. Also the 3-year average in Table 3.4 was taken from drought years when there were mandatory cuts in use. The math is very misleading (deceiving), because it masks the proposed reductions.

RESPONSE: All available reported use data for 2003 through 2008 was compiled in the Botany specialist report, Part C Appendix F Table F2 and indicates that many allotments are consistently stocked at values lower than Authorized Use. Proposed reductions in use are based on the average use from 2003-2008, not Preference. See Response to Comment D-4.1.

D-12.2 – The SDEIS language should be more consistent regarding the terms "preference", "permitted", and "authorized". I am opposed to any "adaptive" management plan.
RESPONSE: Comment noted relative to adaptive management, however it is a key component to several of the alternatives. See Response to Comment D-4.1.

D-12.3 – Decisions regarding any proposed cuts in grazing should be based on sound science after long term monitoring and not emotion, politics, or the preconceived agenda this plan was written for.
RESPONSE: Existing resource conditions described in the SDEIS, based on monitoring, indicate the need to improve current management and work towards resource objectives. See Response to Comment D-4.1.

D-12.4 – Riparian: The head cut in Whitetail Creek is the result of natural erosion from snowmelt and rain runoff. A riparian fence would do nothing to disable this natural process. It would be a detriment to the natural walkway that deer and elk are already using. It would be next to impossible to maintain and may harm cattle or wildlife that could be trapped inside. Trying to stop the creek from eroding its banks would be like trying to rope the wind. Whitetail Creek has seen many changes over the 54 years I've lived on.the ranch and it will continue to change thus the name "'Badlands". I am not sure what "stream structures" are but I'm pretty sure it's not a feasible option economically and not a very practical alternative.
RESPONSE: The desire is to retard the progress of the nickpoint (at the headcut) further upstream. Where livestock grazing is adversely impacting intermittent streams through excessive use of riparian vegetation, trampling and trailing along stream banks, loafing, etc., corrective action is needed. Riparian fencing has been shown an effective tool to riparian areas, refer to results for Ash Coulee Creek exclosures in Allotment 145 (Chapter 3, pages 413 - 415). Stream segments rated at NF improved to PFC in less than 5 years with exclosures installed.

D-12.5 – Woody Draws: I contend that the woody draws and pastures in general are healthier now than many years ago.
RESPONSE: There is no indication from NDGF-USFS data extending back to 1987 that they are currently improving under current management.

D-12.6 – This is the result of each member having their own allotments to manage and not running in common as we did in years past.
RESPONSE: Conversely, reducing the size of allotments and pastures so everyone has their own creates the potential for increased intensity and evenness of disturbance within woody draws and rangelands. The larger allotments and pastures tend to exhibit greater woody draw conditions than small pastures.

D-12.7 – A historic look back at the property is proof that the woody draws are functioning well.
RESPONSE: Current data across the allotment indicates a disparity between existing and desired conditions. See Response to Comment C-3.135.

D-12.8 – The abundance of hunters in the fall is proof positive that the ecosystem is functioning well here on our allotments.
RESPONSE: Woody draw conditions were based on current surveys and measurements.

D-12.9 – A ranger looking at these areas without the knowledge of the past is not a fair assessment.
RESPONSE: Assessments were based on current conditions and apparent trends in condition. A lack of regeneration and high shrub structure in less than Healthy woody draws is indicative of decreasing trends (see Response to Comment C-3.135).

D-12.10 – We have deer, elk, coyote, turkeys, and sharp-tailed grouse aplenty on this ranch. The spring in pasture 6 is very efficient with a flow rate of approximately 5 gallons/minute and does not freeze in the winter. The tree damage in that area is due to beavers building dams (someone should wring their necks). They have demolished 90% of one hillside.
RESPONSE: Conditions around the springs in pastures 4 and 6 were discussed in the SDEIS Volume II Chapter 3 page 5.

D-12.11 – Fencing the spring would not help a bit and in addition to cattle, wildlife water there year around as well.

I was told by USFS that my cows were destroying the trees in and around that spring but it is very obviously beavers that are doing it-cows just don't have that kind of talent.
RESPONSE: Comment noted. See Response to Comment D-12.10.

D-12.12 – Herbaceous Structure: The transect results were taken during drought years 2004 and 2005 and so they are unfair and probably invalid (2010 and 2011 should be figured in if drought years carry so much weight). The VOR readings were biased because there was not a good sampling of areas on these allotments. There should be one reading for each 320 acres and not the select few that were done. Any permanent changes in grazing based on VOR readings should be done with a long term (10-20 years) average and not a 3 year average during a drought cycle.
RESPONSE: The Forest Service sampling intensity is based on biologically capable acres and not based on overall allotment acres. Allotment 126 has 1270 acres of biologically capable. The SDEIS Volume II Chapter 3, page 2 shows that four transects describe the existing condition of herbaceous structure in Allotment 126. The Forest Service sampling intensity was approximately one transect per 318 acres. Allotment 128 had approximately 2210 acres of biologically capable acres and eight transects describe the existing condition of herbaceous structure (See SDEIS Volume II Chapter 3, page 41). The sampling intensity used by the Forest Service was approximately 276 acres.

In 2006, these allotments were visited by members of the Forest Service ID team and Mr. Hecker in order to visit those sites that the member thought contained higher structure. It was determined that though high structure was probably present, there was not enough to make up 20 percent of the allotment(s). (See SDEIS Volume II Chapter 3, page 6). See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-12.13 – It is suggested that the crested be burned but that takes high structure from the grouse. Burning the woody draws would promote noxious weed growth and Canadian thistle, which is already a huge problem. It is also suggested that I run my herd together as one herd rather that splitting them in two- young cows and older cows. There are so many problems with this idea it hardly bears discussion. It is not practical at all to run cattle that way. Young cows need different bulls and nutrition than older cows. Splitting the herd is mandatory for good herd health and the current rotation is working very well for range and herd health. Running our whole herd together is not sound animal husbandry and would have negligible resource benefits.
RESPONSE: There are concerns of range health with regard to the abundance of invasive grasses in unbroken land. Running multiple herds and multiple rotations without regard to plant composition and excessive utilization of selected species is likely contributing to this problem, as is the direct introduction of invasive grass hay. Grazing management needs to be coordinated with the sustainability of native plant resources by establishing the timing and intensity of grazing to existing and desired forage composition.

Burning crested wheatgrass can impact herbaceous structure. This is discussed in the Toolbox (SDEIS, Volume III, Appendix D). The use of prescribed fire does have short term implications but can also be used in conjunction with livestock grazing to help create a "shifting mosaic" of herbaceous cover and improve plant composition. Noxious weeds would be monitored after burning. Treatment assistance is available through Billings County and the MGA for noxious weed problems.

D-12.14 – The years of*2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-12.15 – Preference Numbers for Allotment #126 are as follows:

- Preference = 90 hd for 8 months = 720 AMs
- Exhibit E, 2009 Grazing Agreement = 489 AMs
- NBSDEIS = 489 AMs

The preference number for Allotment# 126 is 720 AMs. The FS needs to correct the SDEIS and Exhibit E to reflect the 720 AMs.

RESPONSE: The SDEIS Volume II states on page 4 that Allotment 126 is issued a private allocation inventory permit for 90 head for 8 months. This Preference includes all land ownership types that are listed on the grazing association permit Land Record associated with summer grazing on headquarters. Exhibit E in the 2009 MGA grazing agreement and the SDEIS display only the preference AMs associated with NFS lands, not all land ownership types. In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 489 federal AMs. .

D-12.16 – PFC transects were read in September of 2004 (severe drought year). Total mile of PFC = l.72 miles -Plan objectives met 100%
RESPONSE: Comment noted. This shows streams can maintain PFC in severe drought years.

D-12.17 – 2. WoodyDraws

Of 13 woody draw samples collected among all five pastures, 31 percent (4) are Healthy and 69 percent (9) are At Risk.

A determination of whether Allotment #126 is meeting the Plan objective cannot be made meeting plan objectives= **"cannot be determined".**
RESPONSE: See SDEIS Volume II Chapter 3, page 2, Table 126.2 as evidenced by the need for action. See also Response to Comment C-3.135.

D-12.18 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-12.19 – The SDEIS conclusions also ignore the fact that the beavers are attacking the trees not the cows.
RESPONSE: Of 13 woody draws sampled only one was currently affected by beaver in addition to livestock.

D-12.20 – 3. Herbaceous Structure

Allotment #126- P. 6 Allotment #126 has 1950 FS ac. and a total of 4,161 acres. Placing 2 transects per year on the allotment= 1 transect for every 975 ac. of FS.
RESPONSE: Refer to Response to Comment D-12.12.

D-12.21 – The two transects in 2006 could have been high structure. Since the degree of variability with the VOR method is approximately 10-20% (average= 15%)
RESPONSE: See Response to Comment D-2.1.

D-12.22 – Transect Results:

- Average: 4 transects: 50% high. and 50% moderate- Meets Objectives

RESPONSE: Refer to Response to Comment D-2.1. See also SDEIS Volume II, Chapter 3, page 2 for VOR results for 2004 and 2005 in Allotment 126.

D-12.23 – However, the guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #126 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".

RESPONSE: Refer to Response to Comment D-2.1. See also SDEIS Volume II, Chapter 3, page 2 for VOR results for 2004 and 2005 in Allotment 126.

D-12.24 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.

RESPONSE: See Response to Comment C-1.3.

D-12.25 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).

RESPONSE: See Response to Comment D-2.1.

D-12.27 – The best method to use in determining seral stage was the NDSU data.

RESPONSE: Two NDSU plots were sampled in Allotments 126 and 128, four sere plots were sampled in Allotment 126, and three sere plots were measured in Allotment 128. The Forest Service used all available information to evaluate plant composition and apparent trends. See Response to Comments C-3.15, C-3.194, and C-3.199. See also SDEIS Volume II Chapter 3, pages 6 through 7 and 46 for data used to evaluate upland plant composition in Allotments 126 and 128.

D-12.28 – The SDEIS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage. Because seral stage only applies to native plant species, FS cannot measure for seral stage in introduced species pastures.

RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-12.29 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and an ecoplot located in broken land (crested wheatgrass) and claiming that a seral stage can be

calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-12.30 – Two sere plots were read in 2005 and the other two between 2006-2008. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." The year's of2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. The FS again biases the data by taking their readings in drought years and then basing reductions from those readings.
RESPONSE: See Response to Comments C-1.3 and C-3.82.

D-12.31 – By removing the 2 plots in or adjacent to crested, the NDSU sample plot in crested, the Robel transect and ecoplot data; this leaves the remaining 2 sere plots in native (1 along a ridge shoulder in Pasture 2 and 1 at the northern end of pasture 4) to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, C-3.199, and D-12.27.

D-12.32 – The 2 sere plots in native (1 along a ridge shoulder in Pasture 2 and 1 at the northern end of pasture 4) were determined to be in mid seral by the FS. NFS acres in the allotment are 1950 ac. The 2 sere plots represent 975 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: See Response to Comments D-12.27, D-5.29, C-3.194, and C-3.199.

D-12.33 – Seral Stage plots were read in 2005-2008. Analysis of any project based on a severe drought years is flawed and should not be used. Seral Stage is confined to native communities. The FS tries to determine seral stage on introduced grasslands site (crested wheatgrass) and include those results (all of which are early seral) as a way to make the North Billings project look like they are not meeting seral stage objectives. The FS produces very biased data along with using the drought.
RESPONSE: See Response to Comments C-1.3 and C-3.82.

D-12.34 – However, using what is stated above, a determination of whether Allotment #126 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.15, C-3.194, C-3.199.

D-12.35 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-12.36 – The FS erases the 42% increase by stating the "the manager would have to factor in the cow size when calculating the number of head and the grazing season that can be grazed when planning the rotation for the allotment." What this equates to is a 30% increase, not 42%.

However, the likelihood the member will ever see that increase is doubtful based on the following statements in the SDEIS:
RESPONSE: This allotment, under Alternative 4, would gain 236 Federal AUMs (562 AUM's x 0.42 = 236 AUMs) which when adding the 236 Federal AUMs to 562 Federal AUMs equates to 798 Federal AUMs.

D-12.37 – The initial action of adjusting the Authorized Use to the initial estimated carrying capacity would not enhance the nesting and brooding habitat for sharp-tailed grouse within Allotment 126. Authorizing a higher level of use would be counterproductive to achieving the herbaceous structure objectives
RESPONSE: The statement above arises from the data showing that structure objectives are not met at the current level of AUMs and that any increase from the existing level would be "counterproductive to achieving the herbaceous structure objectives." This increase would occur only under the preferred alternative. The remaining action alternatives retain the existing level of use.

D-12.38 – Although Authorized Use is 30 percent less than initial estimated carrying capacity, winter use is not counted towards the amount of Authorized Use and would decrease the difference between total use and initial estimated carrying capacity as a result of grazing during periods of low snow cover.

The FS will never grant the 30% increase. They will use high structure as the objective to withhold the increase, even though it should be granted.
RESPONSE: Under the preferred alternative, the management of Allotments 126 and 128 are combined. Allotment 126 is under the initial estimated carrying capacity whereas Allotment 128 is over the initial estimated carrying capacity. Since the two allotments are combined under this alternative, the AUMs are balanced between the two resulting in the AUMs of Allotment 128 being reduced while Allotment 126 would experience increased AUMs. See Response to Comment C-3.18.

D-12.39 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.102, and D-2.1.

D-12.40 – Preference Numbers for Allotment #128 are as follows:

Preference = 251 hd for 8 months = 2008 AMs

Exhibit E, 2009 Grazing Agreement= 2355 AUMs

The preference number for Allotment# 128 is 2008 AMs. The FS needs to correct the SDEIS and Exhibit E to reflect the preference of 2008 AMs.
RESPONSE: The Forest Service has reviewed the MGA's annual permit and the correct preference for this allotment is 261 AUs for 8 months as stated in the SDEIS Volume II Chapter 3, page 43. Exhibit E in the 2009 Medora Grazing Association grazing agreement displays only the preference AMs associated with NFS lands, not all land ownership types. However, Exhibit E (2009 Grazing Agreement) shows that there are 554 AUMs for the old headquarters and 1312 AUMs for the old common which equals 1866 AUMs, not 2355 AUMs. In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 1866 federal AMs. Any corrections to Exhibit E in the Medora Grazing Association grazing agreement is beyond the scope of this project and would require the association to request an amendment to the grazing agreement, in which the Forest Service would have to approve and agree to the changes.

D-12.41 – Making one PFC assessment in a severe drought year does not make for an accurate assessment of the reach. It would be difficult to determine trend from use.
RESPONSE: 1.76 miles of Whitetail Creek in Allotment 126 were at PFC and support the assertion that these conditions can be maintained during a year or years of drought. 1.26 miles of **Whitetail Creek in Allotment 128 were FAR-D or NF, which indicates a management conflict. A resilient, healthy (properly functioning condition stream) should remain PFC during a drought, flood, etc.**

D-12.42 – Therefore, riparian objectives of"meeting or moving towards" would be met at this point.
A determination of whether Allotment #128 is meeting the Plan objective cannot be made-meeting plan objectives = "cannot be determined" as outlined below:
RESPONSE: Riparian objectives would nonetheless need to be monitored and trends established. See Response to Comment C-3.135.

D-12.43 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward.objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-12.44 – The SDEIS conclusions also ignore the fact that the beavers are attacking the trees not the cows.
RESPONSE: See Response to Comment D-12.10 above.

D-12.45 – 2006 VOR =Jack Dahl and Arden Warm visited Allotments 126 and 128 on November 8, 2006, to determine if there was sufficient High structure to address structure

objectives. Both Dahl and Warm agreed there was not a sufficient amount of High structure to meet the structure objectives. Since #126 had readings of VOR = 3.5, 3.44 in 2006, Mr. Dahl and Mr. Warm should have taken measurements, because they are probably not that proficient enough in taking VOR to make the call without measuring.
RESPONSE: Mr. Warm has done VOR readings for 12 of the last 14 years (literally hundreds of transects) and Mr. Dahl has done VOR readings for 6 of the last 9 years. They have been trained (office and on-the-job) as well as having demonstrated or trained others. Based on their training and experience they determined that additional measurements were not needed to confirm the lack of meeting high structure objectives.

D-12.46 – *Average: 3 transects 2005 = 2 moderate. 1 low = 66% moderate and 33% low, however according the gudielines below. i(2005 is the stand alone year. then the structure is cannot be* determined.
RESPONSE: See Response to Comment D-2.1.

D-12.47 – 2004 was a severe drought year; it should not be used as a reliable source of data for herbaceous structure.
RESPONSE: See Response to Comment D-2.1.

D-12.48 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%,).
RESPONSE: See Response to Comment D-2.19.

D-12.49 – The best method to use in determining seral stage was the NDSU data. The SDEIS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage. Because seral stage only applies to native plant species, FS cannot measure for seral stage in introduced species pastures.

RESPONSE: See Response to Comments D-12.27, C-1.5, C-3.194, and C-3.199.

D-12.50 – Seral Stages refer to native plant communities. Using plots located in broken land (crested wheatgrass) or on the edge ofbroken land, and claiming that a seral stage can be calculated is wrong. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.

By removing the following plots and transects listed below, that leaves 1 Sere Plot and 2 NDSU sample plots in native (in Pasture 1, 2, and 4) to make an assessment of mid seral for the entire allotment. That would be 3 plots for 4,299 acres ofNFS lands or 1 plot for per 1,433 ac.

- 2 sere plots within or near the edge of broken land in pasture 2 were at mid seral stages with crested wheatgrass and blue grama dominance and varying amounts of Kentucky bluegrass
- 4 Robel transects

- 4 ecoplots
- 2 belt transects

This is not acceptable according to the protocol for statistical sampling of seral stages. The sample size is too small to make a determination of mid seral for the entire allotment. Seral Stages cannot be accurately predicted for this allotment.
RESPONSE: See Response to Comments D-12.27, C-3.194, and C-3.199.

D-12.51 – Seral Stage plots were read in 2005-2008. Analysis of any project based on a severe drought years is flawed and should not be used.
RESPONSE: See Response to Comments C-1.3, C-3.82, and C-102.

D-12.52 – Seral Stage is confined to native communities.

The FS tries to determine seral stage on introduced grasslands site (crested wheatgrass) and include those results (all of which are early senti) as a way to make the North Billings project look like they are not meeting seral stage objectives. The FS produces very biased data along with using the drought.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-12.53 – Using what is stated above, a determination of whether Allotment #128 is meeting the Plan sera.l stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, C-3.199, D-12.27.

D-13 Ike Hecker – Allotment 132H

D-13.1 – The years of*2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year ·· The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.18.

D-13.2 – The preference number for Allotment# 132H is 332 AMs.
RESPONSE: The Medora Grazing Association provided the Forest Service with a definition of preference number (project record for data). Medora Grazing Association definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 332 AMs.

D-13.3 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS

cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-13.4 – #132H- P.129 Allotment #132H has 622 FS ac. and a total of 778 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.
RESPONSE: See SDEIS Volume I Chapter 3, page 167 for discussion on VOR methodology. The Forest Service sampled only biologically capable habitat types. Allotment 132H has approximately 610 acres of biologically capable habitat types. The Forest Service used three transects sampled in 2004. The sampling intensity was approximately one transect per 200 acres (See SDEIS Volume II Chapter 3, pages 126 and 129).

D-13.5 – The onlv transects were in 2004. therefore structure objectives are cannot be determined.
RESPONSE: See SDEIS Volume II Chapter 3, page 126 for summary of VOR results.

D-13.6 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #132H is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-2.18.

D-13.7 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-13.8 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-13.9 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.

In Allotment #132H, the FS used the following transects and plots: 3 Robel transects, 1 sere plot, 3 NDSU sample plots, 3 ecoplots, and 1 belt transects. A breakdown of thetransects and plots shows the following:

- 3 Robel transects - all in crested wheatgrass
- 1 sere plots- (2005) in crested wheatgrass
- 4 NDSU sample plots (2008) all in crested wheatgrass
- 3 ecoplots -one in crested, and 2 in native: 1 late seral and 1 mid seral.
- 1 belt transect in crested wheatgrass

RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-13.10 – Seral Stages refer to native plant communities. Using plots located in broken land (crested wheatgrass) or on the edge of broken land, and claiming that a seral stage can be calculated is incorrect. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-13.11 – By removing the all of the plots and transects listed below, that leaves no data to make an assessment of seral stages for the allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-13.12 – Using what is stated above, a determination of whether Allotment #132H is meeting the Plan seral stage objectives cannot be made - meeting plan objectives = "cannot be determined".
In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comments C-3.15, C-3.194, C-3.199, and D-1.7.

D-13.13 – Allotment #132H was authorized by adjusting for cow size even though their initial stocking rate was greater than preference.
RESPONSE: See Response to Comment D-1.7.

D-14 Ken Johnson – Allotment 158

D-14.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-14.2 – The preference number for Allotment #158 is 1632 AMs.

RESPONSE: The MGA provided the Forest Service with a definition of preference number (project record for data). MGA definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 1566 Federal AMs.

D-14.3 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-1.135.

D-14.4 – #158- P. 244 Allotment #158 has 5,138 FS ac. and a total of 6746 acres.
RESPONSE: See the Wildlife specialist report, Appendix B for details concerning VOR data collection and the respective allotment in regards to transects collected in 2004. VOR data is collected only from biologically capable habitat types – not the whole allotment. For Allotment 158, there are approximately 3300 acres of biologically capable habitat types and nine herbaceous dominated transects. This would be a sampling intensity of one transect per 367 acres. An additional transect was located in a shrub habitat type and not included in the data. That would bring the sampling intensity to one transect per 330 acres.

D-14.5 – Placing only 5 transects on the allotment in 2005 = structure cannot be determined.
RESPONSE: The Forest Service collected VOR at the project scale in 2005 to assess the structure distribution across the project area, not at the allotment scale. In 2006 since there was no challenge raised against the 2004 results, no additional VOR data was collected.

D-14.6 – Since 2005 was the year after the drought, it should not be used as a stand-alone year to determine structure. If an allotment doesn't have any reading other than 2004 and 2005, then the structure cannot be determined.
RESPONSE: See Response to Comment C-1.3.

D-14.7 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #158 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-2.16.

D-14.8 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the

vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-14.9 – The degree of variability with the VOR method is approximately 10-20% (average= 15°/o).
RESPONSE: See Response to Comment D-2.19.

D-14.10 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-1.5, C-3.194, and C-3.199.

D-14.11 – In Allotment #158, the FS used the following transects and plots: 7 Robel transects, 1 belt transect, 4 sere plots, and 2 NDSU sample plots. A breakdown of the transects and plots shows the following:

- 3 Robel transect - in Broken land.
- 4 Robel transects- early seral (1) & mid seral (3)
- 1 sere plot (2005) - in Broken land.
- 2 sere plot- in native grass
  One in mid-late seral
- o One in mid seral
- 2 NDSU sample plots (2008) - mid sera!in native grass.
- 1 belt transect - native

Seral Stages refer to native plant communities.
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-14.12 – One sere plots were read in 2005 and two were read in 2006-2008. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." Four NDSU sample plots were read in 2008. The years 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C1.3, C-3.82, C-3.102, and D-2.1.

D-14.13 – By removing the 7 Robel transects and the 1 sere plot in crested wheatgrass from the seral stage analysis, leaves the following:
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-14.14 – The data suggests 3 plots (75%) in mid seral and 1 plot (25%) in late seral. At this point Allotment 158 meets both high and mid structure objectives.

RESPONSE: It is assumed the commentor means "seral" objectives, and the Forest Service agrees the allotment is likely to meet seral stage objectives.

D-14.15 – NFS acres in the allotment are 5,138 ac. The 2 sere plots and 2 NDSU sample plots represent 1285 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: See Response to Comments D-14.14. and D-14.16

D-14.16 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities. The FS cannot determine the seral stages in Allotment 158 because it is not statistically sound and the measurements took place in drought years.
RESPONSE: The Forest Service reviewed Benkobi and Uresk recommendation of one sampling site per 640 acres for a sagebrush habitat type. However, this was more intensive than could be achieved by our workforce. A DPG committee was formed to look at protocols used for sere sampling. The recommendation of the committee was a minimum of one sampling site per allotment, to a maximum of 2 per 640 acres of habitat type be established per allotment.

Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was six.

At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had only completed two of the five upland plots in this allotment, in 2009. The remaining upland plots, with the exception of one, weren't sampled until 2010 and the SDEIS was already released by the time the Forest Service received the data for the remaining two plots. See SDEIS Volume II Chapter 3, pages 218 and 221.

See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-14.17 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-14.18 – In Alternative 4, the FS projects Authorized Use for this allotment would be 1,527 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 1,744 AUMs, a+12% difference from the FS estimate. The effect of setting Authorized Use at the initial stocking rate equates to only a 3 percent reduction in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-14.19 – However, the FS has not proven with their data for Woody Draws and Herbaceous Structure that any adjustment in stocking levels is needed. Seral Stages does meet objectives. Based on what I have written above, Allotment #158 should not receive any adjustment in

preference for either cow size or the FS "initial estimated carrying capacity" until the FS can establish a trend for Woody Draws and Herbaceous Structure.
RESPONSE: See Response to Comments C-3.15, C-3.135, and D-5.32 regarding trends of seral stage and woody draw condition, and SDEIS Volume 1 Chapter 3 pages 169 - 173 for herbaceous structure.

D-15 Ken Johnson – Allotment 249

D-15.1 – The years of*2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-15.2 – The preference number for Allotment #249 is 204 AMs.
RESPONSE: The MGA provided the Forest Service with a definition of preference number (project record for data). MGA definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 204 Federal AMs. The preference listed in Exhibit E (205 AUMs) will need to be corrected and be displayed as 204 Federal AMs. Exhibit E also has a disclaimer on top that states that not all land records have been updated when several commons were broken into private allocation in the 1980's.

D-15.3 – #249- P. 380 Allotment #249 has 622 FS ac. and a total of 622 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = undetermined structure.
RESPONSE: Allotment 249 has approximately 384 acres of biologically capable acres and one transect was read in 2004. See SDEIS Volume II Chapter 3, pages 377 and 380 for VOR readings taken to describe the existing herbaceous structure conditions in Allotment 249.

RESPONSE: See Response to Comment D-2.19.

D-15.4 – The only transects were in 2004. Therefore structure objectives cannot be determined.

RESPONSE: See Response to Comment C-1.3.

D-15.5 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #249 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment C-1.3.

D-15.6 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment D-2.19.

The Wildlife specialist report (pages 52 - 53) discusses the effects of the snow on VOR's. The Forest Service VOR readings in 2005 were to determine the herbaceous structure levels at the project scale, not at an allotment level.

D-15.7 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).

RESPONSE: See Response to Comment D-2.19.

D-15.8 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage.

RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-15.9 – Seral Stages refer to native plant communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-15.10 – One sere plot was read in 2005. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-15.11 – By removing the robel transect and belt transect; this leaves the remaining 1 sere plot in native to make an assessment of seral stage for the entire allotment. The sere plot puts seral; stage at mid-late seral. Accordingly, Allotment #249 would be meeting objectives.
RESPONSE: The single sere plot was at a mid-stage so does not provide a basis for concluding that objectives are met. As stated in the effects analysis, pasture observations indicate a high potential for late seral objectives to be met. However, based on the information relative to plant composition we concluded that the allotment is not meeting objectives.

D-15.12 – NFS acres in the allotment are 622 ac. The 1 sere plots represent 622 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.

The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comment D-14.16.

D-15.13 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.6.

D-15.14 – In Alternative 4, the FS projects Authorized Use for this allotment would be 194 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 216 AUMs, a +10% difference from the FS estimate. The effect of setting Authorized Use at the initial stocking rate equates to only a -8 percent reduction in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-15.15 – Allotment #249 does not have any riparian resources. Allotment# 249 is meeting objectives for woody draws and could be for seral stages. The FS has not proven with their data for Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for Herbaceous Structure and Seral Stages on the allotment, therefore stocking levels should stay at preference or 204 AMs until a trend can be established for Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.15, C-3.135, D-5.32 regarding trends of seral stage and woody draw condition, and SDEIS Volume 1 Chapter 3 pages 169 - 173 for herbaceous structure.

D-16 Devon Kessel – Allotment 244

D-16.1 – Everything should stay the same: the rotation, AM's and length of grazing, except the south boundary fence on pasture 2 should be moved back by Whitetail Road where it originally was.
RESPONSE: Both pastures are comprised of a third or more of broken land/crested wheatgrass with unbroken land containing intermixed invasive and native grasses. The deferred rotation is therefore missing the period of palatability for the significant invasive component every other year in each pasture SDEIS Volume II Chapter 3 page 361. Several other resource objectives are also not met (page 356).

Returning the fence to its original location would have a positive effect on most conditions as described in the effects analysis. However, the segment of Whitetail Creek protected by the present fence line should remain fenced.

D-16.2 – My concerns on the cross fencing and fencing the woody draws are.

Who is going to pay for the materials?

RESPONSE: See Response to Comment D-10.3.

D-16.3 – Who is going to install and maintain the fence?
RESPONSE: The processes of paying, installing, and maintaining the fence, if constructed, would be no different than any other Conservation Practice being conducted currently. The MGA grazing agreement under Rules of Management, M. Required practices and N. Repair and Replacement of Improvements (page 39 - 41) spells out who is responsible for Range Improvements. A decision hasn't been made yet on who would be responsible for cost and maintenance of fencing off woody draws.

D-16.4 – If a cross fence was put in pasture 2 from North to South and the West half only grazed for thirty days maximum, how would the rotation be set up with the east half and pasture 1?
RESPONSE: SDEIS Volume II Chapter 3, page 362 states the following for Alternative 3: "Cross fencing pasture 2 from north to south will create a crested wheatgrass pasture on the eastern side. This pasture will be grazed early to defer grazing of the remaining pastures containing mainly native species. The remaining two pastures would have a deferred rotation system implemented providing the opportunity for initial growth and/or regrowth of existing herbaceous species. This action would also confine/restrict livestock to a smaller area to even out the distribution in the two smaller pastures."

D-16.5 – What is there going to be for water in pasture 2 if it was cross fenced? Whitetail Creek and the dugout don't hold much water. A well should be drilled for fresh water.
RESPONSE: The reservoir in the potential crested wheatgrass pasture should contain sufficient water for early season use and Whitetail Creek has provided sufficient water at present.

D-16.6 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-16.7 – The preference number (or Allotment #244 is 240 AMs.
RESPONSE: The MGA provided the Forest Service with a definition of preference number (project record for data). MGA definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 236 Federal AMs. Allotment 244 also has private land in it. SDEIS Volume II Chapter 3, page 355, Table 244.1 displays only the preference for National Forest System lands.

D-16.8 – Whitetail (2) PFC transects were read in late September of2004 (severe drought year).

RESPONSE: Data indicates 0.26 miles at PFC and 0.51 miles FAR-D.

D-16.9 – Whitetail (3) PFC transects were read in late September of 2004- severe drought year and then again in 2006- moderate drought year.
RESPONSE: A resilient, healthy (properly functioning condition stream) should remain PFC during a drought, flood, etc. That is the rationale for the rating. Many stream reaches were at PFC even when measured during drought (including those in Allotment 244), while adjacent segments under different management were not at PFC.

D-16.10 – Was PFC in 2004/05 and in 1999 surveys, so trend is downward even though overall condition is close to PFC.
RESPONSE: It was at PFC in 1998 but FAR in 2006, so rated at FAR-D (See SDEIS Volume II Chapter 3 page 358).

D-16.11 – The FS does not rate this stream correctly according to the Riparian manual they used. It should rate FAR-U (Functioning at Risk- upward trend). Therefore, Allotment #244- meets riparian objectives.
RESPONSE: If stream was at PFC previously and is now FAR it is a downward trend (see above).

D-16.12 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-16.13 – #244- P. 359 Allotment #244 has 554 FS ac. and a total of 570 acres Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.
RESPONSE: See Response to Comment D-2.16.

See SDEIS Volume I Chapter 3, page 167 for discussion on VOR methodology. The Forest Service sampled only biologically capable habitat types. Allotment 244 has approximately 404 acres of biologically capable habitat types. The Forest Service used one transect sampled in 2004 (See SDEIS Volume II Chapter 3, pages 356 and 359).

D-16.14 – The only transects were in 2004. therefore structure objectives are cannot be determined.
RESPONSE: See SDEIS Volume II Chapter 3, pages 3-460 for 2004 VOR results.

D-16.15 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #244 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment C-1.3.

D-16.16 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-16.17 – The degree of variability with the VOR method is approximately 10-20% (average= 15%).
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, D-2.1, and D-2.19.

D-16.18 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: The Forest Service has reviewed the NDSU data for Allotment 244 and there were no NDSU plots sampled during 2008 or 2009 (See SDEIS Volume II Chapter 3, pages 356 and 359). See also Response to Comments C-3.15, C-3.194, and C-3.199.

D-16.19 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: Of eight sample sites across the project area at a late seral stage, six contained invasive grasses. See Response to Comments C-3.15, C-3.194, and C-3.199.

D-16.20 – The sere plot was read in 2005. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-16.21 – By removing the 1 sere plot in crested wheatgrass, the Robel transect and the belt transect; this leaves no plots to make an assessment of seral stage for the entire allotment in native range.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-16.22 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194 and C-3.199.

Using what is stated above, a determination of whether Allotment #244 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".

RESPONSE: See Response to Comments C-3.15, C-3.135, and D–5.32 regarding trends of seral stage and woody draw condition, SDEIS Volume 1 Chapter 3 pages 169-173 for herbaceous structure, and SDEIS Volume II Chapter 3 page 358 for riparian.

D-16.23 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-16.24 – Allotment #244 has riparian resources that meet objectives. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for woody draws, herbaceous structure and seral stages on the allotment, therefore stocking levels should stay at preference or 240 AMs until a trend can be established for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.15, C-3.135, D-5.32 regarding trends of seral stage and woody draw condition, SDEIS Volume 1 Chapter 3 pages 169 - 173 for herbaceous structure, and Response to Comment D-16.8 and SDEIS Volume II Chapter 3 page 358 for riparian.

D-17 Roger Klym – Allotment 141

D-17.1 – Issues on private allocation:
RESPONSE: In review of the Medora Grazing Association annual permits this allotment is issued an Inventory permit.

D-17.2 – Preference numbers are correct.
RESPONSE: The MGA provided the Forest Service with a definition of preference number. MGA definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 177 Federal AMs. Allotment 141 also has private land in it (see SDEIS Volume II, page 218, Table 141.1), which the DEIS Supplement displays only the preference for National Forest System lands.

D-17.3 – Transects were done for herbaceous structure in 2004, during dry conditions, should be redone.
RESPONSE: See Response to Comment C-1.3.

D-17.4 – FS has no solution for invasive grasses that is a major issue.
RESPONSE: See Response to Comment C-3.82.

D-17.5 – FS states decreasing authorized use by 44% would be ineffective to reverse trend of increasing invasive grasses. This may be a general trend in succession of plant species in a climax community.
RESPONSE: See Response to Comment C-3.82.

D-17.6 – The years of*2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the project area (See SDEIS Volume 1 Chapter 3 pages 111-221 and Response to Comments C-1.3, C-3.102.

D-17.7 – The preference number for Allotment # 141 is 186 AMs. The FS needs to correct the SDEIS and Exhibit E to reflect the preference of 186 AMs.
RESPONSE: See Response to Comment D-17.2.

D-17.8 – #141 - P. 221 Allotment #141 has 311 FS ac. and a total of 435 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = undetermined structure.

2005 0 transects -

2006 0 transects -

The only transects were in 2004. Therefore structure objectives are undetermined.

The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #141 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: Allotment 141 has approximately 289 biologically capable acres with one VOR transect in 2004.

See SDEIS, Volume II, Chapter 3, pages 218 and 221 and SDEIS Volume II Chapter 3, page 460 for 2004 VOR results.

D-17.9 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was w moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-17.10 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).

RESPONSE: See Response to Comment D-2.18.

D-17.11 – The best method to use in determining seral stage was the NDSU data. The SDEIS tries to detem1ine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage. Because seral stage only applies to native plant species, FS cannot measure for seral stage in introduced species pastures.

RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed zero upland plots in this allotment. The NDSU upland plots weren't sampled until 2010 and the SDEIS was already released by the time the Forest Service received the data for the remaining two plots. See SDEIS Volume II Chapter 3, pages 218 and 221. See also Response to Comments C-3.194 and C-3.199.

D-17.12 – Seral Stages refer to native plant communities. Using plots located in broken land (crested wheatgrass) or on the edge of broken land, and claiming that a seral stage can be calculated is incorrect. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-1.194 and C-1.199.

D-17.13 – By removing the following plots and transects listed below, that leaves no data to make an assessment of mid seral for the entire allotment.

1 pace transect in the southwest quarter of pasture 1

1 belt transects in the north half of pasture 3 recorded crested wheatgrass as the dominant species, while a Robel transect in the south half of the pasture recorded bluegrass dominance.

1 sere plot in broken land of pasture 1 was at a mid seral stage with relative dominance of crested wheatgrass, needle-and-thread, and invasive bluegrass.

This is not acceptable according to the protocol for statistical sampling of seral stages. The sample size is too small to make a determination of mid seral for the entire allotment. Seral Stages cannot be accurately predicted for this allotment.
RESPONSE: Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was three.

See also Response to Comments C-1.199, D-14.16, and D-17.11.

D-17.14 – Seral Stage plots were read in 2005-2008. Analysis of any project based on a severe drought years is flawed and should not be used. Seral Stage is confined to native communities. The FS tries to determine seral stage on introduced grasslands site (crested wheatgrass) and include those results (all of which are early seral) as a way to make the North Billings project look like they are not meeting seral stage objectives. The FS produces very biased data along with using the drought.
RESPONSE: See Response to Comments D-14.16, C-1.194 and C-1.199.

D-17.15 – Using what is stated above, a determination of whether Allotment #141 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-17.15 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-18 Kurt Kordon – Allotment 230

D-18.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-18.2 – The preference number for Allotment #230 is 472 AUMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 364 Federal AMs. Allotment 230 also has private land in it. SDEIS Volume II Chapter 3, page 277, Table 230.1 displays only the preference for National Forest System lands.

The commentor is correct that this allotment went from an inventory to a turn-in MGA permit and there is no longer any wintering on NFS lands within this allotment. However, the preference AMs on National Forest System lands would still remain as 364 AMs.

D-18.3 – PFC transects were read in late September of2004 (severe drought year). Total mile of PFC = 0.91 miles- Meeting Plan objectives
RESPONSE: Comment noted.

D-18.4 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS

cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-18.5 – #230- P. 280 Allotment #230 has 881 FS ac. and a total of 1,671 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.
RESPONSE: See Response to Comment D-2.16.

See SDEIS Volume I Chapter 3, page 167 for discussion on VOR methodology. The Forest Service sampled only biologically capable habitat types. Allotment 230 has approximately 677 acres of biologically capable habitat types. The Forest Service used two transects sampled in 2004 (See SDEIS Volume II Chapter 3, pages 279 and 280).

D-18.6 – The only transects were in 2004. therefore structure objectives cannot be determined.
RESPONSE: See SDEIS Volume II Chapter 3, page 278 for 2004 VOR results.

D-18.7 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #230 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment C-1.3.

D-18.8 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-18.9 – The degree of variability with the VOR method is approximately 10- 20o/o (average= 15%).
RESPONSE: See Response to Comment D-2.19.

D-18.10 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-1.5, C-3.194, and C-3.199.

D-18.11 – In Allotment #230, the FS used the following transects and plots: 1 Robel transect, 2 belt transects, 2 sere plots, 2 NDSU sample plots and a repeated pace transect. A breakdown of the transects and plots shows the following:

- 2 Robel transects -native - P. 3
- 2 belt transects- blur grama and western wheatgrass
- 1 sere plots (2005) - native - mid-early seral
- 1 re-measured pace transect
- 1 ecoplot - crested wheatgrass
- 1 NDSU sample plots - in crested wheatgrass. Seral Stages refer to native plant communities.

RESPONSE: See Response to Comments C-1.5, C-1.194, and C-1.199.

D-18.12 – By removing the 2 Robel transects, the 2 belt transects, the 1 re-measured pace transect, the ecoplot and the 1 NDSU sample plots because the last two were in broken land (crested wheatgrass), leaves 1 sere plot in mid-early seral in pasture 1.
RESPONSE: See Response to Comments C-1.5, C-3.194, and C-3.199.

D-18.13 – NFS acres in the allotment are 881 ac. The 1 sere plot represent 881 ac. (but was in only 1 of the 3 pastures. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: Before the Forest Service could complete the recommended sampling density on each allotment, the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was three.

At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had only completed one upland plot in this allotment in 2009. The remaining two upland plots weren't sampled until 2010 and the SDEIS was already released by the time the Forest Service received the data for the remaining two plots. See SDEIS Volume II Chapter 3, pages 278 and 280 - 281. See Response to Comment D-14.16

D-18.14 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-1.5, C-3.194, and C-3.199.

D-18.15 – Using what is stated above, a determination of whether Allotment #230 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined". Summary of resource objectives status
RESPONSE: See Response to Comments C-1.5, C-3.194, and C-3.199.

D-18.16 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-18.17 – Allotment #230's riparian resources meet plan objectives at 100%. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for seral stages on the allotment, therefore stocking levels should stay at preference or 472 AUMs until a trend can be established for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comment C-3.15, C-3.135, and D-5.32 regarding trends of seral stage and woody draw condition, and SDEIS Volume 1 Chapter 3 pages 169 through173 for herbaceous structure.

The proposed level of AU under Alternative 4 would remain well above any level of reported use between 2002 and 2008, not including winter use (Botany specialist report, Part C Appendix F Table F2). The proposed deferred rotation of pasture 2 that is largely comprised of crested wheatgrass would result in poor utilization of this forage during most years and would justify a reduction in AU. A high potential also exists for poor utilization of invasive forage in pasture 3 depending on the season of use.

D-19 Kurt Kordon and Don Stigen – Allotment 140 (The Forest Service combined the responses because the two comments were identical.)

D-19.1 – The 3 year average on your surveys includes a 20% reduction for a severe drought, and included the year after the drought. To do a correct survey, it should be done with a total of 20 years, including a 10 year drought cycle and a 10 year wet cycle.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-19.2 – Your calculations on our AU's are not correct on any of our allotments. They are short.
RESPONSE: The SDEIS and the MGA agreement definitions both identify an AU as a 1,000-pound cow with or without a calf up six months of age. The Forest Service used the MGA grazing association permits. If the numbers of AU's are incorrect it should be discussed with the MGA Board of Directors and the Forest Service.

D-19.3 – Concerning Blacktail Creek, heavy livestock use is not the major problem. On wet years it is not uncommon to have 6-8 feet of water flooding the creek. The results are channeling and scouring of the creek banks.
RESPONSE: The SDEIS Volume II Chapter 3, pages 205 and 207 discuss the existing condition of Blacktail Creek in Allotment 140 and it was rated at PFC and the need for action on page 205 states that the Forest Service wants to maintain PFC.

D-19.4 – Most wooded draws are bad, not because of cow numbers, but because of Dutch Elm disease. New saplings of ash will take years to establish, not in 3 or 4 years.
RESPONSE: American elm comprise relatively small portions of the tree canopy in the project area and many woody draws contain no elm. Regarding the comment of green ash, one has to account for the current lack of saplings and what has been impeding their establishment over the past 30 or more years. The SDEIS Volume I Chapter 3, pages 130 - 145 discusses the factors of existing conditions of Woody Draws including livestock, disease, and insects. The SDEIS Volume II Chapter 3, pages 207 and 208 discusses the

existing condition of the three woody draws sampled within this allotment. See also the Botany specialist report.

D-19.5 – Photos taken on Allotment #256 were taken at the peak of the drought. The trailing shown was done back in the 30's, not recently.
RESPONSE: The Forest Service did take pictures during a drought years 2004. Photographs of trailing on page 397 (SDEIS Volume II Chapter 3) were taken in 2006 and are currently used by livestock heading to water sources. The Forest Service also has pictures from the 1998 and 1999, and 2006 PFC rating effort.

D-19.6 – Fencing of Blacktail Creek will never be feasible because of the rough terrain. It will be next to impossible to keep elk and deer from breaking the fences.
RESPONSE: The SDEIS Volume I Chapter 3, page 206. Table 140.3, does not show any Initial Actions or Adaptive Options of fencing off Blacktail Creek in Allotment 140.

D-19.7 – Pasture #258 is currently on a rotation and a temporary volunteer cut to improve the pasture conditions. This wasn't stated in the plan, and should be followed first.
RESPONSE: The SDEIS Volume II Chapter 3, page 412, first paragraph, sixth sentence displays that the members have taken voluntary reductions in Allotment 258.

D-19.8 – Pastures #288-02, 256-02 and 230-01 are now on a 3 pasture rotation and being a once over. Each pasture is used at different times each year. The pastures have improved already by 60%.
RESPONSE: The Forest Service has no data that supports an improvement of sixty percent in the three Allotments listed. No data has been provided to support the comment.

D-19.9 – Every pasture we have has plenty of high structure in it now. Pasture #140-04 is the exception because of the location soil types and grass types.
RESPONSE: Allotment #140 has approximately 428 acres of biologically capable habitat types and two VOR transects were surveyed in 2004. See SDEIS Volume II Chapter 3, pages 205 for 2004 VOR results for Allotment 140.

D-19.10 – The sharp-tailed grouse are not affected at all by cattle. Too wet or too dry are hard on the hatches. If surveys are done, you would see that there are 4-6 hawks per square mile. That would be detrimental to the young. The hunting season in North Dakota is 4 12 months long. Cut the hunting season down, not the cow numbers.
RESPONSE: The survivorship of young grouse is dependent on many things, including grazing; indirectly through habitat manipulation and directly through trampling of nests. Environmental factors and predation also contribute to individual mortality and population characteristics. However, by providing habitat in sufficient quality and quantity, several of these factors can be alleviated to some degree. For example, increases in herbaceous cover, perhaps the most limiting factor for grouse populations (Vodenhnal et al 2007) provide more secure nesting opportunities, increased escape cover, and improved cover conditions for broods all contributing to potentially increased survivorship and more stable populations.

The Forest Service is not responsible for the regulation of sharp-tailed grouse hunting season management. The responsibility of hunting sharp-tailed grouse in North Dakota is the North Dakota Game and Fish Department.

D-19.11 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-19.12 – The preference number for Allotment# 140 is 368AMs.
RESPONSE: The MGA provided the Forest Service with a definition of preference number (project record for data). MGA definition of Preference number is as follows: "The annual grazing association grazing permit provides a Preference number that is the maximum number of livestock for a given amount of time allocated to that Allotment". In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 281 Federal AMs. Allotment 140 also has private land in it. SDEIS Volume II Chapter 3, page 204, Table 140.1 displays only the preference for National Forest System lands.

D-19.13 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-19.14 – 3. Herbaceous Structure

#140- P. 208 Allotment #140 has 474 FS ac. and a total of 1,096 acres. Placing only 2 transects on the allotment in 2005 = structure cannot be determined.

2005 2 transects - 1.31" and 1.46" = Low Structure
2006 0 transects

The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #140 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: Allotment 140 had approximately 428 acres of biologically capable habitat types two herbaceous dominated transects surveyed in 2004 and 2005.

See SDEIS Volume II Chapter 3, Allotment 140 for 2004 VOR results. See Response to Comment D-2.16.

D-19.15 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-19.16 – 2004 was a severe drought year; it should not be used as a reliable source of data for herbaceous structure.
RESPONSE: See Response to Comments D-2.1.

D-19.17 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.19.

D-19.18 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-19.19 – Seral Stages refer to native plant communities. Using plots and transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-19.20 – One sere plot was read in 2005 in broken land. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." The years 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comment C-3.82.

D-19.21 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities. The FS cannot determine the seral stages in Allotment 140 because all the transects and plots were read in broken land (crested wheatgrass).
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-19.22 – Using what is stated above, a determination of whether Allotment #140 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-19.23 – Summary of resource objectives status

Allotment	Riparian	Woody Draws	Herb.Structure	Seral Stage
#140	Does Meet Objectives	Cannot be Determined	Cannot be Determined	Cannot be Determined

RESPONSE: See Response to Comments C-3.15, C-3.135, and D-5.32.regarding trends of seral stage and woody draw condition, and SDEIS Volume 1 Chapter 3 pages 169 - 173 for herbaceous structure.

D-19.24 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-20 James Lowman – Allotment 130

D-20.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.1.

D-20.2 – Preference Numbers for Allotment #130 are as follows:

- *Preference= 200 hd for 8 months= 1600 AMs*
- Exhibit E, 2009 Grazing Agreement= 833AUMs
- NBSDEIS = 833 AMs

The preference number for Allotment # 130 is 1600 AMs. The FS needs to correct the SDEIS and Exhibit E to reflect the preference of 1600 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 62 AUs for 8 months (496 AMs) with an additional 138 AUs for 1 month (138 AMs) which equals 634 AMs. The Medora Grazing Association grazing association permit also shows additional AMs required for winter grazing since there wasn't enough commensurate property provided for winter needs. Both Exhibit E

and NBSDEIS show the correct AM's for Allotment 130. The commentor is combining Allotments 130 and 302 in which the 200 AUs for 8 months would be correct for both allotments and all lands. Allotment 130 also has private land in it. SDEIS Volume II Chapter 3, page 88, Table 130.1 displays only the preference for National Forest System lands within this allotment.

D-20.3 – Note: In Table 130.2 it shows 27 percent of sampled woody draws are Healthy, 67 percent are At Risk, and 7 percent are Unhealthy. (The 7% should be 6%).
RESPONSE: The Forest Service has reviewed Table 130.2 (SDEIS Volume II Chapter 3, page 89) and the difference in the commentor's percentage of six percent versus the Forest Service seven percent is a rounding of numbers difference.

D-20.4 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-20.5 – #130- P. 92 Allotment #130 has 2,056 FS ac. and a total of 2,875 acres. Placing 0 transects per year on the allotment in 2005 and 2006 herbaceous structure = cannot be determined.
RESPONSE: Allotment 130 has approximately 1345 acres of biologically capable acres and five herbaceous dominated transects read in 2004. See SDEIS Volume II Chapter 3, pages 89 and 92 for VOR readings taken to describe the existing herbaceous structure conditions in Allotment 130.

See Response to Comment D-2.16.

D-20.6 – The only transects were in 2004. therefore structure objectives cannot be determined.
RESPONSE: See SDEIS Volume II Chapter 3, Allotment 130 for 2004 VOR results.

D-20.7 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #130 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-2.19.

D-20.8 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.

RESPONSE: See Response to Comment D-2.19.

The Wildlife specialist report (pages 52 - 53) discusses the effects of the snow on VOR's. The Forest Service VOR readings in 2005 were to determine the herbaceous structure levels at the project scale, not at an allotment level.

D-20.9 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.19.

D-20.10 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-20.11 – Seral Stages refer to native plant communities. Using plots and transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-20.12 – Two sere plots were read in 2005 and the other two between 2006 - 2008. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." The years2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. The FS again biases the data by taking their readings in drought years and then basing reductions off those readings.
RESPONSE: See Response to Comment C-3.82.

D-20.13 – NFS acres in the allotment are 2,056 ac. The 6 plots represent 343 ac. each. Two of the sere plots were taken the year after a severe drought and two were taken during a moderate to severe droughts. The two NDSU sample plots were taken in a severe drought year. Since no trend can be established in for seral stages on Allotment #130. The Plan objective for seral stages is meeting or moving towards Grassland Plan objectives.
RESPONSE: See Response to Comments C-3.15, C-3.82, C-3.194, and C-3.199.

D-20.14 – Using what is stated above, a determination of whether Allotment #130 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: The SDEIS Volume II Chapter 3, pages 92 -94, and pages 97 - 103 shows the existing condition and the effects analysis of Alternatives 3, 3A, and 4.

D-21 Kasey and Qwain Malkowski – Allotment 127

D-21.1 – The study of Forest Service land that was done was a 3 year test and they can't get an accurate test in only 3 yrs. The test needs to be a 5-10 year study due to the many different weather patterns.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.8, C-3.102, C-3.135, and C-3.199.

D-21.2 – The study was done with a 20% reduction on three of the major drought years.
RESPONSE: The Reported Use does not reflect a 20 percent reduction (Botany specialist report, Part C Appendix F Table F2). See Response to Comments C-3.224 and D-4.1.

D-21.3 – My AUM's in 2007 was Federal at 405 AUMs for 8 months. They show 474, which the AUM's would not be correct and· would throw off my test.
RESPONSE: The Forest Service is unsure on what the commentor means by "throw off my test." In 2007, Allotment 127 preference was 69 AUs for 8 months which equals 552 AMs including all lands (Private, State School, and NFS lands). Based on the MGA permit review the Federal AMs were 412, not 405 Federal AMs. In Alternative 4 the Forest Service is adjusting for cow size which 412 AMs times 1.15 AUE equals 474 federal AUMs. Additional adjustment are also need in the MGA grazing association permit since the member acquired 160 acres of NFS lands and has recently changed from an inventory permit to a turn-in permit. Any corrections will be made during the development of the Allotment Management Plan.

D-21.4 – 20% of woody draws are at risk due to lack of adequate regeneration or impacted shrub layer that can be from snow impact, elk, and even lack of sunlight.
RESPONSE: This allotment met woody draw objectives. The SDEIS Volume I Chapter 3, pages 144 and 147 discuss the factors that impact Woody Draws such as livestock, disease, insects, and wildlife. The SDEIS Volume II Chapter 3, pages 207 and 208 discusses the existing condition of the three woody draws sampled within this allotment. Establishment of green ash was also discussed within the SDEIS Volume I Chapter 3, pages 130 - 143. See also the Botany specialist report.

D-21.5 – In years of*2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the NB project area (See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-21.6 – The preference number for Allotment #127 is 552 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 412Federal AMs. Allotment 127 also has private

and State School lands in it. SDEIS Volume II Chapter 3, page 29, Table 127.1 displays only the preference for National Forest System lands. See Response to Comment D-21.4.

D-21.7 – #127- P. 32 Allotment #127 has 1,118 FS ac. and a total of 1,628 acres. Placing 4 transects per year on the allotment= 1 transect for every 295 ac. of FS.
RESPONSE: Allotment 127 has approximately 575 acres of biologically capable acres and three herbaceous dominated transects read in 2004. The Forest Service sampling intensity was one transect per 192 acres. An additional shrub dominant VOR transect was also surveyed in 2004. In 2005 the 2004 transect were re-read. See SDEIS Volume II Chapter 3, pages 30 and 32-33 for VOR readings taken to describe the existing herbaceous structure conditions in Allotment 127.

D-21.8 – The FS states that in 2006, "The IDT determined that there was not enough High structure for the allotment to address the herbaceous structure objectives."
RESPONSE: The 2005 VOR data did demonstrate an improvement in the project area. However, structure monitoring in 2005 was done to assess the project area structure distribution – not the allotment scale as was done in 2004. And the 2006 data was collected by the ID team in a location that they judged to have the best potential for high structure, since this is what was challenged by the member. Despite picking the best locations, no transect was classified as high structure. This is not to say there isn't high structure in locations, but it was the professional judgment of the ID team in the field that there was not enough high structure on the allotment to achieve herbaceous structure objectives. See SDEIS Volume II Chapter 3, page 33, third paragraph on ID team visit in 2006. See Response to Comments D-2.18 and D-9.9.

D-21.9 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed before they were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-21.10 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-21.11 – The best method to use in determining seral stage was the NDSU data. The SDEIS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage. The ecoplot data, the belt transects, and Robel pole transects do not lend themselves to determining seral stage.

RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed zero upland plots in this allotment. The NDSU upland plots weren't sampled until 2010 and the SDEIS was already released by the time the Forest Service received the data for the remaining two plots. See SDEIS Volume II Chapter 3, pages 30 and 33.

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-21.12 – Because seral stage only applies to native plant species, FS cannot measure for seral stage in introduced species pastures.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-21.13 – Removing the 2 Robel transects, the 2 ecoplots, and the 2 belt transects leaves 2 sere plots in native (1 near a reclaimed oil well site on the ridgeline and 1 on the lower south aspect slope in pasture 3) to make an assessment of mid seral for the entire allotment. That would be 2 sere plots are in one pasture, in 1,118 acres ofNFS lands, or 560 ac. per plot. This is not acceptable according to the protocol for statistical sampling of seral stages, especially since they are in the same pasture.
RESPONSE: Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was six.

See Response to Comments C-3.15, C-3.194, C-3.199, D-14.16 and D-21.11 and SDEIS Volume II Chapter 3 page 33 for a discussion of plant composition data available for this allotment.

D-22 Randy Mosser – Allotment 135

D-22.1 – At first look it appears that there is a 20% reduction right away, then, to solve any problems, there would be further reductions. Any future reductions would need public review.
RESPONSE: The SDEIS Volume II Chapter 3, page 189 shows that the initial reduction under Alternative 4 is 13 percent in Authorized Use on Allotment 135; not 20 percent as the commentor is referring too. See SDEIS Volume I Summary, page xii for annual adjustments in authorized use. Adjustments and reduction in authorized use on an allotment can be made without public review by the Forest Service and MGA Board of Directors.

D-22.2 – It does not include other private lands in the allotment that are leased by the Association.
RESPONSE: The MGA annual grazing permit and the MGA Land Record cards have all lands within an allotment. The SDEIS only analyzed NFS lands under the effect analysis of the five alternatives.

D-22.3 – There is not enough water in all the pastures to handle all cattle in one herd. Need to keep the herd split.
RESPONSE: Only Alternative 4 combines the cattle into one herd. The other alternatives, with the exception of Alternative 1, splits the Authorized Use into two herds. In the Adaptive Options of Alternative 3, 3A, and 4 the development of additional water is listed as an option (See SDEIS Volume II Chapter 3, page 173).

D-22.4 – There is no electricity to operate a pipeline system from Pasture 8 to 9 & 10. If a new well is drilled, where would the electricity come from to operate the pipeline?
RESPONSE: Depending on the depth of the well and location of the well, other alternatives of power could be used such as solar, gas or propane generators, and wind.

D-22.5 – Because of rough terrain, it would be near impossible to maintain a riparian area fence, let alone maintaining creek crossings.
RESPONSE: Comment noted.

D-22.6 – Riparian area Aquatic Vegetation are more realistic along streams that have water running in them, year long, like Ash Coulee. Mikes Creek only has water when it rains.
RESPONSE: As documented on the PFC worksheet for reach 1, 2006 (See Project Record Section L Subsection Hydrology): The upland community has a loss of cool-season grasses; poor plant composition; lots of bare ground; increase in species leading to excess runoff and poor water conservation. Roads and culverts are feeding sediment and concentrating water in channel. The channel is down cut with the floodplain inaccessible. The stream is actively downcutting, uplands are degraded and incapable of retarding runoff. The water table has been lost, short-flashy hydro-period, cattle trail in channel looking for places to get out of deep incision, winter grazing concentrates cattle in riparian vegetation. All of these factors contribute to the reason the stream only has water when it rains. It is out of balance with watershed. There are no riparian-wetland plants present.

D-22.7 – Solving a problem on every adaptive management strategy is to reduce livestock numbers.
RESPONSE: Adaptive management includes more than reducing livestock numbers. The SDEIS Volume II Chapter 3, page 173 shows an array of adaptive options for Allotment 135.

D-22.8 – The use of VOR reading of 3.5 after the pasture has been utilized is unattainable and not realistic.
RESPONSE: VOR has been analyzed utilizing past data collection and it has been determined that the sampled habitat types are capable of producing high structure on the LMNG. See project file "warm_2011_biologically_capable_analysis_summdoc" and associated Excel spreadsheet. The data shows that across the Medora RD, over a several year time frame, with varying climatic conditions, and with grazing every year, there has been an average of six percent high structure annually across the district. Appendix B of the NGP states that the "maximum VOR (long-term biological potential) for a particular

site occurs where forage from the last 1 or 2 growing seasons has not been removed by livestock…"

See Response to Comment C-3.153.

D-22.9 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the project area (See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-22.10 – The preference number for Allotment # 135 is 2168 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 1559 Federal AMs. Allotment 135 also has private land in it. SDEIS Volume II Chapter 3, page 171, Table 135.1 displays only the preference for National Forest System lands.

D-22.11 – PFC transects were read in late September of 2004 (severe drought year) and in May 2006 severe moderate drought year.
RESPONSE: Many riparian reaches in the project area were at PFC even when measured during perceived drought years and conditions along Mikes Creek do not appreciably change in response to annual precipitation. A resilient, healthy (properly functioning condition stream) should remain PFC during a drought, flood, etc. That is the rationale for the rating. Stream reaches are monitored on a schedule determined by functionality rating. See SDEIS Volume I Chapter 2, page 57, Table 2.6 Riparian Monitoring Trigger Points.

D-22.12 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #135 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: Allotment 135 has approximately 3,806 acres of biologically capable acres and ten herbaceous dominated transects read in 2004. The Forest Service sampling intensity was one transect per 380 acres. An additional three shrub co-dominant VOR transect were also surveyed in 2004. Since the 3806 acres includes shrub habitat types, the overall sampling intensity would be approximately one transect per 293 acres. See SDEIS Volume II Chapter 3, pages 172 and 177 for VOR readings taken to describe the existing herbaceous structure conditions in Allotment 135.

D-22.13 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October,

before any transects were read. The FS read the transects after the snow storm flattened the vegetation 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-22.14 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-22.15 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.15, C-3.194, C-3.199, and D-21.11.

D-22.16 – Seral Stages refer to native plant communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-22.17 – Two sere plots were read in 2005 and two were read in 2006-2008. The SDEIS states, "Twenty- six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." Four NDSU sample plots were read in 2008. The years 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C-1.3, C-3.82, and C-3.102.

D-22.18 – NFS acres in the allotment are 8718 ac. The 4 sere plots and 4 NDSU sample plots represent 1090 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: See Response to Comments D-14.16, C-3.15, C-3.194, and C-3.199.

Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was eighteen. The Forest Service used twenty six sites to describe the existing condition in Allotment 135.

D-22.19 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities. The FS cannot determine the seral stages in Allotment 135 because it is not statistically sound and the measurements took place in drought years.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.15, C-3.194, and C-3.199.

D-22.20 – Using what is stated above, a determination of whether Allotment #135 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.15, C-3.194, and C-3.199.

D-22.21 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-22.22 – In the SDEIS, four allotments had authorized use set by adjusting Preference for cow size because they were not meeting objectives, even though FS initial estimated carrying capacity on NFS lands was higher than preference, i.e. #129, #131, #135, and #282.
RESPONSE: See Response to Comment C-3.29.

D-22.23 – The FS has not proven with their data for Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. Woody Draw does meet objectives. Based on what I have written above, Allotment #135 should get a 20% increase above preference because the FS "initial estimated carrying capacity" was greater than the allotment preference.
RESPONSE: The initial estimate of carrying capacity did not incorporate the poor distribution of water, topographic constraints, and unsuitable or rarely used rangeland characterized by steep sparsely vegetated south aspects and steep north aspects with dense Rocky Mountain juniper. Extensive little bluestem communities on other north aspect slopes contribute to underutilized forage that should be considered in the estimate of carrying capacity. Current plant production in key use areas is less than the production at reference conditions.

D-23 Randy Mosser, Kurt Kordon, and Mark Kordon – Allotment 256 (The Forest Service combined the responses because the three comments were identical.)

D-23.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the project area. See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-23.2 – The preference number for Allotment #256 is 2,134 AMs.
RESPONSE: Preference for Allotment 256 for all lands is 1783 AMs. Allotment 256 contains approximately 355 acres of private land and 218 acres of State School Land. The MGA's grazing permit lists it as 100 percent NFS Lands. MGA needs to update the grazing permit to reflect the private acres along with the State School land acres and illustrate that 1591 AMs is NFS lands and 192 AMs are from private and State School lands.

D-23.3 – PFC transects were read in late September of 2004 (severe drought year) and 2006 (severe moderate drought) for Blacktail 4.

RESPONSE: See Response to Comment 22.11.

D-23.3 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a utrend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-1.135.

D-23.4 – #256- P. 394 Allotment #256 has 5,586 FS ac. and a total of 6,160 acres.. Placing only 1 transect on the allotment in 2005 = undetermined structure.
RESPONSE: Allotment 256 had approximately 3046 acres of biologically capable habitat types. Seven herbaceous dominated transects were surveyed in 2004.

See Response to Comment D-2.18.

D-23.5 – Placing only 1 transect on the allotment in 2005 = structure cannot be determined.
RESPONSE: See Response to Comment D-23.4 and SDEIS Volume II Chapter 3, page 460 for the 2004 VOR results.

D-23.6 – Since 2005 was the year after the drought, it should not be used as a stand-alone year to determine structure. If an allotment doesn't have any reading other than 2004 and 2005, then the structure cannot be determined.
RESPONSE: See Response to Comment C-1.3.

D-23.7 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #256 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.15, C-3.194, and C-3.199.

D-23.8 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-23.9 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed one upland plot in this allotment. An additional seven NDSU upland plots were sampled until 2010. Leaving three remaining upland plots to be sampled. The SDEIS was already released by the time the

Forest Service received additional data for the 2010 plots sampled. See SDEIS Volume II Chapter 3, pages 389 and 394 - 395.

See also Response to Comments C-3.15, C-3.194, and C-3.199.

D-23.10 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-23.11 – The 2 sere plots in native and the NDSU plot were determined to be in mid seral by the FS. NFS acres in the allotment are 1950 ac. The 3 plots represent 1862 ac. each. This is not acceptable according to the protocol for statistical sampling of seral stages.

RESPONSE: Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was eleven.

See also Response to Comments C-23.9 and D-14.16.

D-23.12 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comment C-23.10.

D-23.13 – Using what is stated above, a determination of whether Allotment #256 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-23.14 – In Alternative 4, the FS projects Authorized Use for this allotment would be 1,678 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 1,848 AUMs, a +9% difference from the FS estimate. The effect of setting Authorized Use at the initial stocking rate equates to only a +1 percent increase in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-24 Bill O'Brien – Allotment 129

D-24.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.

RESPONSE: 2004 was not the primary year for collecting resource data in the project area. See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.82, 3.102.

D-24.2 – Making one PFC assessment in a severe drought year (2004) and another PFC assessment in a moderate drought year (2006) does not make for an accurate assessment of the reach. It would be difficult to determine trend from use.
RESPONSE: See Response to Comment 22.11.

D-24.3 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-24.4 – 3. Herbaceous Structure

Allotment

#129- P. 68 Allotment #129 has 4,915 FS ac. and a total of 5,544 acres. Placing 5 transects per year on the allotment= 1 transect for every 983 ac. ofFS.

2005 5 transects- VOR = 2.19; 1.84; 2.46; 3.49; 4.29: Moderate= 80%; High= 20%
2006 4 transects- VOR = 3.15, 2.95, 2.96, and 4.80 = 75% moderate and 25% high.

Average: 9 transects= 7 moderate, 2 high= 22% high and 78% moderate= Meets Objectives

Transect Results: Low- Below Objectives; Moderate- Meeting Objectives; High- Meeting Objectives
RESPONSE: Allotment 129 had approximately 2910 acres of biologically capable habitat types and seven herbaceous dominated transects in 2004 for an herbaceous sampling intensity of one transect per 416 acres. However, since shrub habitat types are included in the biologically capable total, in 2004 there were an additional three shrub co-dominated transects surveyed for 10 total transects, or a sampling intensity of one transect per 290 acres.

See Response to Comment D-2.18.

D-24.5 – The best method to use in determining seral stage was the NDSU data. The SDEIS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and Robel

pole transects do not lend themselves to determining seral stage.. Because seral stage only applies to native plant species, FS cannot measure for seral stage in introduced species pastures.
RESPONSE: See Response to Comments C-3.15, C-3.194, C-3.199, and D-21.11.

D-24.6 – Seral Stages refer to native plant communities. Using plots located in broken land (crested wheatgrass) or on the edge of broken land, and claiming that a seral stage can be calculated is incorrect. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: The allotment was at or near seral stage objectives, see SDEIS Volume II Chapter 3 page 65, despite invasive grass issues along major drainage corridors.

See Response to Comments C-3.15, C-3.194, and 3.199.

D-24.7 – According to the protocol for statistical sampling of seral stages, the sample size is too small.
RESPONSE: Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was eleven.

See also Response to Comments C-24.6 and D-14.16.

D-24.8 – Seral Stage plots were read in 2005-2008. Analysis of any project based on a severe drought years is flawed and should not be used. Seral Stage is confined to native communities. The FS tries to determine seral stage on introduced grasslands site (crested wheatgrass) and include those results (all of which are early seral) as a way to make the North Billings project look like they are not meeting seral stage objectives. The FS produces very biased data along with using the drought.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, C-3.194, C-3.199, and D-24.6.

D-24.9 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-24.10 – The FS has not proven with their data in Woody Draws and Seral Stages that any adjustment in stocking levels is needed. Riparian does not meet objectives; however, through initial and adaptive actions in Alternative 3 and 4, they are met. Structure objectives are being met for high and moderate structure.
RESPONSE: See Response to Comments C-3.135, C-3.15, C-3.194, and C-3.199.

D-24.11 – In the SDEIS, four allotments had authorized use set by adjusting Preference for cow size because they were not meeting objectives even though FS initial estimated carrying capacity on NFS lands was higher than preference, i.e. #129, #131, #135, and #282.

RESPONSE: See Response to Comment C-3.29.

D-24.12 – In Alternative 4, the FS projects Authorized Use for this allotment would be 1,090 federal AUMs, which was not the initial estimated carrying capacity for the allotment. The initial estimated carrying capacity for the allotment was 1,519 AUMs. However, MGA's independent consultant's initial stocking rate calculation is 1,697 AUMs, a +11% difference from the FS estimate.
RESPONSE: See Response to Comment C-3.93.

D-24.13 – Based on what I have written above, Allotment #129 should get a 35o/o increase above preference because the FS "initial estimated carrying capacity" was greater than the allotment preference.
RESPONSE: See Response to Comment C-3.29.

D-25 Dennis O'Brien – Allotment 131

D-25.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See SDEIS Volume 1 Chapter 3 pages 111-221 and Response to Comments C-1.3, C-3.82, and C-3.102

D-25.2 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-25.3 – 3. Herbaceous Structure

Allotment

#131- P. 109 Allotment #131 has 1,633 FS ac. and a total of 4,162,159 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = undetermined structure.

2005 0 transects-

2006 0 transects-

•The only transects were in 2004. therefore structure objectives cannot be determined.

The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #131 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: Allotment 131 had approximately 880 acres of biologically capable habitat types and three herbaceous dominated transects in 2004 for a sampling intensity of one transect per 293 acres.

See Response to Comment D-2.18.

D-25.4 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3. See also SDEIS Volume I Chapter 3 Pages 169 - 173.

D-25.5 – 2005 was the year after the drought; it should not be used as a standalone year to determine structure. It also had a wet snow storm (2-3") on Oct. 3-4 and once it snows VOR transect readings are done.
RESPONSE: See Response to Comment D-2.18.

D-25.6 – The degree of variability with the VOR method is approximately 10- 20<}(, (average= 15%).
RESPONSE: See Response to Comment D-2.18.

D-25.7 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed three upland plot in this allotment. The remaining two upland plots have not been sampled. See SDEIS Volume II Chapter 3, pages 106 and 109 - 110.

See also Response to Comments C-3.15, C-3.194, and C-3.199.

D-25.8 – One sere plot was read in 2005. The SDEIS states, "Twenty-six sites (sere plots) were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." The years 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. NDSU sample plot data was collected in 2008.

RESPONSE: See Response to Comments C-1.3, C-3.82, and C-3.102.

D-25.9 – By removing the 2 Robel transects and the 2 belt transects from the seral stage analysis, leaves the following:
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-25.10 – NFS acres in the allotment are 1,633 ac. The 5 plots represent 327 ac. each. The sere plot was taken the year after a severe drought and the four NDSU sample plots were taken in a severe drought year. No trend can be established for seral stages on Allotment #131. The Plan objective for seral stages is meeting or moving towards Grassland Plan objectives, and the FS cannot tell what the seral stages are doing.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, C-3.15, C-3.194, C-3.199, and D-25.7.

D-25.11 – Using what is stated above, a determination of whether Allotment #131 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.82, C-3.194, and C-3.199.

D-25.12 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-25.13 – Allotment #131 was authorized by adjusting for cow size and holding the allotment at preference even though their initial stocking rate was greater than preference. Allotment #131 initial stocking rate was 530 AUMs. However, #131 was penalized for not meeting objectives and held at preference, 273 AUMs.
RESPONSE: See Response to Comment C-3.29.

D-25.14 – In Alternative 4, the FS projects Authorized Use for this allotment would be 273 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 632 AUMs, a+132% difference from the FS estimate. The effect of setting Authorized Use at the MGA's initial stocking rate equates to only a 132 percent increase in AMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-25.15 – The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment (reductions) in stocking levels is needed. Based on what I have written above, Allotment #131 should not receive any adjustment (reduction) in preference for either cow size or the FS "initial estimated carrying capacity" until the FS can establish a trend for Woody Draws and Herbaceous Structure.
RESPONSE: See Response to Comments C-3.135, C-3.15, C-3.194, C-3.199, and SDEIS Volume I Chapter 3, page 169 - 173.

D-25.16 – The FS should grant Allotment #131 more than their preference adjusted for cow size, especially since MGA's initial stocking rate is 132% higher than the preference. Stocking for Allotment #131 should be set at 632 AUM's.
RESPONSE: See Response to Comment C-3.29.

D-26 Bill O'Brien and James Lowman – Allotment 302 (The Forest Service combined the responses because the two comments were identical.)

D-26.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See SDEIS Volume 1 Chapter 3 pages 111-221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-26.2 – Preference Numbers for Allotment #302 are as follows:

- Preference= 2,038 AMs:
- James Lowman- 138 hd@ 7 mo.= 966 AMs
- Bill O'Brien- 134 hd@ 8 mo = 1,072 AMs

Total= 2,038 AMs

- Exhibit E, 2009 Grazing Agreement= 1,644 AUMs
- NBSDEIS = 1,044 AMs*

Currently, the common is permitted through each permittee's associated headquarters permit by the MGA.

*The FS needs to correct their Authorized use in the DEIS to 2,038 AM's.

The preference number for Allotment #302 is 2,038 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 138 AUs for 7 months (966 AMs) and additional 134 AUs for 8 month (1,072 AMs) which equals 2,038 AMs. The comment would be correct for all lands within both Allotments 302 and 131. Allotment 302 also has 1,678 acres private land and 467 acres of State School land. SDEIS Volume II Chapter 3, page 609, Table 302.1 displays only the preference for National Forest System lands within this allotment (1,044 Federal AMs). The preference listed in Exhibit E (1,644 AUMs) will need to be corrected and be displayed as 204 Federal AMs. Exhibit E also has a disclaimer on top that states that not all land records have been updated when several commons were broken into private allocation in the 80's.

It should also be noted that according to MGA permits that the two members that run in this allotment are Jim Lowman and Dennis O'Brien, not Bill O'Brien. The 134 head for 8

months are tied to the headquarters, Allotment 131, which under MGA permits is Dennis O'Brien.

D-26.3 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-26.4 – 3. Herbaceous Structure

#302 - P. 613 Allotment #302 has 2,253 FS ac. and a total of 4,398 acres. Placing only 1 transect on the allotment in 2005 = structure cannot be determined.

2005 2 transects- 1.85; 1.76 =Moderate structure

2006 0 transects -

Placing only 1 transect on the allotment in 2005 = structure cannot be determined.

Transects measured in 2005 cannot be used since they were measured after a wet snow storm.

The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #302 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: Allotment 302 had approximately 1688 acres of biologically capable habitat types and six herbaceous dominated transects in 2004.

See also SDEIS Volume II Chapter 3, pages 3-610 for 2004 VOR results and Project Record Section K Wildlife Report, pages 52 - 53. See Response to Comments C-2.14 and D-2.18.

D-26.5 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3. See also SDEIS Volume I Chapter 3 Pages 169 - 173.

D-26.6 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-26.7 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-26.8 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and an ecoplot located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-26.9 – The two sere plots were read in 2005. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. The NDSU sample plots were read in 2008, the most severe drought year of the five (5) years that data was collected.
RESPONSE: See Response to Comments C-1.3, C-3.82, and C-3.102.

D-26.10 – By removing the 7 plots and transects in or adjacent to crested, the Robel transects, the repeated pace transects, the belt transects and the ecoplots; leaves the remaining sere plots in native at mid seral and 2 NDSU sample plots at mid-early and mid seral to make an assessment of seral stage for the entire allotment. The NDSU sample plots were read in 2008, the most severe drought year of the five (5) years that data was collected.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-26.11 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-26.12 – Using what is stated above, a determination of whether Allotment #302 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-26.13 – Allotment #302 does meet riparian resources. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment (reduction) in stocking levels is needed. Therefore, Allotment #302 should not receive any adjustment in preference for either cow size or the FS "initial estimated carrying capacity" until the FS can establish a trend for Woody Draws, Herbaceous Structure and Seral Stages.

RESPONSE: See Response to Comments C-3.135, C-3.15, C-3.194, C-3.199 and SDEIS Volume I Chapter 3, page 169-173.

D-27 Cody Reis – Allotment 243

D-27.1 – When the United States government passed the Resettlement Act in 1935, over 20% of the labor force consisted of the farmer and rancher. At that time, the Act was designed to help low income families struggling through the Great Depression, including those in agriculture fighting to stay afloat while producing commodities with no market. Lands were purchased by the government to help provide economic relief to landowners whose.land was beyond the point of utilization due to the severe drought conditions and the unfortunate mismanagement of the land. This was so in North Dakota. In the Little Missouri region, the drought-ravaged land no longer had the potential to provide adequate grazing to the local ranchers. While many chose to move from the area to find more fertile ground to farm, many others stayed. The sub-marginal lands in our state were acquired by the government with the intent to help bring the land back to the potential it once had. It was also the intent of the U.S. Government to lease the land back to the farmers and ranchers who had stayed in the area.
RESPONSE: Comment noted.

D-27.2 – In 1937, and after the passage of the Bankhead-Jones Farm Tenant Act, local ranchers in Billings County, ND, formed the Medora Grazing Association. By forming this group, the members felt they could do a better job of managing the federal grazing lands together rather than individually. It was the initial group effort that proves the ranchers wanted to be sure the grazing lands were utilized and managed properly.
RESPONSE: See Response to Comment C-3.43.

D-27.3 – Forward two decades later, the Department of Agriculture reviewed the utilization of the federal lands. This eventually led to the designation of the National Grasslands, which includes, of course, the Little Missouri National Grasslands here in ND.
RESPONSE: Comment noted.

D-27.4 – It is this history of the administration of the National Grasslands that is significant-the original foundation. These National Grasslands were set up to be administered by the Department of Agriculture under the "provisions and purposes of title III of the Bankhead-Jones Farm Tenant Act," by which these lands "shall be administered under sound and progressive principles of land conservation and multiple use, and to promote the development of grassland agriculture and sustained-yield management of the forage, fish and wildlife, timber, water and recreational resources in the areas of which the National Grasslands are a part." <36 CFR 213.1(c)>
RESPONSE: See Response to Comments C-3.42 and C-3.43.

D-27.5 – As members of the Medora Grazing Association, we are fourth generation ranchers who have utilized and managed our federal allotment since it was established. That is over 70 years of managing rangeland and forage with the MGA and USFS, as well as on our own private lands. We believe a little history and experience goes a long way.

RESPONSE: Comment noted.

D-27.6 – We disagree with how the range and forage studies were handled. The study utilized a short window of three years, during a drought year and drought recovery for that matter, and we do not consider it to be true and fair study of the land and its condition and potential. The third-party study of the rangelands provided by NDSU was an acceptable supplement to aid in the management of the Grasslands, yet most of the information was disregarded. The information was indeed provided to the USFS in a timely manner. In many instances in the plan, the data from the NDSU study is referred to as "not compatible" because of "differing objectives, design criteria, and methodologies." We strongly feel the information provided by NDSU; a land-grant agriculture university right here in ND, should not have been disregarded, and rather used alongside the USFS data to look at the range health and condition as a whole. The more science and data available should result in a better outcome in planning. Apparently, if the scientific research and data from another entity does not match the "objectives" and outcomes the USPS are looking for, then the data is discarded.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-1.8, and C-3.102.

D-27.7 – The MGA, USFS and NDSU are cooperating agencies. Utilizing this study should be priority in the same matter the research from the USPS is. The NDSU study is still providing us with data, but as usual, USFS policy must be implemented before the science can ever be completed. We disagree with the USFS assessment of Visual Obstruction Reading (VOR).. The NDSU science has shown that only three to five percent of the grasslands can meet the high structure standard that the USFS believes is possible.

The effects of rainfall are also questionable, mainly referring to what is reported in the area versus what really falls in the allotment alone. In other words, it rained at the ranch, but 1/2 - mile down the road it is bone dry, and vice-versa. Who is to say where the rain fell according to the weather data and does coincide to the specific plots that were studied. One end of the pasture might have received a rain shower with a-inch downpour, while the other end missed out.
RESPONSE: See SDEIS Volume I Chapter 3, pages 176 - 177. In addition, whereas the NDSU study referenced above does not address this continuing controversy, the Forest Service has recently entered into a cooperative agreement with NDSU to assess this issue of biologically capable, which began as a two-year study in 2012. However, this is expected to be part of an on-going monitoring program (Chapter 4 Grasslands Plan).

See Response to Comments C-1.2, C-1.3, C-1.8, and C-3.102.

D-27.8 – Our allotment contains "woody draws" that have seen the devastating effects of tree disease such as Dutch Elm disease. The grassland studies were done when many of the trees had succumbed to disease and age. The health of the woody draws has been affected by many factors, not just the grazing of cattle alone. Seeing our cattle grazing in our allotment, we recognize the areas of concentration. The specific woody draw of concern is utilized there is no question. However, our cattle have never found it in area to concentrate in heavily. As ranchers, we would know as we see our cattle almost every day. We have other areas of woody

draws on our ranch, some not grazed and some grazed in completely different seasons than the federal allotment, and some of them are also showing a decline in health.
RESPONSE: See Response to Comment C-3.12.

D-27.9 – The noxious weed analysis for our allotment indicates there are no known state-listed noxious weeds or county-listed weeds within the allotment. There is no way this can be a true analysis when we as operators have had to spray noxious weeds on an annual basis or have had the county weed control come in to spray and control the weeds. During the mid-1990's, we made a request to change our grazing rotation in our allotment to winter grazing. This was done in order to manage burdock in our allotment, which proved to be a successful "adaptive management" measure.

In regards to the Sharp-tailed grouse population and management, grazing alone is not the main factor affecting bird populations. In 70+ years, four generations have witnessed the growth and decline of many wildlife species, on federal and private lands, which has been affected by many factors, including predators or lack thereof, amount of grasses in relation to rainfall, and severity of winters. Any alternative of this plan as we see will not have any great impact, positive or negative, on wildlife.
RESPONSE: The Forest Service has reviewed the noxious weed database through 2012 and found that in 2008 Billings County Weed Board had sprayed one location of Canada thistle on NFS land within Allotment 243. The commentor is correct that there are noxious weeds within the allotment. Noxious weeds were eliminated from detailed study in the North Billings Project.

See also Response to Comment D-19.10 and SDEIS, Volume I, Chapter 1, pages 28 - 29.

D-27.10 – The history of these lands is grassland agriculture. We are now at a point in time when roughly 2% of the labor force in the United States consists of farmers and ranchers. It is this 2% that keeps the history of agriculture alive in the United States. It is this 2% that feeds our country and the world. It is this 2% that has big shoes to fill yet fights a hard battle over how we do our job.
RESPONSE: See Response to Comment C-1.19.

D-27.11 – Billings County is not a heavily populated region. Farming and ranching is of great significance, both economically and historically. Generation after generation has made the commitment to a lifestyle of production agriculture. We share half of Billings County with the federal government. That is a lot of acreage. For over 70 years, the government has worked with the local ranchers to utilize and manage the grasslands. As time has gone on, the number of farming and ranching operations has declined, yet the producers that remain continue on by operating on a larger and even more efficient scale. Economic effects of grazing cuts are recognized more than just in dollars lost by the rancher. It is the impact felt by families leaving. When we lose population, it affects our schools, businesses, and even the number of people available who are willing to volunteer in their community, including rural fire department and EMS volunteers. It is the increase in government responsibility and expense of managing the lands for weeds, fire management (whether prevention, suppression, or controlled burning), and

range health. In a time of economic hardship, when our country has no extra money to spend, we cannot afford to compromise the balance that can be made through the grazing of the grasslands
RESPONSE: See Response to Comment C-1.19.

D-27.12 – The DEIS takes into consideration in the economic analyses that 25 of the ranches (out of 49) in the project area have 100 or fewer head of cattle, "Suggesting that less than 90% of all ranch revenue comes from cow-calf operations on many of the ranches." Ever think to consider that we have had a younger population move back into the northern Billings County area? Some of these "100 or fewer head" ranches are the makings of bigger operations. It takes years to build a herd. The costs involved are huge. You just don't buy land, equipment, and 300 head of cows and start a ranch. Yes, some of these smaller ranches do have a supplemental "off ranch" income, but in many instances it is the only way to survive the ever rising operating costs let alone just afford health insurance. We know these people. They are our neighbors. Small cuts to smaller operations do not allow for growth and expansion. A smaller herd size does not mean a definite reduction in fixed expenses either. You still have to maintain the same land, produce the same forage/hay/crop, maintain the same buildings, fences, equipment, and pay off the same debt. And with the ever rising costs of inputs, expenses do not fluctuate as much as the prices for our commodities.
RESPONSE: See Response to Comment C-1.19.

D-27.13 – The 1800s are long gone. We cannot go back to the wide open prairies, the buffalo, the wildfires, the free and open and "completely" native rangeland. For Pete's sake, even the land in the National Park was farmed at one time, no different than some of the grasslands that were reseeded. You cannot change that! It is part of the past, whether it is seen as right or wrong, but it is part of the past. Get rid of the American population, then yes, maybe this is possible. But we are a populated nation, one that needs food and fuel and is willing to trade and share these benefits with.other countries. We have come a long ways in how we utilize the land in production agriculture. We do so much more with a lot less land and resources and labor. Cattle are in general larger in size, but they have also become more efficient. Supplemental feed helps cattle utilize their forages better, which in turn helps the range land. It may take energy to produce cattle for beef, but think of the energy that the consumed product provides. We can have well-managed and well-utilized grasslands by working together as we have in the past, and we can continue to strive to achieve the best condition of our federal lands for all uses.
RESPONSE: See Response to Comments C-1.19, D-1.7, D-2.9, and D-2.10.

D-27.14 – As stated by Allan T. Thompson, third generation of our ranch to utilize our federal permit, "The United States was originally created as a republic. Over the years, we have become more and more democratized. The proposed grasslands management plan is a case in point. Many individuals that have no personal or financial interest in the Grasslands and have not seen and most likely will never see the Grasslands manage to develop strong opinions of these lands based on emotions. These emotions are fueled by well-financed campaigns by conservationists, preservationists, and animal rights organizations among others. A number of people, a continually shrinking minority, derive their livelihood within the Grasslands-be it ranching, oil, recreation-and are being demonized as rich, greedy, wantonly destroying the planet, et cetera.

Those of us that live and work within the Grasslands are finding the deck heavily stacked against us. Our voices have become a whisper among a very vocal majority, and in turn the decision making that affects our livelihood moves away from the people with their boots on the ground to those within the Washington Beltway."
RESPONSE: See Response to Comment C-1.19.

D-27.15 – Most anyone who ranches cares deeply for the land they use, as without it they have nothing to support the cattle they raise. We as members of the MGA have always been willing to find ways to promote the health of the federal grasslands we utilize. What else should we be expected to do at this point?
RESPONSE: See Response to Comment C-1.19.

D-27.16 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the NBEIS project area. See SDEIS Volume 1 Chapter 3 pages 111-221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-27.17 – Currently, this allotment is issued an inventory permit for 175 head for 8 months by the MGA. With this type of permit there is a potential of livestock being on NFS lands for the entire year, not just the typical May 1st to December 31st.
RESPONSE: In further review of the MGA permits for Allotment 243, this allotment changed from an inventory permit (350 head for 8 months) in 1989 to a private allocation turn-in MGA permit. The preference number of 375 AMs is correct for this allotment.

In review of the comment of the allotment being an inventory permit for 175 head for 8 months is not consistent with MGA permits for this allotment. Review of MGA permits back to the 1970s this allotment has never been permitted these numbers.

D-27.18 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-27.19 – #243- P. 319 Allotment #243 has 792 FS ac. and a total of 1,880 acres Placing 0 transects per year on the allotment in 2005 and 2006 = undetermined structure.
RESPONSE: See SDEIS Volume I Chapter 3, page 167 for discussion on VOR methodology. The Forest Service sampled only biologically capable habitat types.

Allotment 243 has approximately 716 acres of biologically capable habitat types. The Forest Service used three transects sampled in 2004. (See SDEIS Volume II Chapter 3, pages 344 and 246).

D-27.20 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #243 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives = "cannot be determined".
RESPONSE: See Response to Comment D-2.16.

D-27.21 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation.2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.18.

D-27.22 – 2004 was a severe drought year; it should not be used as a reliable source of data for herbaceous structure.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.18.

D-27.23 – The degree of variability with the VOR method is approximately 10-20% (average= 15%).
RESPONSE: See Response to Comment D-2.18.

D-27.24 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed two upland plots in this allotment, and an additional two NDSU upland plots were sampled in 2010. The SDEIS was already released by the time the Forest Service received additional data for the 2010 plots sampled. See SDEIS Volume II Chapter 3, pages 344 and 346 - 347.

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-27.25 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-27.26 – One sere plot was read in 2005 and the other between 2006-2008. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year. The FS again biases the data by taking their readings in drought years and then basing reductions off those readings.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-27.27 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194 and C-3.199.

D-27.28 – Using what is stated above, a determination of whether Allotment #243 is meeting the Plan seral stage objectives cannot be made -meeting plan objectives = "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-27.29 – Using in the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-27.30 – Using Allotment #243 does not have any riparian resources. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for woody draws, herbaceous structure and seral stages on the allotment, therefore stocking levels should stay at preference or 375 AMs until a trend can be established for Woody Draws and Seral Stages.
RESPONSE: See Response to Comments C-3.1 and C-3.2.

D-28 Clint Ridl – Allotment 283

D-28.1 – The structure of the grasslands in allotments 283 and 301 has greatly recovered since the last survey.
RESPONSE: The Forest Service has no data to support or refute the comment.

D-28.2 – With reduced grazing, uncontrolled structure can also increase life threatening fire hazards.
RESPONSE: The Forest Service has considered the fire hazard under the Cumulative Effects Past and Present Action, See SDEIS Volume I Chapter 3, page 219.

D-28.3 – Based on the above points, the preferred alternative action plan for reductions for cow size and carry capacity reduction on grassland pasture and grazed forest land are misguided and will pose an unnecessary hardship and diminish the security of grazing privileges.
RESPONSE: See Response to Comments C-1.2 and C-1.19.

D-28.4 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a

severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.2, C-1.3, C-3.82, C-3.102, and D-2.12.

D-28.5 – The preference number for Allotment #283 is 344 AUMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 300 Federal AMs. Allotment 283 also has private land in it (See DEIS Volume II Chapter 3, page 503, Table 283.1), which the DEIS displays only the preference for National Forest System lands.

D-28.6 – #283- P. 506 Allotment #283 has 1,048 FS ac. and a total of 2,791 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.
RESPONSE: Allotment 283 had approximately 588 acres of biologically capable habitat types and two herbaceous dominated transects surveyed in 2004. See also SDEIS Volume II Chapter 3, pages 504 and 506.

D-28.7 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #283 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-28.6.

D-28.8 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-28.9 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-28.10 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.

RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed two upland plots in this allotment. See SDEIS Volume II Chapter 3, pages 504 and 507 - 508.

See also Response to Comments C-3.15, C-3.194, and C-3.199.

D-28.11 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-28.12 – By removing the 2 NDSU sample plots in crested wheatgrass, the 2 robel transects and 3 belt transects and the 1 sere plot in crested wheatgrass; this leaves no transects to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-28.13 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-28.14 – Using what is stated above, a determination of whether Allotment #283 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-28.15 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-28.16 – In Alternative 4, the FS projects Authorized Use for this allotment would be 340 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 391 AUMs, a+13% difference from the FS estimate. The effect of setting Authorized Use at the initial stocking rate equates to only a+13 percent increase in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-29 David Rodakowski – Allotment 133

D-29.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the

implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the project area. See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-29.2 – The preference number for Allotment# 133 is 272 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 272 Federal AMs. Allotment 133 also has private land in it (see SDEIS Volume II Chapter 3, page 138, Table 133.1), which displays only the preference for National Forest System lands.

D-29.3 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #133 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.
RESPONSE: See Response to Comment D-2.18.

D-29.4 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-29.5 – The only transects were in 2004. therefore structure objectives cannot be determined.
RESPONSE: See Response to Comment C-1.3.

D-29.6 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #133is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: Allotment 133 had approximately 328 acres of biologically capable habitat types and two herbaceous dominated transects surveyed in 2004 (SDEIS Volume I Chapter 3, page 138).

D-29.7 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation.2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-29.8 – The degree of variability with the VOR method is approximately 10-20% (average= 15%).
RESPONSE: See Response to Comment D-2.18.

D-29.9 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed zero upland plots in this allotment. The NDSU upland plots weren't sampled until 2010 and the SDEIS was already released by the time the Forest Service received the data for three upland plots. See SDEIS Volume II Chapter 3, pages 138 and 141 - 142.

See Response to Comments C-3.82, C-3.194, and C-3.199.

D-29.10 – Seral Stages refer to native plant communities. Using plots and transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-29.11 – One sere plot was read in 2005. The SDEIS states, "Twenty-six sites were sampled in the project area from 2006 through 2008 and another 9 sites were sampled during 2009 and 2010." The years 2006, 2007 and 2008 were drought years, with 2008 being a severe drought year.
RESPONSE: See Response to Comments C-1.3, C-3.82, and C-3.102.

D-29.12 – By removing the 2 Robel transect, and the 1 belt transects from the seral stage analysis, leaves the following:
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-29.13 – The Plan objective for seral stages is meeting or moving towards Grassland Plan objectives in native communities. Using what is stated above, a determination of whether Allotment #133 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-29.14 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-29.15 – The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. Riparian does meet objectives. Stocking levels should stay at preference or 313 AUMs adjusting for cow size.
RESPONSE: See Response to Comments C-3.135, C-3.15, C-3.194, and C-3.199 and SDEIS Volume I Chapter 3, page 169-173.

D-30 David Rodakowski – Allotment 286

D-30.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-82, and C-3.102.

D-30.2 – The preference number for Allotment #286 is 278 AUMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 278 Federal AMs. Allotment 286 also has private land.

D-30.3 – The FS measured PFC for Betsy Creek in 2004, which was a severe drought year. The measurement of FAR-NA on 0.72 mi. of the Creek during a severe drought year should have been re-measured in 2005.
RESPONSE: See Response to Comment D-22.11 and SDEIS Volume I Chapter 2, page 57, Table 2.6 Riparian Monitoring Trigger Points.

D-30.4 – It is expected that desired conditions on Betsy Creek would be achieved in 10 to 15 years. Allotment #286 does not meet Plan objectives for riparian. However, it is doubtful that reductions will achieve Plan objectives for Besty Creek. Treating clubmoss is not a livestock issue. Therefore, the reductions being imposed by the FS under Alternative 4 are not justified.
RESPONSE: Clubmoss develops in pastures that have been affected by excessive defoliation (grazing) and/or extended drought where defoliation has not been adjusted to current plant production (NRCS 2012). As stated by the Hydrologist, stocking level reductions are not likely to achieve riparian improvements, but creation of a riparian or woody draw exclosure was evaluated to improve riparian conditions within 10-15 years (SDEIS Volume II Chapter 3 pages 524 and 527. Livestock reductions were proposed to contribute to a variety of resource issues besides riparian conditions.

D-30.5 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions

cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-30.6 – Placing only 1 transect on the allotment in 2005 = structure cannot be determined
RESPONSE: Allotment 286 had approximately 456 acres of biologically capable habitat types and one herbaceous dominated transect surveyed in 2004. See also Grasslands Plan, page 1-11, Guideline 13.

D-30.7 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #286 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-30.5.

D-30.8 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3 and SDEIS Volume I Chapter 3, pages 169 - 173.

D-30.9 – The degree of variability with the VOR method is approximately 10 - 20% (average = 15%).
RESPONSE: See Response to Comment D-2.18.

D-30.10 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed zero upland plots in this allotment. The NDSU upland plots weren't sampled until 2010 and the SDEIS was already released by the time the Forest Service received the data for three upland plots. See SDEIS Volume II Chapter 3, pages 516 and 519 - 520.

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-30.11 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.

RESPONSE: Late Seral Stages are achievable in Native-Invaded (2.1) and Broken Land Grass States (5-2.1) (Botany Report Part A, Page 22).

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-30.12 – By removing the all the plots and transects in or adjacent to crested, the robel transect and 2 repeated pace transects; there are no remaining plots to make an assessment of seral stage for the entire allotment.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-30.13 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, C-3.199, and D-30.10.

D-30.14 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-30.15 – Allotment #286 this amounted to a 26°/o reduction below preference, 344 AMs. The FS states on page 514, SDEIS, Chapter 3, part 2:
RESPONSE: The preference is 278 Federal AMs for Allotment 286, see SDEIS Volume II Chapter 3, page 526.

D-30.16 – The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for Woody Draws, Herbaceous Structure and Seral Stages on the allotment, therefore stocking levels should stay at preference or 278 AMs until a trend can be established for Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.135, C-3.15, C-3.194, C-3.199, and SDEIS Volume I Chapter 3, page 169 - 173.

D-31 Don Stigen – Allotment 221

D-31.1 – One of the years used to study the pasture was 2004; the year 2004 was so dry that we were unable to make hay bales at home. I traveled all the way to Glasgow, MT to bale hay artd'to purchase the hay. In 2005, I was only able to make about 50 hay bales because of it being another drought year whereas on a normal year I can make about 2,000 hay bales.
RESPONSE: See Response to Comment C-1.3.

D-31.2 – In the years 2004 and 2005 there never was grass in the hay fields in the high structure stage.
RESPONSE: See Response to Comments C-1.2 and C-1.3.

D-31.3 – During the year such as 2005, a drought year the yearlings were never replaced with cow/calf pairs.
RESPONSE: See Response to Comments C-1.3 and D-2.1.

D-31.4 – When the Forest Service was selling land to even the acres with the Ebert's land purchased, they documented and declared this allotment to be suitable for farming, how can they now justify a 30% herd reduction requested now?
RESPONSE: Suitability for farming does not mean current stocking levels are appropriate for achieving resource objectives. See Response to Comment D-2.1.

D-31.5 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See Response to Comments C-1.3, C-3.82, C-3.102, and D-2.1.

D-31.6 – The preference number (or Allotment #221 is 280 AMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 246 Federal AMs. Allotment 221 also has private land (See SDEIS Volume II Chapter 3, page 263, Table 221.1), which the SDEIS displays only the preference for National Forest System lands.

D-31.7 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #221 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.
RESPONSE: See Response to Comment D-2.18.

D-31.8 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-31.9 – #221- P. 267 Allotment #221 has 403 FS ac. and a total of 1,123 acres. Placing only 1 transect on the allotment in 2005 =structure cannot be determined.
RESPONSE: Allotment 221 had approximately 395 acres of biologically capable habitat types and one herbaceous dominated transects was surveyed by the Forest Service in 2004 (See SDEIS Volume II Chapter 3, pages 256 and 258).

D-31.10 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #221 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment 31.9.

D-31.11 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-31.12 – The degree of variability with the VOR method is approximately 10-20% (average= 15%).
RESPONSE: See Response to Comment D-2.1.

D-31.13 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-31.14 – Seral Stages refer to native plant communities. By removing the 1 Robel transect, the 2 belt transects, the 2 sere plots and the 1 NDSU sample plots because they are all in broken land (crested wheatgrass), leaves 1 NDSU sample plot in an Invaded Grass State.
RESPONSE: See Response to Comments C-3.194 and C-3.199.

D-31.15 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-31.16 – Using what is stated above, a determination of whether Allotment #221 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: The collective field data strongly supports the conclusion that the allotment does not meet plant composition objectives due to the abundance and increase of invasive grasses that represent an undesired condition. See Response to Comment C-3.15 and SDEIS Volume II Chapter 3 pages 270 - 275

D-31.17 – #221 None Present Cannot be Determined Cannot be Determined Cannot be Determined
RESPONSE: See Response to Comments C-3.15 and C-3.135 and SDEIS Volume 1 Chapter 3 pages 169 -173.

D-31.18 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-31.19 – Allotment #221 has no riparian resources. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for seral stages on the allotment, therefore stocking levels should stay at preference or 246 AMs until a trend can be established for both Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.15 and C-3.135 and SDEIS Volume 1 Chapter 3 pages 169- 173.

D-32 Cody Tachenko – Allotment 239

D-32.1 – After reading the proposal, it makes no sense to reduce the number of head for our allotment (#239). We have been careful not to over graze this pasture in good years or in poor years. With the early grazing, we've been able to control the crested wheat grass, but the Kentucky blue grass seems to get away. It appears to me we need to increase the head to control these invasive grass. I wish the FS would make some recommendations for the grass this year (2011).
RESPONSE: See Response to Comment C-3.82 and Botany Report Part A pages 64 - 67 and 122 - 123.

D-32.2 – The years of *2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-82, and C-3.102.

D-32.3 – The preference number [or Allotment :#239 is 252 A,UMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 250 Federal AMs. Allotment 239 also has private land in it. See SDEIS Volume II Chapter 3, page 301, Table 239.1, which displays only the preference for National Forest System lands.

D-32.4 – Listed below are the four main resource objectives that the SDEIS identifies for Allotment #239 that will be used to make reductions. An analysis of each is provided as far as meeting or not meeting objective.
RESPONSE: See Response to Comment D-2.18.

D-32.5 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-32.6 – #239 - P. 304 Allotment #239 has 484 FS ac. and a total of 641 acres. Placing only 1 transect on the allotment in 2005 = structure cannot be determined.
RESPONSE: Allotment 239 had approximately 427 acres (389 herbaceous HTs) of biologically capable habitat types and one herbaceous dominated transects surveyed in 2004.

2005-1 transect- 2.28" =moderate structure

D-32.7 – 2006-0 transects - Visual observation indicated the allotment was addressing herbaceous structure objectives. No definition provided for what "addressing herbaceous structure objectives" actually means.
RESPONSE: See SDEIS Volume II Chapter 3, page 304, second paragraph. The ID team assessed the allotment on the site in September of 2006 and, via a visual assessment and rough mapping, determined that at least 20 percent of the allotment was meeting high structure objectives and that it was assumed that the other two categories were at, or near, the structure objectives for the Grasslands Plan.

D-32.8 – One randomly placed VOR transect was measured in the fall of2004 in the Low structure class. However, an ID team field visit in September 2006 determined through a visual assessment that the allotment was addressing herbaceous structure objectives. The High structure was being provided primarily through the presence of Kentucky bluegrass which is common throughout the allotment.
RESPONSE: The 2004 data was focused on the allotment scale and was "challenged." In 2006, members of the ID team visited specific allotments where there may have been internal or external disagreements on the 2004 results. See Response to Comment D-32.7 and Herbaceous Structure, SDEIS Volume II Chapter 3, page 304, Herbaceous Structure.

D-32.9 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #239 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-2.18.

D-32.10 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a

standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3 and SDEIS Volume I Chapter 3, page 169 - 173.

D-32.10 – The degree of variability with the VOR method is approximately 10-20% (average= 15%).
RESPONSE: See Response to Comment D-2.18.

D-32.11 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt transects, and robel pole transects do not lend themselves to determining seral stage.
RESPONSE: At the release of the SDEIS the Forest Service had only received vegetative data for 2008 and 2009 from NDSU. NDSU had completed three upland plots in this allotment. See SDEIS Volume II Chapter 3, pages 302 and 304 - 305.

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-32.12 – Seral Stages refer to native plant communities.
RESPONSE: Late Seral Stages are achievable in Native-Invaded (2.1) and Broken Land Grass States (5-2.1) (Botany Report Part A Page 22).

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-32.13 – Using what is stated above, a determination of whether Allotment #239 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-32.14 – Implementing a deferred rotation starting May 1st would allow livestock to concentrate on the crested wheatgrass and Kentucky bluegrass, which are range ready early in the grazing season. However, native herbaceous species that are not typically range-ready until June 1st would be negatively affected by this early turnout. Grazing native rangeland prior to range readiness would be the most costly alternative, with both economical losses (in most cases) and reductions in production associated with physical damage to the plants). Vermeire et al. (2008) also concluded that there was an increased prominence of annual C3 grasses and cacti, which indicates that considerable potential exists for shifting species composition with annual grazing before June.

RESPONSE: The paper of Manske and Sedivec (1999) deals with management strategies for native grass communities and have little bearing on a pasture largely transitioned to an Invaded Grass State Even with native grass communities, there is recent evidence that early season grazing is not as detrimental as once thought if grazing is removed sufficiently early in the season (Briske et al 2011). The paper by Vermeire et al (2008) deals more with adverse effects observed on sites of spring calving and hay feeding.

See Response to Comments D-32.1, C-3.15, C-3.82, C-3.201, and C-3.208 and SDEIS Volume II Chapter 3 pages 310 and 313.

D-32.15 – Allotment #239 does not have any riparian resources. The FS has not proven with their data for Woody Draws, Herbaceous Structure and Seral Stages that any adjustment in stocking levels is needed. The FS has not established a trend for seral stages on the allotment, therefore stocking levels should stay at preference or 250 AUMs until a trend can be established for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.15, C-3.135, C-3.194, C-3.199 and SDEIS Volume I Chapter 3, pages 169 - 173.

D-33 Joe Vesey – Allotment 289

D-33.1 – In addition to relying on data that was taken during drought years, as already mentioned in the comments below, the FS is not taking into consideration the historical use of the allotment. Allotment 289 has been grazed by cattle for the past 25+ years, but historically it was a horse ranch. Species composition and diversity should be expected to be different based on this history and not enough historical data is presented to determine if the allotment is tending toward a more desirable mix of species.
RESPONSE: There is no indication from the collected plant composition data that plant composition and diversity are different on this allotment compared to other allotments in the same geographic area, ecological sites etc.

See Response to Comments C-1.2 and C-3.102.

D-33.2 – The FS is pushing cow size and the fact that cattle are tending to be larger on average than they were when permits were first issued for grazing federal lands, however, they have forgotten that ranchers are also feeding their cattle supplemental feeds throughout the winter. It would be almost impossible to find an operation in this area that is relying on winter grazing to keep their cattle alive. An average operation is probably feeding close to 20# of hay or other supplements a day during the winter months, and in many cases more, especially during the past few winters when snow has been too deep to utilize winter grazing in most cases.
RESPONSE: See Response to Comment D-1.7.

D-33.3 – This plan does not address invasive species, as they are covered in another plan, however, invasive species are contributing to the health of the woody draws. In many cases it is not necessarily solely cattle that are keeping regeneration from occurring in the woody draws, but the presence of numerous noxious weeds that are out-competing saplings. (The best

examples are Canada thistle and burdock.) In addition, the adult trees are in a less that healthy state because of a combination of factors including drought years, several late spring hard freezes, fall freezing rain, and insect damage. It is unfair to assume that removing grazing from these draws would allow any significant improvements to occur without other outside influences also being required.
RESPONSE: There are several Healthy woody draws in the allotment located adjacent to Unhealthy draws, with the primary difference involving site accessibility and presence of livestock use.

A direct threat from noxious weeds on woody regeneration was not noted during field surveys, and most less than Healthy sites were not overwhelmed by noxious weeds. Collateral effects from herbicide spraying were evaluated as a greater threat to woody regeneration than the weeds themselves (Botany specialist report Part A, page 38).

The Forest Service weed inventory indicated that there is approximately 18 acres of Canada thistle and burdock (See SDEIS Volume II Chapter 3, page 559). The SDEIS Volume I Chapter 1, pages 28 - 29 also explains why the noxious weed issue was dropped from further consideration in this analysis. The Forest Service also goes into factors affecting existing condition of woody draws within the SDEIS Volume I Chapter 3, pages 144 - 147, which includes climate effects on woody draws. See Response to Comments C-3.12 and C-3.102.

D-33.4 – On page 557 the table states that Scairt Woman "flows through the allotment", but Scairt Woman is not a perennial stream. It only flows when there is a runoff event. In addition, 2.1 miles of Scairt Woman is listed as PFC and 0.2 miles of Scairt Woman is listed as NF due to the "area is without beavers". There is a set of corresponding pictures on page 448 in the write-up for Allotment 277 (figures 277.1 and 277.2) showing these two areas. We question where these pictures were taken, as we have never seen any beaver activity in Scairt Woman in this allotment and have never seen standing water in Scairt Woman unless a major runoff event occurred.
RESPONSE: See Project Record Section L Subsection Hydrology Supporting Documentations, Field notes from 2006 Scairt Woman Draw.

D-33.5 – The years of*2004, 2007 and 2008 were classified as severe drought years (50-75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The FS uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the project area. See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-82, and C-3.102.

D-33.6 – The preference number for Allotment #289 is 2,000 AMs.

RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 1,789 Federal AMs. Allotment 289 also has private land in it (see SDEIS Volume II Chapter 3, page 556, Table 289.1), which the SDEIS displays only the preference for National Forest System lands.

D-33.7 – PFC transects were read in late September of2006 (severe moderate drought year).
RESPONSE: Comment noted. More than 90 percent of the riparian segments in this allotment were at PFC.

D-33.8 – PFC Total miles of NF = 0.22 miles - NF
RESPONSE: See Response to Comment D-33.7.

D-33.9 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #289 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment C-3.135.

D-33.10 – #289- P. 560 Allotment #289 has 4,636 FS ac. and a total of 6,929 acres. Placing only 1 transect on the allotment in 2005 = structure cannot be determined.
RESPONSE: Allotment 289 had approximately 3000 acres of biologically capable habitat types and nine herbaceous dominated transects and one shrub co-dominated transect surveyed in 2004. See SDEIS Volume II Chapter 3, pages 557 and 561.

D-33.11 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation. 2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

Guidelines for determining herbaceous structure for each allotment are given below:

D-33.12 – 2004 was a severe drought year; it should not be used as a reliable source of data for herbaceous structure.
RESPONSE: See Response to Comment C-1.3.

D-33.13 – 2005 was the year after the drought; it should not be used as a standalone year to determine structure. It also had a wet snow storm (2-3") on Oct. 3-4 and once it snows VOR transect readings are done.
RESPONSE: See Response to Comment C-1.3. See also SDEIS Volume I Chapter 3 Pages 169 - 173.

D-33.14 – The guidelines listed below were used to recalculate herbaceous structure objectives. Using the guidelines a determination of whether Allotment #289 is meeting the Plan herbaceous structure objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comment D-33.10.

D-33.15 – The degree of variability with the VOR method is approximately 10 - 20% (average =15%).
RESPONSE: See Response to Comment D-2.1.

D-33.16 – Seral Stages refer to native plant communities. Using sere plots, NDSU sample plot, and other transects located in broken land (crested wheatgrass) and claiming that a seral stage can be calculated is not correct. Since any seral stage protocol will count introduced and invasive grasses against late seral, a late seral determination can never be made on these site.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-33.17 – By removing the 2 transects in or adjacent to crested, the Robel transects and the belt transect; this leaves the remaining 2 sere plots in native and the 7 NDSU sample plots to make an assessment of seral stage for the entire allotment. The FS states of ten sample sites, nine were at mid seral stages and one was at a late seral stage. However, the data above indicates that there were only 9 sample sites, and of those 1 was at mid-early seral, 7 were at mid seral and 1 was at late-mid seral. According to the data there were no late seral plots.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-33.18 – NFS acres in the allotment are 4.636 ac. The 9 plots represent 515 ac. each. The NDSU plots were read during the most severe drought year, 2008 (57% of normal). These plots are part of a baseline study conducted by NDSU. The 2008 NDSU baseline data plots should not be used in determining seral stage without data from above average years. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was ten. The Forest Service used ten sites to describe the existing condition in Allotment 289.

See Response to Comments C-1.3, C-3.15, C-3.82, C-3.102, C-3.194, and C-3.199.

D-33.19 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comment D-33.16.

D-33.20 – Using what is stated above, a determination of whether Allotment #289 is meeting the Plan seral stage objectives cannot be made- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-33.21 – In Allotment #289, the FS used the following transects and plots: 8 Robel transect, 2 sere plots, 7 NDSU sample plots and 1 belt transect. A breakdown of the transects and plots shows the following.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-33.22 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-33.23 – In Alternative 4, the FS projects Authorized Use for this allotment would be 1,862 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 1,929 AUMs, a +3% difference from the FS estimate. The effect of setting Authorized Use at MGA's initial stocking rate calculation equates to only a -6 percent reduction in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-34 Tim Wyse – Allotment 237

D-34.1 – The years of *2004, 2007 and 2008 were classified as severe drought years (50- 75% of normal). 2006 was classified as moderate drought year, although only 2% away from being a severe drought year. The·ps uses 2004 as their baseline year for many of the resource objectives. Using a severe drought year as a baseline biases all of the data collected and the implications used from interpreting that data. The data collected during these five years should not be used to make any adjustments in stocking levels.
RESPONSE: 2004 was not the primary year for collecting resource data in the NBEIS project area. See SDEIS Volume 1 Chapter 3 pages 111 - 221 and Response to Comments C-1.3, C-3.82, and C-3.102.

D-34.2 – The preference number for Allotment #237 is 296 AUMs.
RESPONSE: In review of the Medora Grazing Association grazing association permits the preference for this allotment is listed as 288 Federal AMs. Allotment 237 also has private land in it (see SDEIS Volume II Chapter 3, page 290, Table 237.1) which displays only the preference for National Forest System lands.

D-34.3 – The rating system outlined in the NBSDEIS used to assess Woody Draws is Healthy, At Risk, and Unhealthy. Since "At Risk" and "Unhealthy" are not assigned a "trend" they cannot be used as moving toward meeting Plan objectives. Since no trend can be assigned, then the FS cannot tell if either one of those ratings is "moving" toward objective. Therefore, reductions cannot be given if the FS cannot assess movement of those 2 categories until they are monitored again and long term trend is established.
RESPONSE: See Response to Comment C-3.135.

D-34.4 – 3. Herbaceous Structure

#237- P. 293 Allotment #237 has 721 FS ac. and a total of 758 acres. Placing 0 transects per year on the allotment in 2005 and 2006 = structure cannot be determined.

2005 0 transects –

2006 0 transects -

The only transects were in 2004. therefore structure objectives cannot be determined.
RESPONSE: Allotment 237 had approximately 462 acres of biologically capable habitat types and two herbaceous dominated transects surveyed in 2004.

See SDEIS Volume II Chapter 3, page 460 for 2004 VOR results.

D-34.5 – In each allotment, transect information is given for 2004, 2005, and 2006. Since 2004 was a severe drought year, it should not be used as a reliable source of data for herbaceous structure. Any transects measured in 2005 are not usable since it snowed in early October, before any transects were read. The FS read the transects after the snow storm flattened the vegetation.2005 was also the year after the severe drought and it should not be used as a standalone year to determine structure. 2006 was a moderate drought year and also should not be used to determine structure along with 2004 and 2005.
RESPONSE: See Response to Comment C-1.3.

D-34.6 – Visual observations in 2006 are not sufficient to make a determination of structure in this case where reductions are determined from the observation.
RESPONSE: See Response to Comments D-2.16 and D-2.17.

D-34.7 – The best method to use in defining seral stage was the NDSU data. The FS tries to determine seral stages on the NDSU introduced sample plots, but these need to be discarded. The Sere Plot data is good for determining seral stages, but only for the native sites. All "Broken Land" plots should be discarded also. The ecoplot data, the belt
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-34.8 – Seral Stages refer to native plant communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-34.9 – By removing the 2 Robel transects, and the 1 belt transect, leaves 1 sere plot in mid seral and 1Sere plot in an Invaded Grass State for Allotment #237.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-34.10 – NFS acres in the allotment are 721 ac. The 1 sere plot (2005) at mid seral represents 721 ac. (but was in only 1 of the 3 pastures. This is not acceptable according to the protocol for statistical sampling of seral stages.
RESPONSE: Before the Forest Service completed the recommended sampling density on each allotment the MGA, NDSU, and Forest Service entered into an agreement for

monitoring. In review of NDSU recommendations the density of plots suggested for this allotment was three.

See Response to Comments C-3.15, C-3.194, and C-3.199.

D-34.11 – The Plan objective for seral stages is "meeting or moving towards Grassland Plan objectives" in native communities.
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-34.12 – Using what is stated above, a determination of whether Allotment #237 is meeting the Plan seral stage obj-ectives cannot be made-"- meeting plan objectives= "cannot be determined".
RESPONSE: See Response to Comments C-3.15, C-3.194, and C-3.199.

D-34.13 – In the FS Preferred Alternative, Alternative 4, the FS proposes to make two (2) immediate reductions in livestock numbers. The reductions are for cow size, making adjustments for 1200 lb. cows and the FS "initial estimated carrying capacity".
RESPONSE: See Response to Comment D-1.7.

D-34.14 – In Alternative 4, the FS projects Authorized Use for this allotment would be 250 federal AUMs, which is the initial estimated carrying capacity for the allotment. However, MGA's independent consultant's initial stocking rate calculation is 272 AUMs, a +8% difference from the FS estimate. The effect of setting Authorized Use at the initial stocking rate equates to only an -18 percent reduction in AUMs from existing Authorized Use.
RESPONSE: See Response to Comment C-3.93.

D-34.15 – The FS has not established a trend for Woody Draws, Herbaceous Structure and Seral Stages on the allotment, therefore stocking levels should stay at preference or 296 AUMs until a trend can be established for Woody Draws, Herbaceous Structure and Seral Stages.
RESPONSE: See Response to Comments C-3.135, C-3.15, C-3.194, C-3.199, and SDEIS Volume I Chapter 3, pages 169 -173.

E – North Dakota Chapter of The Wildlife Society

E-1 - This letter is in regard to the Northern Billings County Allotment Management Plan Revisions. Over the years the North Dakota Chapter of The Wildlife Society, along with several other conservation organizations, have played an important role in reviewing US Forest Service management plans for the Little Missouri National Grasslands. After having reviewed the North Billings Allotment Management Plan Revisions, we would like to commend your field staff for the extensive effort they put into the analysis. As a result of their efforts we strongly support preferred alternative 4, which considers the strengths and weaknesses of past management on each allotments, and accounts for changes in forage demands with increases in cow size (animal weight) over time.

We would also like to thank you in advance for your consideration of our comments expressed above and offer our cooperation on dealing with other important resource management issues. If you have additional questions, please feel free to give me a call (701-253-6483).
RESPONSE: Comment noted.

F – North Dakota Department of Health

F-1 - Our comments remain the same as those in our June 3, 2008 letter to you (copy attached). If you have any questions regarding our comments, please feel free to contact this office.
RESPONSE: Comment noted.

G – North Dakota Department of Trust Lands

This is a letter to comment and provide input into the Supplemental Draft Environmental Impact Statement for the North Billings County Allotment Management Plan Revisions (DEIS). The North Dakota Department of Trust Lands recommends adoption of either of the Alternatives #3 or #3A.

G-1 - 1. Alternative #4 uses the Natural Resource Conservation Service (N.R.C.S.) initial stocking rates as the stocking rate for the grazing allotments. It is not appropriate to use the N.R.C.S. initial stocking rate guidelines to set the stocking rates for the National Grasslands where there is an abundance of actual stocking rate data and ecological data. The N.R.C.S. initial stocking rate data is also for continuous season long use and a "general rule of thumb" is that these rates may be 20% low if a planned grazing system is used. The DEIS states on page 87 that "An assumption made in this calculation is season-long grazing, which could weight the formula towards a lighter carrying capacity." Implementing the N.R.C.S. initial stocking rates would negate the value of the information from the current stocking rates and then require a decade or more of ecological monitoring to determine the effect of these changes.
RESPONSE: The NRCS initial stocking rates from their National Range and Pasture Handbook were not used as a basis for Authorized Use in Alternative 4. Please refer to the Carrying Capacity discussion (SDEIS Volume I Chapter 3, pages 86 - 89) for more information on how Alternative 4's Authorized Use was determined. However, there is not an abundance of actual stocking rate data for the project area as is discussed in the Actual Use section (SDEIS Volume I Chapter 3, pages 94 - 95). Additionally, a comparison of current ecological data with levels of Authorized Use indicated by the permit information supplied by MGA supports the adjustment of Authorized Use.

Current studies and literature do not support the often held assumption of grazing systems providing 20 percent greater stocking levels compared to season-long use, particularly in semi -arid regions and while trying to achieve a range of resource objectives rather than just maximizing livestock production (Brisk et al 2011, Holechek et al 1999). Other assumptions of the initial estimated carrying capacity calculation have a high potential to contribute to an over-estimate, such as equal utilization of all existing forage, and plant composition and production approximating the historic climax community.

G-2 – 2. Alternatives #3 and #3A use the current preference stocking rates as the starting point for management of the subject allotments. Decades of grazing history and the results which can be measured on the ground are the best indicator of what to expect from the current gazing management. There may be adjustments needed in some areas to obtain the desired management objectives and this can best be done by starting with the current stocking rates and adjusting as necessary. It is more efficient and less disruptive to the economy to start from a known point in management and work on individual goals and objectives from there.
RESPONSE: See Response to Comments C-3.15 and C-3.135. The result of decades of grazing history on the ground were measured and were the basis of existing conditions and expected changes or lack thereof in conditions from proposed management under each alternative. Stocking rates are not necessarily the primary or first point of management that needs adjustment to work towards resource objectives in several allotments, but adjustments from the starting point of current levels of Authorized Use are warranted in other allotments.

G-3 – 3. Adaptive management is a flexible and logical way to approach land management. It allows for a more "nimble" system that can react to the changing circumstances as they occur. We agree that the N.E.P.A. methodology as practiced in the past invites destructive controversy and stagnation. However, adaptive management needs to be practiced within sideboards that protect the interests of stakeholders from impulsive reactions to ephemeral social issues. The most effective way to do this is to guarantee that stocking rates would not be changed, except for drought, in any time period less than 5 years. It is well documented that it requires at least 5 or more years to effect a change in rangeland herbaceous vegetation that would result in a change in seral state. Even 5 years may not show any more than the beginning of a trend and the seral changes may not be stabilized for 10 – 15 years or more. If the first 5 years are in a drought situation, then 5 years is certainly not enough time to determine trend.

Ranchers need some certainty in stocking rates, changing stocking rates in any time period less than 5 years does not make ecological sense based on the science. Data collected from a study on state school trust land shows that on the more xeric sandy sites even 10 years is insufficient produce the desired seral changes. Ranchers need some stability in stocking rates and ecologically, such guarantees are appropriate and should be written into any management plan. The plan as proposed does not recognize the time required for change to occur nor the time required for ecological stability in a grassland plant community.
RESPONSE: See Response to Comments C-1.19, C-3.15, and C-3.135. The existing condition described in the SDEIS for each key issue came about because of current management. There is no reason to presume that continuation of current management will result in a change in existing conditions. Several grazing management tools are proposed under the initial and adaptive actions for Alternatives 3, 3A, and 4. However when Authorized Use adjustments are proposed, two design criteria have been proposed as well to address the commentor's concern (see SDEIS Volume I Chapter 2, Table 2.4 pages 48 and 49). The Forest Service recognizes that some Grasslands Plan objectives may require more time, thus the description of monitoring and trigger points (see SDEIS Volume I

Chapter 2, pages 53 - 61). Additionally, the Grasslands Plan itself recognizes this potential when the objectives are worded as "meet or move towards".

G-4 – 4. The DEIS states that grazing would be deferred to June 1st each year or until the 3 ½ leaf stage on native grasses. While this was a valid guideline in the past it needs to be carefully reconsidered under the current situation where the State is experiencing a rapid expansion of Kentucky bluegrass. Deferring grazing until June 1st may simply encourage expansion of Kentucky bluegrass while light early season grazing before June 1st can reduce its vigor and perhaps inhibit invasion. Kentucky bluegrass has forced the science of grassland ecology to reconsider the past June 1st grazing rule of thumb in North Dakota. Cattle will preferentially graze Kentucky bluegrass early in the year and they are an effective and perhaps the only economically viable tool to blunt its expansion.
RESPONSE: The Design Criteria that the commentor mentions is applicable for native pastures. The Forest Service recognizes that for those pastures where invasive grasses such as Kentucky bluegrass are nearing the threshold to transition to an Invaded Grass State additional management will be required to address this plant composition concern. Reviews of pertinent data (Briske et al 2011) seem to indicate that early season use in itself is not as detrimental as staying on the pasture throughout the early growth phases and into the summer months. However, it is not certain that early season grazing in heavily infested pastures or those that have transitioned to an Invaded Grass State need to be stocked lightly.

Additional literature such as Sedivec (2006), Sedivec (2010), Hanson et al. (2010), and Smart et al. (2010) report the following: In review of Sedivec's presentations, Dr. Sedivec refers to taking advantage of the forage value of Kentucky bluegrass by early season grazing. Hanson's and Smart's abstracts are looking at burning and clipping as control methods for Kentucky bluegrass in the northern tall grass prairie. Hanson's conclusion is that spring burning and intensive weekly clipping in May were effective tools to reduce invasive cool-season grass, however, further research is needed to evaluate multi-year effects to determine optimal treatment efficacy. Smart's conclusion is that data indicate that cool season grasses can be inhibited by a variety of early season treatments, but selection needs to be carefully chosen to get the greatest desired impacts. In both Hanson's and Smart's abstracts clipping was used instead of actual livestock grazing and both abstracts do not talk about the economic viability of treatments.

G-5 – 5. As a general philosophy, range management has focused on more uniform use across the landscape. Fencing, livestock water developments and supplemental feeding have been used to encourage uniformity on the landscape. This management would be expected to result in more uniform seral states except in "sacrifice areas" and in non-use areas. Decades of management for more uniform grazing distribution has had the desired effect as shown by 72% of the planning area being rated in a mid seral stage. Only recently has the U.S. Forest Service begun to use Vegetative Obstruction Readings (V.O.R.) and seral stage as management goals. While we mention these two goals in the same sentence, we recognize that they are not the same thing and achieving a high V.O.R. reading is not synonymous with late seral stage. Because these are new management objectives in contrast to decades of promoting more uniform

grazing distributions, it is necessary that any changes to accomplish these goals be done logical and objective manner as opposed to simply implementing the N.R.C.S. initial stocking rates as proposed in Alternative #4 (see discussion in bullet point #1). Regardless, we continue to maintain that V.O.R. is not an appropriate measure of management success or failure on the National Grasslands. In our comment letter to the Northern Great Plains Planning Team on January 22, 2002, page 4 we stated in part that "The State Land department has not changed our position from our February 1, 2000 letter, that **VOR readings should not be used as a standard for adjusting livestock stocking rates."**
RESPONSE: Herbaceous structure, as measured by the VOR method, is not a "standard for adjusting livestock stocking rates". It is a tool to help assess whether we are meeting Plan Goals and Objectives for a diversity of structure for wildlife habitats and vegetative conditions.

G-6 – The DEIS has set an aggressive goal for V.O.R. readings that if implemented as written could very well result in large reductions in stocking rates. The structural vegetative goals at 3 year intervals do not account for the rate of ecological change that can be reasonably expected or the vagaries of weather.
RESPONSE: The Draft ROD for the North Billings project includes the following frequency for structure monitoring: "annually for 3 years on a quarter of the allotments where I feel structure is of greatest concern, and then the monitoring interval will be reevaluated to determine whether the current monitoring frequency should be maintained or changed. A percentage of the remaining allotments will be monitored each year over the next 3 years so at the end of that timeframe all of these allotments will have been monitored." A three year interval was selected to partially capture weather variability and develop trend, but also to allow for a more realistic annual monitoring workload. Under adaptive management the trigger points identify a potential need to convene an ID team to look at the data, in the context of weather, rate of change evident in the data, etc. prior to giving the decision maker a recommendation on whether to make adjustments, or if more information is required. Refer to Response to Comment M-1.

G-7 – 6. As a side bar, page xi in the summary states that the current condition is 7% early seral stage, 72% mid seral stage and 5% late seral stage for a total of 84% of the landscape. The remaining 16% is tame grass. It is unclear if the seral stage goals on this same page are expected to total to 84% as shown above for the current condition or if they are expected to total 100%. This needs to be clarified.
RESPONSE: Sixteen percent of sites were at an Invaded Grass State as defined by the NRCS, not just comprised of "tame" grass or consisting of broken land/crested wheatgrass. In some cases, Kentucky bluegrass and other invasive grasses had invaded the broken land/crested wheatgrass sites and resulted in the classification of an Invaded Grass State. With the 16 percent of sites excluded from the analysis, the proportion of early, mid, and late seral stages was 8 percent, 86 percent, and 6 percent, respectively.

G-8 – 7. Page 24 of Chapter 1 states that " There is a concern that a combination of the expansion of invasive grass species and current grazing strategies is adversely affecting the desired mosaic of seral stages and maintenance of native plant communities." It is incorrect to

lump current grazing strategies and the expansion of invasive grass species as a common management issue. It is well documented that expansion of invasive grass species is exacerbated by light grazing and the lack of grazing. Perhaps the only economic tool available to curb the expansion of invasive grass species is grazing by domestic livestock. Grazing is scientifically recognized as a solution and not the problem. It is not correct to state that "a combination of the expansion of invasive grass species and current grazing strategies" are the problem. Invasive grass species are the ecological problem and planned grazing is the ecological solution or at least one tool in our tool chest but certainly not part of the problem. Perhaps the intent was to say that "…**both** the expansion of invasive grass species and current grazing strategies is adversely affecting the desired mosaic of seral stages and maintenance of native plant communities." However, even this statement would incorrectly lump the problem of invasive grasses with grazing which is an activity important to the management and maintenance of native grasslands in the National Grasslands. This statement would also imply that all of the current grazing strategies are at fault.
RESPONSE: The project area documents moderate to high grazing levels with increasing invasive grasses. Current grazing strategies are not adapting to the existing forage base that is increasingly comprised of invasive grasses in several allotments. Current state and transition models, statements by Sedivec (2006), and comments in point #4 above indicate that grazing seasons should be shifted to the early months in order to target efficient use and potential control of Kentucky bluegrass.

Current grazing management is adding to the problem through basic principles of selective utilization of more palatable native components that results in greater than expected utilization than might occur across a pasture with homogenous plant composition. Annual introduction of invasive grass hay in several allotments is also a grazing management activity that adds to, and in some cases has had the potential to initiate the problem. As indicated in ecological site discussions, heavy late season or chronic season-long grazing contribute to the problem. Improved or prescribed grazing management, along with prescribed burning, hold the greatest promise of controlling invasive grasses.

G-9 – 8. The DEIS gives passing notice that the intent is to continue grazing on the National Grasslands but does not recognize the importance of grazing to maintaining healthy grassland ecosystems. There is no such thing as a pristine ecology in a grasslands system devoid of the impacts of man. Perhaps such a thing existed before the advent of occupation by Indians but certainly for the past 11,000 years grassland systems have been manipulated by people. Even before then they were manipulated by grazing animals as clearly shown by the evolution of grazing tolerant species. The current state in a long history of use by both man and grazing animals is the ranching economy and culture of western North Dakota. This is a culture and economy worth protecting and encouraging. An economically strong and viable ranching economy in the National Grasslands provides the currently most "natural" ecological system and also reduces the management costs for Federal Government. Certainly spending $646,826 on implementing structural improvements under alternatives #3A is a small cost to keep managers on the land.
RESPONSE: We fully recognize the importance of grazing in maintaining healthy grassland ecosystems. We are also committed to meeting the goals and objectives outlined

in the Grasslands Plan including supporting the economy and custom and culture of Western North Dakota.

G-10 – 9. The Department of Trust Lands manages lands in the area included in the DEIS. These lands were given by congress to the State of North Dakota at Statehood solely to support the schools of North Dakota and 12 other trusts for public institutions. These lands can be managed wisely to maintain and improve their ecological condition while providing the income to the trust funds that Congress intended. These lands are often surrounded by lands managed by the U.S. Forest Service and management of Forest Service lands will have a direct impact on trust lands. In the economic impact analysis, it should be considered that reducing the economic viability of the ranching industry will also impact the congressional mandate for these lands to produce income for the schools of North Dakota.
RESPONSE: We agree that maintaining and improving the ecological conditions of these lands is important and will provide for long term sustainability and economic viability of ranching operations, and providing continued income generated from the Department of Trust Lands in the analysis area.

H – North Dakota Game and Fish Department

Once again we wish to thank your planning team for the professionalism and effort they have put into the development of the SDEIS. A great deal of field work and data synthesis is reflected in the SDEIS. We also want to thank your planning team for sharing their expertise and making themselves available to answer questions.

H-1 - The SDEIS is large, covering a complex topic. Overall it is well organized and contains of broad array of relevant material. One problem may be that given it covers 43 allotments, the SDEIS simply covers too many allotments making it difficult to sort out the specific actions proposed at the allotment level. This is something you may want to consider in future planning.

In general, shortfalls in the planning to date appear often attributable to where the proposal or analysis deviates from the Dakota Prairie Grasslands Plan or the Northern Great Plains FEIS which supports it.

In this light, we again would like to use this opportunity to encourage the Dakota Prairie Grasslands to follow the Grassland Plan. Of the five existing alternatives, we continue to support Alternative 4. Alternative 4 addresses livestock grazing by attempting to examine carrying capacity and livestock size. While both are addressed in an incomplete manner, we have repeatedly indicated that incorporating these fundamental concepts into the decision-making process is needed and overdue. In favoring Alternative 4, we've also noted your discussions regarding the projected effects of Alternatives 2, 3, and 3A on grassland structure, composition, sharp- tailed grouse habitat, riparian areas, and woody draws. Consequently, we are glad to see that Alternative 4 has emerged as the preferred alternative over the other alternatives.

RESPONSE: The Forest Service believes that the North Billings project is consistent with the Grasslands Plan.

H-2 - This is not to say we are unilaterally supportive of Alternative 4. Improvements are needed to provide additional resource improvement; and, as noted above, changes are needed to reach consistency with the Grasslands Plan.

The impacts associated with some proposed actions such as timing conflicts have not been given sufficient consideration. We would like to see these kinds of shortfalls corrected before a final decision is made.

In addition, the selection and successful implementation of Alternative 4 is heavily, dependent upon future monitoring. Over the last 15 years the Dakota Prairie Grasslands has greatly expanded its data collection efforts on the Grasslands. Outside interest in monitoring has expanded as well. Implementing adaptive management will require an even greater commitment from the District. We believe that the District must fully commit in terms of money and staff to insure this monitoring gets done.
RESPONSE: Refer to the Draft ROD for proposed monitoring timeframes (p. 13-14 and Appendix B, Allotment Decision Tables).

In terms of organization, we have arranged most of our specific comments under the topics of flexibility, monitoring, range, and key issue. Towards the end of our letter we have enclosed a table with additional recommendations regarding some of the allotment specific actions identified in Alternative 4.

Flexibility

H-3 - Flexibility is a constant and subtle theme threaded throughout the SDEIS; however it does not appear that the current actions proposed in the SDEIS embrace the full range of flexibility needed to achieve goals and objectives of the Grassland Plan. Implicitly, the aims of individual operators in terms of stock choice or grazing system have been addressed. Flexibility to meet the demands of drought is addressed in part. However, a number of important other considerations have been addressed to lesser degree.

Our specific concerns relate to how the current proposal addresses grassland structure, hardwood draws, invasive species (an important component of the discussions relating to seral state), and some big game species.

Some of the proposed grazing management tools adversely affect resources in specific areas by failing fail to move the area toward meeting the Grassland Plan and allowing current trends to continue. Other tools may actually shift the status quo and move parts of the planning area away from the direction set in the Grassland Plan. And some management tools such as grazing timing considerations prescribed fire and rest need simply more attention.

RESPONSE: The effects of each alternative on the respective resources is outlined in the SDEIS Volume I Chapter 3 and under each allotment in the SDEIS Volume II Chapter 3. Appendix D – Grazing Management Toolbox provides general impacts from the tools.

H-4 - A few examples in the latter case include the following -- Vegetation sampling on the District including longer term trend data indicates that Kentucky bluegrass is on the rise in portions of the project area. In our last letter we recommended that science melded with adaptive management was needed to address this particular concern. Given the apparent upswing in Kentucky bluegrass we would like to underscore the importance of this recommendation. Another overlooked tool is prescribed burning which could be used to limit the spread of Rocky Mountain juniper, enhance wildlife habitat, improve grazing opportunities, or curtail Kentucky bluegrass expansion. Palatability and seasonal livestock grazing preference issues between invasive grasses and native species need more consideration. Site specific discussions of back to back rest or back to back light grazing or coupling light grazing with rest seem lacking.
RESPONSE: The potential effects of rotations, burning, rest, and Authorized Use adjustments where proposed are outlined in the respective allotment effects discussion by resource in the SDEIS Volume II Chapter 3. A more generalized discussion is found in Appendix D – Grazing Management Toolbox.

Monitoring

H-5 - As noted above, implementation of the Grassland Plan and Alternative 4 is dependent upon monitoring. We appreciate that Alternative 4 has tried to assess the feasibility and cost of prospective range developments. Additional culling and review of range developments is warranted based upon the effects that individual developments may have in meeting the direction set by the Grassland Plan. We broach this topic later in this letter. In our estimation not funding a wish list of ill advised range developments also allows the District to target more attention on monitoring. This said, the District and the Dakota Prairie as a whole needs to commit to monitoring if the Grassland Plan is to be implemented. We appreciate that Alternative 4 has tried to assess the feasibility and cost of prospective range developments. We have noted that despite the increase attention to monitoring the monitoring handbook identified in the 2002 Grassland Plan has yet to be completed and that one of the three years of vegetation structure monitoring that we anticipated might be collected in the North Billings planning area was not. Based on this we are concerned about whether the monitoring needs required by adaptive management will be successfully completed in the future.
RESPONSE: The Forest Service is committed to monitoring as funding and other resources permit. See Response to Comment H-2.

H-6 - In a manner analogous to the Grassland Plan the SDEIS differentiates between implementation monitoring and effectiveness monitoring. Their treatment in the SDEIS is somewhat confusing and could use some improvement.
RESPONSE: See Response to Comment H-2 and Appendix E of the Draft ROD.

H-7 - In the SDEIS implementation monitoring appears to refer to multiple things. In general terms, implementation monitoring measures and documents whether or not the Grasslands Plan standards and guidelines and project-level design criteria are being applied. In the SDEIS implementation monitoring also refers to the administrative duties associated with the Grasslands asking whether the livestock management is being applied as prescribed in the Allotment Management Plan (AMP) and implemented through the Annual Operating Instructions (AOI). Explicitly, this includes the number of livestock to be grazed, season of use, pasture rotation schedules and the construction, improvement and maintenance of livestock grazing facilities. Implicitly, this would include compliance checks and the documentation of violations. According to the SDEIS, the Forest Service, in conjunction with the Medora Grazing Association, is responsible for conducting this second type of monitoring. We are very supportive of both types of implementation monitoring. Past experience has show that improvement is needed in both types. Regardless of the specific arrangements made between the Forest Service and a local grazing association, it is the Forest Service that is accountable to the public.
RESPONSE: See Response to Comment H-2 and Appendix E of the Draft ROD.

H-8 - On a related note, we must underscore that when we have requested them, we have been unable to get copies of the Annual Operating Instructions from the Dakota Prairie Grasslands and certain Districts have been unwilling to provide actual stocking rates when requested. This has been going on for at least the last five years. Annual Operating Instructions and actually stocking records are important tools in the administration and operation of public lands grazing, and implementation monitoring. We believe that making the Annual Operating Instructions and actual use data available to public entities and interested citizens is required for you to demonstrate that adaptive management is being successfully implemented on the National Grasslands.
RESPONSE: Comment noted, however this comment is not specific to this project.

H-9 - The effectiveness monitoring schedule (Table 2.5) is confusing. According to the SDEIS, monitoring of the riparian areas would be conducted every three or five years. The monitoring frequency" for woody draws, herbaceous structure and seral stage in Table 2.5 does not identify a specific frequency interval. Indicating a monitoring item may occur once within a 3 to 5 year timeframe" does not explicitly indicate monitoring will take place on a on a recurring basis. Similarly, indicating that effectiveness monitoring frequency for herbaceous structure will be determined after three years of annual monitoring also falls short of establishing a return frequency. This shortfall needs to be corrected. We suggest that the trigger point timeframes associated with Tables 2.7, 2.8, and 2.9 be used to define the basic frequency intervals for effectiveness monitoring.
RESPONSE: Specific monitoring frequencies are spelled out for each allotment and can be found under the respective allotment in the Draft ROD, Appendix B Allotment Specific Decision Tables as well as the Monitoring portion of the Decision in the Draft ROD.

H-10 - The Department would like to insure that it would have the opportunity to review monitoring data after it is collected. This may be a given; however, in light of the difficulty we

have had getting Annual Operating Instructions or elemental data relating to livestock use on the Little Missouri National Grasslands we believe the availability of monitoring data to members of the public should be specifically assured in the FEIS.
RESPONSE: Comment noted, monitoring data is public information.

Range

H-11 - The range analysis principally focuses upon range administration, actual stocking use, authorized use, livestock weight adjustment, and carrying capacity.
The SDEIS points out the shortfalls in not having accurate actual stocking data available from a permittee perspective. In addition, we would like to point out that this lack of information makes it impossible for the Forest Service or public parties (such as the Scientific Review Team) to understand the past, present or reasonably foreseeable actions or effects. We applaud the Districts' effort to rectify the situation, compile this information and use it to assess the status of these public lands.

From the perspective of range administration, we consider it a big step forward to collect, record, and report **actual stocking** in a temporally accurate, allotment by allotment and pasture by pasture basis. The 2010 information currently being collected should be reviewed and made available on a site specific in the FEIS. Given that 2010 is the first year for which the local Grazing Association has submitted actual use data, the FEIS should report this information along with the data found in Appendix F of the draft Botany Report. Then in terms of effects analyses, in addition to preference, the FEIS should compare the initial changes in stocking to average actual use on an allotment by allotment basis.

In reviewing the SDEIS we have noticed a cascading but interrelated series of shortfalls which directly or indirectly relate to the **carrying capacity** analysis. These shortfalls have left us puzzled. Although some shortfalls are acknowledged in the SDEIS, we have ultimately come to believe the District needs to incorporate a different analysis process in order to produce a defensible product which uses the best available science and complies with the Grassland Plan and Northern Plains/Dakota Prairie Grassland FEIS. Particular concerns include the following:

> The suitability analysis does not properly incorporate the capable/uncapable range analysis found in the 2001 FEIS for the Northern Great Plains Management Plans Revision. This range analysis determined that uncapable range included areas with less than 200 lbs forage production/acre, areas with slopes greater than 40%, or areas dominated by rock, bare ground, roads, water bodies or conifer trees. According to the 2001 FEIS, 86% of the LMNG was determined as capable or conducive to livestock grazing. This is virtually identical to the acreage found suitable for livestock grazing under the 1986 Custer National Forest FEIS. In passing, the SDEIS indicates that approximately 81% of the North Billings Project Area is capable of sustaining livestock grazing. We believe this is largely reflective of the high proportion of steep terrain and/or conifers found in the western part of the project area. However, we do not see this acreage carried forward in the site specific suitability analyses undertaken for

each allotment in the SDEIS. We believe that the SDEIS should be amended so that the suitability analyses associated with each allotment is based on capability as per the Northern Great Plains FEIS (See Appendix B). According to the Northern Great Plains/Dakota Prairie Grasslands FEIS suitable acres, determined through site specific planning do not include uncapable acres.

The 2005 Scientific Review Team (SRT) Report commented upon **suitable and capable** range as part of Issue 1-2. In their comments it appeared the SRT may have misunderstood the two concepts and how they inter-relate to one another. In response to the SRT Report the North Dakota Game and Fish Department submitted comments to the Dakota Prairie Grasslands on two occasions.

More importantly, the SRT Report was followed in September 2006 by the Livestock Grazing Record of Decision (2006 ROD) which amended the Grassland Plan but explicitly left the Northern Great Plains/Dakota Prairie Grasslands FEIS[1] intact; and, in October 2006, the Dakota Prairie Grasslands "Final Response to the Scientific Review Team Report".

The Final Response responded to every SRT recommendation and developed following an extensive public input process.[2] The opening paragraphs of the Final Report include the following statements:

> *"It is the Forest Service's intent to implement the SRT's recommendations* ***consistent with our final response.*** *Note, however, that as science and technology evolve, implementation of the recommendations may change over time to take advantage of new information."*[3]
>
> And
>
> *"As detailed in the rest of this report, none of the recommendations, nor our response, result in a need to change the Grassland Plan* [as amended by the Record of Decision released in September] *This is discussed in the September 2006 Record of Decision document."*

Later in the Dakota Prairie Grassland's Final Response the following statement is found:

> ***<u>DPG Response</u>***
>
> *Before developing an AMP it must first be determined what that allotment's grazing capacity is. This involves determining how much forage an area can produce as well as how much forage can be removed.*
>
> *When determining the amount of forage available, the Forest Service considers which lands are capable or incapable of supporting grazing on an annual basis. In part, the*

National Forest Management Act (NFMA) regulations (36 Code of Federal Regulations 219.3) define capable as "(t)he potential of an area of/and to produce resources, goods and services, and allow resource uses under an assumed set of management practices....(c)apability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology..."

***Appendix B of the FEIS** details how capability was estimated for the Grasslands Plan. Lands with slopes greater than 40 percent, areas dominated by rock, bare ground, roads, railroads and water, as well as those with the potential to produce less than 200 pounds of forage were considered uncapable. The SRT recommends areas producing less than 200 pounds of vegetation be included in calculations of an allotment's forage production capability.*

The concept of classifying capable versus uncapable areas has historically been Forest Service policy, is widely accepted, and of considerable use to land managers. ***By definition, we have determined no forage is available from uncapable lands because they will not physically support grazing on an annual basis. As we develop AMPs, we will recognize that some incidental use[4] occurs on uncapable land. We will display existing forage production on both capable and uncapable areas, as well as the level of allowable forage removal (which may be zero percent on uncapable areas).*** [Emphasis ours.]

It should be stressed that decisions on revising permitted numbers will be based on an assessment of whether or not the existing conditions are meeting or moving toward meeting the Grasslands Plan goals and objectives. Also see DPG Response V-2.

As noted above, the Northern Great Plains FEIS (2001) very explicitly discussed the use and definition of capable and suitable range (see Appendix B). The Final DPG Response, issued a month after the 2006 ROD, was written to be consistent with the Northern Great Plains FEIS. The Livestock Grazing ROD for the Dakota Prairie Grasslands directly tiers to the Northern Great Plains FEIS. Given this, we do not believe the District should be allocating forage from un-capable lands in SDEIS carrying capacity analyses. Based on the Livestock Grazing ROD, the Final Response to the SRT and the Northern Great Plains/Dakota Prairie Grasslands FEIS, we would expect the District to: 1) separately report on the *"allowable forage removal"* from capable and uncapable areas within each allotment or pasture; and, 2) report the forage available from the uncapable acres as zero or incidental. We would not expect to see the fundamental concept of capable acres to be abandoned in the North Billings planning effort as it appears to have been.

Carrying capacity evaluations in the SDEIS assume **even utilization** occurs across each allotment. Assuming that even utilization throughout each the allotment runs counter to some of the major and fundamental premises behind the Northern Great Plains/Dakota Prairie Grasslands FEIS and Dakota Prairie Grasslands Plan. The

Dakota Prairie Grassland Livestock Grazing ROD did not change this premise. High grassland vegetation cover is generally associated with ungrazed or lightly grazed areas dominated with mid or tall grass species cover (2001 NGP FEIS). We believe that assuming 25% utilization by livestock across all acres open to grazing (including the areas previously determined to be non-capable, slopes, areas distant from water, and areas where high cover is desirable) runs counter to the basic concepts threaded throughout the Dakota Prairie Grassland Plan and undermines successful implementation of the Plan.

The FEIS and Dakota Prairie Grassland Plan contain numerous elements relating to uneven utilization, Appendix I in the Grassland Plan being one. We would like to see Appendix I used in the FEIS for site specific planning and carrying capacity analyses

Due to the fact livestock are so widely distributed in project area, structural heterogeneity is an essential component relative to grassland wildlife. Moreover, managing for uneven utilization/structural heterogeneity is a vital component of the Grassland Plan. Therefore, we believe planning and managing for uneven utilization is a critical consideration. Appendix I is an important tool in reaching this end. In reading the Scientific Review Team report nowhere do we see a reasoned argument or scientific rational to make even utilization an underlying objective of the Grassland Plan. If this explicit argument had been put forward, we would have strenuously objected. Nor did we see the Dakota Prairie Grasslands endorse such a concept in its Final Response to the Scientific Review Team. responded back to the SRT. If the Livestock Grazing Record of Decision or Final Response had embraced such a radical departure from the Northern Great Plains FEIS, the Dakota Prairie Grasslands clearly would have gone back and revised the FEIS: which it did not do. We suggest that the District not inadvertently or intentionally unravel the Grassland Plan now.

Additional statements in the FEIS relating to uneven grazing include: "information on livestock grazing distribution is key in helping to assess livestock forage availability and to predict effects of grazing on wildlife" and "actual use data would be best for mapping livestock grazing distribution patterns". Where is this information? The draft Range Report indicates that a substantial effort has been put into mapping livestock grazing distribution on an allotment by allotment basis. We would like to see this information displayed in the FEIS.

In addition, the carrying capacity analysis is based on the assumption that all vegetation consists of "reference plant communities" and that total production in each area equals that of the reference plant community. We do not understand the justification for selecting grassland reference communities as your baseline in light of the following considerations. Actual sampling data collected within the project area indicates that much of the vegetation is not climax vegetation or consists of communities dominated or influenced by invasive species such as Kentucky bluegrass. Moreover, the draft Botany Report also identifies a substantial acreage of broken lands in the project area. The SDEIS also indicates only a fraction of the project area is high

seral. Species such as crested wheatgrass that are associated with pronounced palatability or seasonal preference concerns are broadly dispersed in the project area and discussions regarding forage preference issues are repeatedly enumerated throughout the SDEIS and found in other research and Forest Service documents.[5]

Nor is it clear, what the SDEIS means by "reference communities". At this point neither the Ecological Site Descriptions (ESDs) for MRLA 58C (encompassing the badlands portion of the project area) or the preliminary drafts of the revised descriptions for MRLA 54 that are under consideration have been released (the EFOTG versions of the MRLA 54 ESDs date back to 2003). We reviewed the discussion of Ecological Site Descriptions/Reference State in the draft Botany Report for the North Billings EIS. The diagram in the Draft Botany Report for "a Loamy ecological site" indicates a reference state may include any one of a several grasslands communities (including late- mid-, and early phases or seral states).

Based on statements elsewhere in the SDEIS, we are doubtful if the carrying capacity analysis in the range section is considering this full spectrum of seral stages on a site specific basis.

It would more likely appear that the reference plant communities used in the carrying capacity analysis are akin to the potential vegetation/vegetation in excellent condition class used in the SCS range site descriptions written in the 1970s. In reviewing these, it is clear that they do not include some of the major vegetation types actually found in the project area. For example, many areas, particularly steep north-facing slopes, are dominated by Rocky Mountain juniper. However, in terms of potential vegetation in the badlands zone, there are no range sites that show Rocky Mountain juniper as anything more than a minor constituent. Given this, how can the carrying capacity analysis claim any degree of site specificity or accuracy if it construes the many stands of Rocky Mountain juniper in the as graminoid-dominated, forage rich communities?

As of today, the Natural Resource Conservation Service Ecological Site Description classifications covering the project area remain incomplete or appear to exist in a transitional form not available to the public. The earlier SCS classification used in their stead was never fleshed beyond a hypothetical climax community description. Given these shortfalls and the disparity with the actual vegetation in the project area, we do not believe the choice of reference plant communities is the "best approach" for site specific project analyses concerning carrying capacity.

We are aware of recommendation by the Scientific Review Team (SRT) (Issue I-1). However, this is another instance where we believe the District may not have taken into account the Dakota Prairie Grasslands Final Response which states among other things the DPG wants to insure *"carrying capacities are as accurate as possible for each allotment"* and that the DPG would *"utilize the best available data (regardless of whether it is based on habitat types or ecological sites) as a starting point for actual on-the-ground data collection and interpretation"*. Presumably, the SRT was about good

science. The Forest Service also strives to use good science. However, perhaps more germane in terms of land management, the Forest Service uses best available data for decision-making.

RESPONSE: Refer to Responses to Comments C-3.92, C-3.93, and C-3.96a and SDEIS Volume I, page 88, #6.

H-12 - Largely due to the efforts of the Forest Service, a sizable and growing body of data has been collected from within the project area and surrounding environs. Much of this data is presented or alluded to in the SDEIS. Biomass clippings have been collected from more than 90 sites. The list of plots where actual vegetation data has been collected is large. Much of this information has been screened, at least preliminarily, by the Forest Service for appropriateness. While this information may not be sufficient to finalize the ecological site descriptions for western North Dakota, it should be used along with along with the growing body of published, peer-reviewed data that is available (such as the five year study by Uresk and Bjugstad (1996) which collected annual biomass data from 30 sites on the Little Missouri National Grasslands (including two within the project area) in the 1980s- early 1990s. This data, which reflects the actual vegetation in the project area, should be used in the carrying capacity analysis.

RESPONSE: In the SDEIS Volume I, starting on page 89, the Forest Service discusses the cooperative monitoring data collect by NDSU and also informs individuals that the supporting data can be found in the Range section of the Project Record.

The commentor also suggested using data which reflects the actual vegetation in the project area, should be used in the carrying capacity analysis. On page 91 of the SDEIS Volume I the Forest Service identifies that the primary concern at this point is that neither MLRA 54 nor 58C has a sufficient number of sampled plots needed to represent the project area. The Forest Service also states that as information becomes available, it will be reviewed to determine if production information for the project area varies significantly from that provided by the NRCS soil survey. Also on pages 91 and 92 the Forest Service discusses four allotments with representative samples.

The commentor also refers to using peer review information for biomass data and using this for the carrying capacity analysis. On page 88 the Forest Service identifies that a peer review was completed for the carrying capacity analysis to assure the methodology and calculations were correct. It was confirmed that the process used was correct (Project Record, Inter & Intra-agency Memos, Conversations and Agreements). It should also be noted that the biomass production values within the NRCS soil survey are from peer reviewed data and professional experience by several different agencies such as Universities, State agencies, and Federal agencies.

H-13 - For many years, the Department has requested that the Forest Service consider the effects of increasing cow and calf on forage needs and Grassland resources. Thus, we appreciate that the current analysis attempts to address **cow size.** The SDEIS does so by using an approach described by North Dakota State University published in 1997,

and sanctioned in the Dakota Prairie Grassland's Final Response to the Scientific Review Team. Many believe this approach was based upon the 7th edition of Nutrient Requirements of Beef Cattle published by the National Research Council (NRC). It is not. Unlike the methodology found in the NRC publication, the approach in the 1997 NDSU report did not consider many factors such as terrain or pasture size, the varying forage demands/milk producing characteristics posed by different breeds, calf size, or age of cows. In short, the methodology used in the 1997 NDSU report is based on research published prior 7th edition and less accurate. A more recent NDSU report published in 2000 by Poland addressed some though not all of the shortcomings associated with the 1997 NDSU study however has not been used on the Grasslands to date.

RESPONSE: The SDEIS used the methodology of Animal Unit Equivalent for Beef Cattle Based on Metabolic Weight. The suggested method by commentor is to use the diet nutrient density requirements of lactating beef cows. This method takes into account milk production and the amount of dry matter intake. This method also has more variables than the Metabolic weight in that one needs to know the live weight of the cow, months since calving, breed of the cows, etc. Poland (2000) identifies that several model simplifications and assumptions were necessary to generate the generalized requirements.

The commentor also talks about adjusting for terrain and pasture size which are consideration used when stocking an allotment or pasture. Adjusting for livestock weights also need to be considered in the amount of forage that one is going to harvest from an allotment or pasture, however, adjusting for animal weights is related to Animal Unit Equivalent and what the individual animal requirements are. Once a carrying capacity has been determined terrain, distances to water, etc. is figured in with the type of livestock (cattle, bison, goats, sheep, etc) going to be stocked in an allotment or pastures.

H-14 - The SRT Report specifically indicated the forage needs of older, larger calves needed to be considered. However, the SRT Report did not cite a specific reference that might be used to in addressing larger, older calf size. This likely contributed to the decision by the Dakota Prairie Grassland to stick with the references listed in the original Grassland Plan. In terms of calf size, none of the reports identified above, actually address the amount of forage consumed by unweaned calves. Research that has addressed this topic include: Lusby et al (1976), Bailey and Lawson (1981), Abdelsamei et al (2005), and Tedeschi and Fox (2009). These studies show that as unweaned calves grow and approach weaning, they eat increasingly larger amounts of forage. A recent paper by Uresk (2010) in Rangelands integrates cow forage consumption and calf forage consumption. Though this paper has generated some controversy (see the April 2011issue of Rangelands) it does appear to offer an easily used tool that avoids some of the pitfalls associated with past approaches. We believe it could be effectively used on the Dakota Prairie Grasslands and would be an improvement over the methods identified in Appendix C of the Dakota Prairie Grasslands Plan. Regardless of how the Dakota Prairie Grasslands chooses to

proceed, we believe the method used on the DPG must be updated to accurately reflect forage consumption by cows and calves.

RESPONSE: The Forest Service is aware and has addressed livestock weights and the definition of an AU takes into account for a cow with or without a calf less than six months of age.

One additional note with regards to carrying capacity, in a number of instances the SDEIS indicates that winter use is not counted as Authorized Use. This does not make any sense to us.

Key Issue -- Riparian Areas

H-15 - In terms of riparian areas there appear to be some disparities in the effects analyses in the supporting specialist information for the DEIS and the SDEIS. In some segments the SDEIS appears to anticipate more positive outcomes than anticipated in the DEIS. The shift should be explained.

RESPONSE: Without providing specific instances of this disparity between the DEIS and the SDEIS, the Forest Service can only respond that, generally, in response to comments provided in the DEIS, further analysis and additional field work occurred to clarify the Riparian analyses, thus the change in outcomes within the SDEIS.

Key Issue -- Green Ash Hardwood Draws

H-16 - We appreciate that the District has incorporated information from our longstanding cooperative venture monitoring hardwood draws. The monitoring effort was initiated in 1886; we look forward to continuing this collaborative venture in the future. Please note that not all the methods described in the SDEIS were employed in the early sample years. The monitoring study methodology underwent some revision after the first data set was collected to improve monitoring rigor.

In terms of the woody draw analysis in the SDEIS, we are somewhat concerned about the use of sideslope conditions to compensate for bottom conditions. In many parts of Little Missouri National Grasslands, we have seen instances where the woodland vegetation in the draw bottoms has been heavily disturbed, if not obliterated, leaving woodland vegetation only on the steep sideslopes that are not readily accessed by cattle. We do not believe the District should manage for this situation. We also believe that the vegetation of the draw bottoms is most responsive to changes in livestock management, good or bad. This means that changes in woody draws resulting from changes in livestock management or livestock impacts will most readily be seen in draw bottoms. The SDEIS also brings up some interesting issues relating to plot size. At the District's convenience, we would like to meet to discuss all of these considerations and garner a better understanding of the other hardwood draw monitoring underway.

Although we support Alternative 4 overall, we are concerned about the small percentage of woody draws that are projected to transition to a healthy state under the initial actions; and,

about the declining woody draw condition projected under Alternative 4 for some allotments. We believe the District should give more consideration to obtaining favorable outcomes from the onset rather than depend upon subsequent adaptive actions to recover ground and improve draw conditions.

In addition, we believe the ancillary question regarding the relative number of individual draws that are improving is important. In this regard the trigger points identified in the hardwood draw section (and elsewhere in the SDEIS for other key issues) are critically important in directing adaptive management over the 10-15 year lifespan of an AMP.

Key Issue -- Herbaceous Vegetative Structure

The discussion on herbaceous vegetative structure in the SDEIS relating to **Consistency with Grasslands Plan** lists only one guideline, no objectives and no standards. This discussion is incomplete. Additional grassland plan provisions that apply to vegetation objectives include:

- Design and implement range management strategies for meeting desired vegetation objectives using existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I). **Guideline.**
- Prioritize and remove fences or water developments that are not contributing to achievement of desired conditions. **Guideline.**
- Control the timing, duration, and intensity of grazing on grass dominated ridgetops and valley bottoms to prevent overuse and to promote the desired structure and species composition. **Guideline.**
- Use livestock grazing strategies that maintain or improve the vegetative composition and structure associated with the scenic qualities of the area. **Guideline.**
- Design grazing practices to provide landscape diversity for plant composition and structure. **Guideline.**

The above provisions are noted under the Range Section, but not in the Key Issue discussions on Woody Draws, Vegetative Structure, Sharp-tailed Grouse, and Seral Stages. This needs to be rectified. We can't help but notice the significant disconnect between these provisos and the Chapter 3 analyses on Structure, Seral Stages, and Sharp-tailed Grouse. To address this disconnect the above guidelines should be explicitly listed, incorporated, and discussed these key issue discussions.
RESPONSE: The applicable Standards and Guidelines are outlined in the Range Section and it is not necessary to repeat them.

H-17 - The discussion on sharp-tailed grouse points out the benefit of rest in terms of increasing herbaceous structure. Reference to the benefit of multiple year rest at the pasture or allotment level as identified in Appendix B of the Northern Great Plains should be explicitly mentioned. We question whether any of the Alternatives (other than Alternative 1) are considering the rest objective in a manner that will have a significant bearing on high structure.

RESPONSE: Based on the definition of rest in the Grasslands Plan (Appendix G), rest has been incorporated in all alternatives (see SDEIS, Volume I, Chapter 3 Part 1, page 108. Additionally, the tool "Rest for one or more seasons" is available in the Grazing Management Toolbox for consideration if monitoring shows that Grasslands Plan goals and objectives are not being met or moved towards.

H-18 - Even with the sharp-tailed grouse population trends noted, we do not believe that the Guidelines reported as 2, 3, 5, 7, or 9 in the SDEIS on Pages 221 - 224 should be disregarded.
RESPONSE: These points are not disregarded (see SDEIS Volume I, pages 221 - 224).

For #2: The blocks referred to in the Guideline do not refer to formally identified areas as might be the outcome of a mid-level landscape analysis. However, a "block" could occur within a portion of a pasture or an entire pasture. Under this interpretation, a block could be 10's of acres or 100's of acres depending on the pasture size and/or the juxtaposition with other pastures that supported high structure. Since management could shift annually, this could also benefit the shifting mosaic concept as well.

For #3, #5, and #9: The scale at which Standards, Guidelines, and Objectives are analyzed and applied is typically at the allotment scale. The 2006 Grazing ROD provides similar direction:

- **"Plan direction will be specifically implemented on individual grazing allotments through the development of AMPs through the Demonstration Project (2006 Grazing ROD, page 9).**

For #7 and #9: There are no designated areas specially managed for upland gamebird nesting cover under this project.

H-18a – Key Issue – Seral Stage

Overall, we are impressed with the substantial effort that has gone into presenting the varied, though sometime disparate information that has been collected in the project area in recent decades. The discussion under seral stage is the first time we have seen a written description of the multiple grassland vegetation collection efforts over time. More efforts of this sort are needed. We anticipate that at a later date there will be additional opportunities to provide additional feedback on these various data collection efforts. Additional data or data analyses germane to the project area but not mentioned or discussed include: Reinhart and Zimmerman (2001), Maxwell (2001), Dakota Prairie Grasslands (2002), DiBenedetto et al (2003) and Uresk and Bjugstad (1996). All entailed data collection efforts that included at least part of the project area. These should be specifically referenced and discussed at least in passing.

As mentioned earlier in this letter, we agree that the apparent increase in invasive grasses is a matter of concern. We are unwilling, however, to go so far as saying that "it is of greater concern than the proportion of seral stages in the project area". Both are a matter of concern

and should be addressed over the life of this project. By their very nature, changes in the amount of invasive grasses in the project area, affects the acreage, distribution and relative proportion of seral stages in the project area.

According to the analysis to date, the distribution of seral stages in the project area falls short of meeting Grassland Plan Objectives in terms of low seral and high seral. One avenue for increasing early seral may be to decrease the amount of juniper using prescribed fire and, thereby, increasing the native graminoid component.

As alluded to earlier, it is difficult to comment on the classification system described in the Seral State section of Chapter 3. Much of this classification appears to be based upon material that is available internally; however, is not disseminated publicly. Section II of the EFOTG information for Billings County includes only Ecological Site Description information for MRLA 54. Moreover, the Loamy Ecological Site Description for MRLA 54 available through EFOTG was developed in 2003 and does not include the complement of states indicated in the draft state and transition model found in the draft Botany report.

In large measure, we concur with the concerns expressed over what is characterized under the term "Composition-Timing Conflicts". The seasonality of plant growth, forage availability and forage preference, are well documented and entrenched concepts in the ecology and management of grassland ecosystems and grassland species. As noted earlier, Dakota Prairie Grasslands staff have increasingly become aware of the limitations and management issues associated with crested wheatgrass, which can be one of the more productive grassland types found in western North Dakota either in pure stands or when intermingled with native grasses. Livestock food habits/grazing preferences can exert disproportionate grazing pressure on certain species, even in all native rangelands (Uresk1986), and can change markedly over the course of the growing season. We believe this is something that must be address in the planning process.

With regard to the predominant invasive species associated with the project area, we believe consideration should be done on a species by species basis. Based upon the data in the SDEIS, limiting the expansion of and reducing the abundance of Kentucky bluegrass is a key issue in itself. The ecology of Kentucky bluegrass is complex. More consideration must be given treatments relating to the timing of livestock grazing, the introduction of propagules into new areas, and prescribed fire. In addition we would like to underscore a comment made in our early letter which we believe has not received the consideration it deserves.

> "*Looking down the road, we see it [the encroachment and persistence of invasive exotic plants in the project area] spilling over into issues relating to sustainability of native communities and wildlife. The Rocky Mountain Research Station recently released a literature synthesis concerning fire and invasive species. This, alongside the other information available does not highlight a clear path for addressing Kentucky bluegrass containment and control as a whole. Prohibiting the use of tame grass hay6 on native grassland areas is one step that should be taken now if it hasn't been already.*

"For other emerging issues on the Grasslands, we have seen where carefully constructed and implemented research has yielded insights and provided avenues for solutions. The Little Missouri National Grassland should be actively pursuing research regarding its principle invasive graminoids such as Kentucky bluegrass and crested wheatgrass. Regarding Kentucky bluegrass in particular, we believe that controlled research is necessary for effective adaptive management and that adaptive management must be targeted toward the issue."

To further the above recommendations, this winter we will be sending you a bibliography of the literature we are aware of relating to Kentucky bluegrass. We hope that this will provide further impetus for moving forward on this issue. Even with such information in hand however, we believe that given the complexities of Kentucky bluegrass ecology future research directed toward management will be needed.

Rocky Mountain juniper is a native invasive species. Very little consideration is given this in the planning process. At a minimum, we ask that the two priority treatment areas that have been identified for bighorn sheep be addressed in the planning process. These are located in Allotments 129 and 282. More information on these can be obtained from Brett Wiedmann, the Department's bighorn sheep biologist stationed in our Dickinson field office.
RESPONSE: Invasive species are included in the Vegetative Seral Stage Issue as one of the primary areas of concern impacting seral stage distribution.

Key Issue - Economics

H-19 - Two types of economic analyses were presented in the SDEIS assessing the prospective economic impacts associated with each Alternative. We read both with interest. The ranch level analysis conducted by NDSU indicates that the many if not the majority of the permits associated with the project area are relatively small. We do not know if the small size of these permits is tied to the distribution of the permits initially done in the late 1930s -1940s, subdivision of the private ranchlands, hence, permits, over time; is indicative of non-grazing or off-ranch income not considered in the analysis; or reflects renting or subletting practices.

Future clarification on these points is suggested. In addition we noted, the NDSU model used in the ranch level analysis is based upon ranches that are generally larger that those reported from the project area. Given this we are not sure of the applicability of this model.

Data and past ranch level analyses such as Leistritz (1972) present an opportunity to understand longer term trends relating ranching operations. For example while the NDSU economic study presented in the SDEIS indentifies a statistically insignificant decreasing trend in terms of weaning weight; Leistritz (1972) indicated the average calf weaning weight ranged from 385-398 pounds. This would suggest that over this longer timeframe weaning weights on the Little Missouri National Grassland have notably trended upward.
RESPONSE: The topography and soils seem to lend themselves to a mixture of cow-calf operations and raising crops in the upland potion of the project area. The NDSU enterprise and debt repayment capacity report actually contains some information about

trends in off-ranch income. However, it can be hard to reconstruct the historical record in an attempt to understand the combination of reasons that explain why herd sizes on North Billings ranches are generally smaller than those found in this part of North Dakota.

H-19a – Key Issue - Drought

Drought strategy for the Dakota Prairie Grasslands has yet to be completed. This along with the yet to be completed Monitoring Handbook is integral to successful implementation of the Grassland Plan.
RESPONSE: The Drought Strategy has been completed, see the Draft ROD, p. 17.

Additional Comments Regarding Alternative 4 Relative to Specific Allotments

H-20 - We do not believe we have sufficiently reviewed the information in Volume 2 of the SDEIS to comment on each and every allotment. The specific comments we have developed to date however, are included in an appended table.

[1] The following key statement is found in the opening paragraphs of the September 2006 ROD "……*I determined a supplemental EIS is not required to support this decision*."
[2] Including the two Game and Fish letters referenced above.
[3] Indicating each recommendation in the SRT Report must to be interpreted from within the context of the applicable response and in fact was subordinate to the Final Report
[4] Incidental use is also discussed in Appendix B of the FEIS
[5] Discussions concerning seasonal crested wheatgrass-native prairie grasses utilization conflicts are found in the recent NEPA documents associated with the Grand River National Grassland. Preference issues associated strictly native mixed-grass prairie can be found in Uresk (1986).
[6] This would include winter feeding

Specific Allotment Comments Relative to Alternative 4

Allotment	Comment Based on Alternative 4
126/128	Overall decline of woody draws projected in Allotment 126, due to increase in Animal Units and more consistent use in some pastures in proposed initial actions. Recommendation: Do not increase AU as proposed and implement adaptive options at onset. Adaptive options should include eliminating winter feeding and limiting winter use.
129	New water tank would increase disturbance in some woody draws. Recommendation: Do not construct proposed water tank. Address condition of springs and seeps in same section. A priority burn area for bighorn sheep habitat improvement is identified in this allotment. We recommend this be incorporated into the final decision as an initial action and addressed in the FEIS.
133D5	Allotment is proposed to be hayed as in past Recommendation: Use as a forage reserve pasture in a manner similar to that proposed for the Elkhorn Ranch.
272	Two water pipelines and four water tanks are proposed. Recommendation: More certainty should go into the removal of the multiple reservoirs and the two spring developments. Springs should be reclaimed. Provisions should also provide for turning water on and off at each tank to allow additional control of livestock usage.
278	Alternative indicates that all three pastures would be managed as crested wheat. This suggests early season grazing. There are some indications however that grazing would extend into hot summer months. If so usage should be based upon the natives to avoid over use. Woody draws severely trampled in P2. Recommendation: More attention toward improving condition along Betsy Creek drainage is needed. Rehabilitate reservoir in P2 as part of initial action; fence of woody draws and alkaline fen as adaptive action.
282	Magpie and Fantail Creeks. Second longest segment of non-functioning creek in the project area. One of 5 reaches in allotment will take decades to reach PFC. Sagebrush flats bordering creek important pronghorn wintering area. Please reference the letter we to the District on February 3, 2011. Our comments in this letter, should be reflected in the FEIS. We disagree with some of the commentary in the grazing management tool box regarding sagebrush control. A priority burn area for bighorn sheep habitat improvement is identified in this allotment. We recommend this be incorporated into the final decision as an initial action and addressed in the FEIS.
289	Overall decline in woody draws projected in Alternative 4. Recommendation: Modify initial and adaptive management actions to elicit positive response.
301	Recommendation: Modify remaining uncontrolled water sources.

RESPONSE: Thank you for your individual recommendations. Refer to the Draft ROD for the proposed Decision, in particular, Appendix B, Allotment Decision Tables.

I – North Dakota Office of the Governor

I. Need for Stronger Science-Based Practices

I-1 - One of the primary concerns I have with the Supplemental Draft EIS is the process used to determine grazing allotments within the North Billings project area. I believe the Forest Service did not use a large enough sampling of years to determine whether current grazing was consistent with Forest Plan objectives. The Forest Service used data and assessments collected from 2004, which qualified as a severe drought year, to serve as a baseline year for resource analysis, thus producing potentially skewed results that may not provide an accurate baseline for potential reductions. Additionally, using the time period from 2004-2008 as a sample period to determine adjustment levels does not accurately represent normal conditions in this area, with three of the years classified as severe drought years and one as a moderate drought year. I believe that a more appropriate sample set of years would be the time period from 1996 to 2010, or longer if data is available. Using trend-line data would ensure a more accurate representation of weather fluctuations in North Dakota is represented.
RESPONSE: See Response to Comments C-1.3, C-3.15, C-3.102, and C-3.135.

I-2 - In addition, it is also important that the Forest Service use information collected by multiple impartial sources, for example, North Dakota State University (NDSU), in making their determination. In addition, in interpreting this information to determine carrying capacity, the Forest Service should closely follow Natural Resources Conservation Service (NRCS) instructions to ensure the decision made is impartial and in line with operations of other grasslands.
RESPONSE: All available data that was appropriate to the analysis was used. For example, NDSU data was used in the seral stage/plant composition analysis because the data collection was reasonably consistent with DPG methodologies. The VOR data collected by NDSU was not consistent with Forest Service protocols and was not used. This is outlined in the SDEIS Volume I Chapter 3, p 169. See other resource discussions to see what data they used in their analyses.

Conclusions of trends in plant composition and woody draw conditions were based on the best available science, including NRCS methodology and recommendations. The Forest Service considers multiple use goals and objectives whereas privately owned land objectives may not involve considerations other than livestock production. See Response to Comment C-1.5 regarding use of the NDSU data.

I-3 - Another area that I believe must be addressed is the need for a more concise definition of what constitutes adaptive management, as well as clarification of what factors trigger the use of adaptive management. I also have concerns about the process and procedure that would be implemented if an adaptive management tool were to be utilized to mitigate a usage

concern, and how mitigation features would be funded in the event of a budget shortfall. Would the inability to use the appropriate management tool requite usage to be reduced, or would alternative means of achieving the land use goal with fewer or no funds be allowed?

Finally, I request that the Forest Service provide more details regarding the process it used to determine that an initial 15% reduction would be made under Alternative #4, and that the possibility existed for reductions to reach 40%. In particular, I would like clarification on whether these totals were arbitrarily determined, or whether the Forest Service used a formula in making their determination.
RESPONSE: See Response to Comment C-3.20a and C-3.54. See the Draft ROD page 9-14 for details on the proposed Decision and how it would be implemented.

II. Economic Impacts

I-4 - I believe that the change in grazing allotments produced by preferred Alternative #4 would have substantial negative impacts on ranchers located within this area, as well as the region as a whole. The preferred alternative would result in initial authorized use reductions of 15% across the North Billings grazing area. The Supplemental Draft EIS even acknowledges that reductions could extend to as much as 40% of the project area in the future, a result which would greatly harm the operations of local ranchers. The Medora Grazing Association estimates that at the 15% reduction level, the overall economic impact in the area would be over $3 million annually, and if the 40% reduction level is reached the annual economic impact would likely be over $10 million. Imposing reductions under Alternative #4 would have a significant negative impact on not only ranchers, but the region as a whole.
RESPONSE: The economic section of the SDEIS provides projections for both impacts to affected ranchers, through the NDSU enterprise analysis and debt repayment capacity analysis, and impacts to the region as a whole, through the impact analysis conducted by the Forest Service economist. Although the NDSU report does not specify the impacts to individual MGA members, it does provide a range of impacts based on ranch sizes and various percentage grazing reductions. The regional impact analysis is based on the projected reductions to each ranch and the cumulative loss to the cattle market by showing not only the reduction in animal production from changes in NFS grazing but also reductions in herd sizes as a result of NFS grazing levels. The regional impacts are shown in part and full time jobs and labor income. This is more appropriate than showing changes in revenues to ranchers because reduced NFS grazing would likely reduce rancher costs as well as rancher revenues. It is unclear how the MGA derived their estimates for overall economic impact. The NDSU report was evaluated by a Forest Service economist; his review is available in the SDEIS Volume I Chapter 3, pages 228 - 233. See Response to Comments C-1.2 and C-1.6.

III. Rangeland Health

I-5 - The Supplemental Draft EIS appears to show that Rangeland Health is more than adequate within the allotment area, and that, if grazing is reduced, the potential exists for an increase in invasive species. Reducing the number of livestock allotted to graze on this land,

despite evidence that the current system is more than adequate to serve this purpose, appears to be an unnecessary modification.

RESPONSE: See Response to Comment C-3.65 regarding rangeland health. Invasive species would continue increasing under current management as well as with the removal of livestock grazing.

IV. Recommendations

I-6 - • The Forest Service should consider using a longer term of years in calculating whether current grazing is consistent with Forest Plan objectives, preferably for the years 1996-2010, or longer if available.

RESPONSE: See Response to Comments C-1.3 and C-3.102 regarding drought conditions and the years of sampling. Collective data for woody draws and plant composition did include an extended sampling period from the 1980s to 2010. See Response to Comments C-3.15 and C-3.135 regarding expected trends in condition.

I-7 - • The Forest Service, in making its determination of sample size, should use data from a variety of sources in determining whether current grazing is consistent with Forest Plan objectives.

RESPONSE: See Response to Comment C-3.199. A variety of data sources were utilized in the analysis.

I-8 - • The Forest Service should follow NRCS recommendations when determining carrying capacity.

RESPONSE: The NRCS *Range and Pasture Handbook* (1997) describes four methods for establishing initial stocking rates, one of which is very similar but more conservative than what the Forest Service utilized to determine initial estimated carrying capacity (see SDEIS Volume I, page 88, #6).

I-9 - • The Forest Service should clarify the definition and triggers of adaptive management, as well as how adaptive management plans will be implemented.

RESPONSE: The definition and triggers for adaptive management with examples are provided in the SDEIS Volume I, pages 15 - 16 and pages 56 - 61. Refer to Response to Comment I-3.

I-10 - • The Forest Service should clarify how they determined potential reduction amounts under Alternative #4.

RESPONSE: See SDEIS Volume I, page 43 – Alternatives Considered in Detail, page 48 – Alternative 4, pages 86 - 89 – Carrying Capacity Analysis, and pages 103 - 104 – Alternative 4.

J – North Dakota Stockmen's Association

The North Dakota Stockmen's Association is an 82-year-old livestock trade organization representing nearly 3,000 state beef producers. Our organization has some serious concerns after reviewing the Supplemental Draft Environmental Impact Statement (SDEIS) for the North Billings County Allotment Management Plan. I am writing to you to share some of those concerns.

J-1 - The SDEIS proposes an initial 15 percent reduction in grazing and even more dramatic reductions in the future, which will harm not only the ranching families in this allotment but the state's entire beef industry and economy. An economic report entitled "Effects of Proposed Forest Service Grazing Cuts on Ranch Operations on the Medora Ranger District" compiled in 2009 indicates that, "The prognosis that existing ranches in North Billings County can absorb 10 to 40 percent grazing cuts and remain economically viable is unfavorable." Ranchers will not be the only ones to suffer. Using the 15 percent initial reduction, the economic impact to the area is estimated to be well over $3 million, because of the multiplier effect of beef cattle in an economy. Under the 40 percent possible reduction scenario, that impact would balloon to more than $10 million.
RESPONSE: The final report the commentor cites no longer makes these claims. Instead the report now concludes: "The prognosis that existing ranches in North Billings County can absorb 10 to 40 percent grazing cuts and remain economically viable is low. Grazing reductions would lead to herd reductions. Herd reductions would disproportionately reduce net revenues. Similarly, debt repayment capacities were also disproportionately reduced compared to percentage change in grazing capacities. Most ranches would experience increased difficulty servicing existing debt. The most vulnerable ranches will be those that are entirely reliant on revenues from cow-calf enterprises, those with average to above average levels of debt, and smaller operations that have limited means to offset lost livestock income."

Notice that in the final NDSU report there is no longer any estimate for total economic impacts. In fact, the report does not even analyze a 15 percent initial reduction. It analyzes 10, 20, and 30 percent reductions, each with an assumption that ranches all operate with 90 percent of revenues from cow calf enterprises, which overestimates the true situation in the North Billings project area. The statement that grazing cuts will lead to herd reductions is a point we accept could happen in some instances, and explains why the regional economic impact analysis conducted by the Forest Service looked at not only the loss of cattle marketings associated with reduced NFS grazing but also the impacts of herd reductions as the higher impact end of the spectrum analyzed. This was done by looking at the impacts of removing all affected cattle that spend any time grazing NFS lands during the year for each alternative. Refer to Responses to Comments C-1.6 and C-1.7.

J-2 - How were the 15 percent and 40 percent reductions determined? Was there a formula that was used or were these arbitrary figures?
RESPONSE: The adjustments in Authorized Use in Alternative 4 are based upon resource issues identified for specific allotments. If there were resource issues identified, the Authorized Use for an allotment was established based on the initial estimated carrying

capacity analysis for a specific allotment. If no resource issues were identified, the allotment's Authorized Use was not adjusted.

J-3 - The data used to prepare the SDEIS was collected from 2004 to 2008, and 2004 was used as the baseline year for all the resource objectives. Years 2004, 2007 and 2008 were classified as severe drought years for the area, with only 50 to 75 percent of normal precipitation received. Likewise, Year 2006 was a moderate drought year, with only 77 percent of normal precipitation received. Because these were not "average" years – in fact, far from average years – we believe the results are skewed and paint an inaccurate picture of the actual situation on the grasslands. In a meeting earlier this year with Chief Tom Tidwell, we shared the concern about using drought-year data as the basis for analysis and received assurance that the Forest Service will not do so in the future.
RESPONSE: Refer to Response to Comment C-1.3.

J-4 - We are also disappointed that the SDEIS used only select data from the baseline data collected and paid for through a project conducted by North Dakota State University (NDSU). If the information from this impartial source was used, we contend that the SDEIS would look quite differently.
RESPONSE: Available Cooperative Monitoring data collected by NDSU was reviewed and utilized where it was appropriate (see SDEIS Volume I pages 37, 90, 132, 134, and 189). The Cooperative Monitoring dataset at the time of issuance of the SDEIS was incomplete. Refer to Responses to Comments C-1.5 and C-1.9.

J-5 - We'd also recommend that the Forest Service re-evaluate its carrying capacity figures. What the SDEIS describes as "carrying capacity equation" is what is described as "initial stocking rate equation" by the Natural Resources Conservation Services' Range and Pasture Handbook. Further, the numbers generated from the Forest Service for initial stocking rates are almost always lower than an independent consultant's initial stocking rate estimates using the same process described in the SDEIS. This too likely artificially and inaccurately built the case for grazing reductions.
RESPONSE: Refer to Refer to Responses to Comments C-3.92, C-3.93, and C-3.96a and SDEIS Volume I, page 43 – Alternatives Considered in Detail, page 48 – Alternative 4, pages 86 - 89 – Carrying Capacity Analysis, and pages 103 - 104 – Alternative 4.

J-6 - Furthermore, the SDEIS indicates that rangeland health is in very good condition in the project area. The SDEIS also indicates that the proposed alternatives could increase the number of invasive species in the allotment. Both points beg the question, why are dramatic grazing reductions necessary if rangeland health is already good and the alternatives proposed could have deleterious effects on that rangeland, not to mention the economic health of the state and community?
RESPONSE: It is generally agreed that the ground surface of upland plant communities where rangeland health was measured is well protected by various plant cover. Exceptions include areas of severe trailing and rutting, particularly along or in association with drainages, woody draws, riparian systems, and water developments (see photographs in Effects Analysis of Botany Report). However, the vast majority of NDSU sample sites were

located in upland habitats where roads and water developments were buffered. A maximum of 11 indicators pertaining to soil stability and hydrologic function were analyzed in the above analysis, but nutrient cycling, invasive species, functional groups, and other indicators were not evaluated and it would be incorrect to conclude that nutrient cycling and other aspects of rangeland health are at or near what is expected for the reference site. Refer to Response to Comment C-3.65.

J-7 - Federal lands ranchers, like all cattle producers, take great pride in being stewards of the land and their livestock. Science has shown time and time again that livestock grazing is beneficial to the long-term health of the range. Livestock grazing is also an important part of North Dakota's economy and critical to the sustainability of rural communities.

We urge the Forest Service to reconsider its reduction proposal and reproduce the SDEIS utilizing a more valid range of data collection years and impartial data, including that produced by experts within the state's own land-grant institution.
RESPONSE: The Forest Service is required by NEPA to develop and analyze alternatives that address the disparity between desired condition described by the Grasslands Plan and the existing condition. The best available information has been utilized for this project analysis.

K – Prairie Hills Audubon Society

K-1 - Prairie Hills Audubon Society is a non-profit environmental group and a chapter of the National Audubon Society; whose territory is in West River SD. We care about the protection of the biodiversity on the Grasslands, with a special concern for at risk species and habitats/communities. We care about protection of the soil, waters and air. We also care about the visual quality and the recreational experience, particularly about protection of the values associated with non-motorized high ROS classes such as SPNM and Primitive ROS class criteria. We care about protection of cultural heritage values and environmental justice.

We attach with this letter Western Watershed Projects comments on the Supplement Draft EIS of 2011 and their comments on the original DEIS in 2009. We incorporate these comments by reference, into our comments.

Thanks you for your efforts to protect our grasslands.
RESPONSE: Comment noted.

L – Jean Public

L-1 – EIS 2011-0214 43 Allotments to Livestock – on nationally owned by taxpayers all over this country lands – deny this permit. Growing cattle is extremely environmentally unsound. It destroys the land, it drives out native creatures and that is why we national taxpayers paid to save this land. It is time that the mgt stopped being money hungry and greedy and letting local cattle ranchers use National land so easily. These profiteers in cattle get cheap rates and leave our land

destroyed. Deny those 43 allotments. Let the cattle ranchers buy their own land to use instead of destroying ours. The mgt is very lax in having allowed this to continue for so long, well past the 1860's when it was ok. This is a complaint about mgt at the Forest Service for the records. Please note this complaint about lax mgt = money hungry – greed focused mgt at the FS.
RESPONSE: Comment noted.

M – Sierra Club

M-1 - The Chapter commented in the original round of scoping (August 21, 2009) and I have also included those comments for your review. We continue to support Alternative 4. While falling short of the ideal from the Sierra Club perspective, Alternative 4 does move the management of livestock grazing toward desired conditions.

As stated in our August 21, 2011 letter, The Chapter supports Alternative 4 for the following reasons:

1) considers livestock weight in calculating stocking rate
2) the amount of moderate and high structure would be increased
3) greater improvement in woody draws
4) improvement in riparian areas in a greater number of allotments
5) better control of invasive species

We would also like to reiterate our request that annual VOR readings should be conducted for all allotments and clipping should be done every 3 years to help determine utilization, species composition, and trend.
RESPONSE: A three year interval was selected to capture weather variability and develop long term trend. The Forest Service also considers anticipated levels of personnel and funding along with prioritizing workloads when developing monitoring plans. Some allotments will be subject to initial annual monitoring whereas the remainder would be surveyed every three years. Some allotments already are meeting desired herbaceous structure objectives, so monitoring them annually is not merited. Refer to the Draft ROD, p. 13 and Appendix B, Allotment Decision Tables for more information about the proposed Monitoring Plan.

N – United States. Environmental Protection Agency - Region 8

Project Background and General Comments

The EPA is pleased that the Medora Ranger District of the Dakota Prairie Grasslands is proposing to improve grazing practices on Forest Service grazing allotments in the North Billings County area to address grazing effects on riparian areas, woody draws, vegetative structure and seral stages, sage grouse and other ground-nesting birds, and the local economy. Grazing practices can result in adverse effects to streams and riparian areas from excessive grazing of riparian vegetation, streambank trampling and fecal contamination. This often leads to stream channel widening and aggradation or lowering of the water table, destabilization of stream banks, and adverse effects on water quality and aquatic habitat.

Accordingly, we support the Forest Service's proposal to update and revise North Billings County Allotment Management Plans (AMPs). We particularly endorse the use of a monitoring and adaptive management approach for improving grazing management.

Water Quality

The EPA appreciates the inclusion of additional discussion of water quality in the Supplemental DEIS in response to our DEIS comments, and we are pleased with the stated commitment to carry out or obtain needed water quality monitoring information using Forest Service resources or in partnership with other entities such as North Dakota State University (NDSU) and the Medora Grazing Association (MGA).

Water quality monitoring is proposed on a portion of the Little Missouri River, and on Whitetail, Mikes and Magpie Creeks (a minimum of five samples for E. coli testing will be collected during a 30-day period between June 1st and September 30th). We are also pleased that the monitoring period will be shortened from once every five years to once every three years for stream segments rated as Functional At Risk (FAR) or Nonfunctional (NF). This will allow earlier identification of progress or lack of progress in improving riparian conditions, and promote quicker feedback through adaptive management should additional improvements in grazing practices be necessary to restore riparian conditions.

The Supplemental DEIS states that there are no water bodies within the project area listed on the Clean Water Act Section 303(d) list for water quality impairment. However, we note that many streams in the project area have not yet been assessed by the State for water quality impairment. As stated in the Supplemental DEIS, the Little Missouri River, which is the only perennial waterbody in the project area, has not been assessed for water quality by the state on the reach flowing through the project area. However, two river reaches above and two reaches below the project area have been assessed, with three of these reaches rated as "Fully Supporting but Threatened" for recreation and one as "Not Supporting" based on levels of fecal coliform contamination. The probable sources, as identified by the state, are livestock grazing or feeding operations and onsite sewage treatment systems. Contributions of fecal coliform are thought to originate on private, state, and federal lands bordering the river. Intermittent streams in the project area may contribute some fecal coliform to the Little Missouri River through sources previously mentioned as well as wildlife.

It appears, therefore, that grazing practices may be contributing to fecal coliform contamination of downgradient water quality impaired reaches of the Little Missouri River. We recommend that the Forest Service coordinate their proposed grazing improvement efforts with appropriate water quality staff of the North Dakota Department of Health to assure consistency of proposed actions with North Dakota's efforts to restore water quality and prepare Total Maximum Daily Loads (TMDLs) for any downgradient water quality impaired reaches of the Little Missouri River (e.g., contact Mike Ell, Surface Water Program Manager for the North Dakota Department of Health at 701-328-5214). We agree that restoration of vegetative conditions in riparian areas will improve contaminant filtering capacity, and we also note that reduction in grazing intensity and provision of additional off-stream water

sources and fencing to keep livestock out of streams will assist in reducing fecal contamination of surface waters.

Conclusion and EPA's Rating
N-1 - We support the Forest Service's identification of Alternative 4 in the Supplemental DEIS as the preferred alternative, since it would result in the greatest level of riparian improvement of the grazing alternatives evaluated. Alternative 4 would also result in more rapid improvement in woody draw conditions and sage grouse nesting and brooding habitat.
RESPONSE: Comment noted.

EPA'S DETAILED COMMENTS
North Billings County Allotment Management Plan Revisions Supplemental DEIS
N-2 - We note that Alternative 4 is stated to have a "negative" effect on woody draws in allotment 126 (Table 3.18, page 157) with a 42% increase in Animal Units (AU). This is in contrast to the slightly positive effect on woody draws in allotment 126 with the other grazing monitoring and adaptive management alternatives (i.e., Alternatives 3 and 3A). It is stated that the combining of allotments 126 and 128 in Alternative 4 and implementation of seven-pasture complimentary rest/deferred rotation with a single livestock herd (at higher AU levels) would adversely affect woody draw conditions in allotment 126 (Volume II, page 24). It is also stated that Alternative 4 would not utilize range infrastructure to the extent of Alternative 3 (Volume I, page 157). We ask if additional range infrastructure (fencing and water sources) and/or a reduction in the 42% increase in AUs in allotment 126 would reduce this predicted "negative" effect on woody draws with Alternative 4. If so, we recommend that such revisions be considered for allotment 126 with Alternative 4 to avoid such negative effect on woody draw conditions.
RESPONSE: Fencing woody draws in Allotment 126 could be implemented adaptively to improve or avoid adverse effects to woody draw conditions associated with increases in Authorized Use. Refer to Draft ROD, Appendix B, page B-6.

N-3 - The Supplemental DEIS states that 4 allotments would experience a decrease in woody draw conditions with Alternative 4 (Volume I, page 160), however, Table 3.18 (pages 157-160) only shows 3 allotments in Alternative 4 with negative effects on woody draws (i.e., allotments 126, 237 and 289). This should be corrected or explained in the FEIS.
RESPONSE: Allotment 230 would also experience slightly negative effects and the SDEIS has been corrected. Allotment 142 with neutral effects in the SDEIS has also been corrected to reflect slightly positive effects, while Allotment 289 with slightly positive effects has been corrected to neutral effects. Effects in Allotments 128 and 239 have been corrected from positive to slightly positive.

The EPA is pleased that the Forest Service has asked the MGA and permittees to report actual grazing use information annually, and complete year end reviews with each permittee to verify or amend the Annual Operating Instructions (AOIs) to reflect what has actually occurred during the prior grazing season (Response to Comments, page 13). We support such reporting and conduct of year end reviews with the permittee, since it will allow the Forest

Service to better understand and monitor grazing use on allotments each season, and improve effectiveness of grazing management.
RESPONSE: Comment noted.

O – Western Watersheds Project

O-1 – The following are our comments on the SDEIS for the North Billings Rangeland Project. A number of significant foundational issues stand out in the document. Firstly, the use of HCPC for calculating carrying capacity is completely inappropriate. Few of the areas within these allotments are at HCPC. And given that the Forest Service has a significant amount of data regarding current vegetative conditions such use of the HCPC production significantly over estimates carrying capacity. Further, it is unclear from the document whether key forage species were used in the process or total production. This would further significantly overestimate carrying capacity.
RESPONSE: Historic Climax Plant Community (HCPC) methodology was not used in determining the Initial Estimated Carrying Capacity in the SDEIS. Methodology for determining Initial Estimated Carrying Capacity is described in detail on page 86 (SDEIS Volume I Chapter 3). See also SDEIS Volume I Chapter3, pages 94 to 95.

O-2 – In doing cow counts throughout the Western United States and examining actual use statements, we have found that nearly universally real actual use is significantly lower than permitted use in nearly every case we have examined. 50 to 75% of permitted is what we regularly find. Current conditions are the result of average actual use over a period of a number of years, not permitted use. The document fails to provide any accurate information regarding actual use, undermining the analyses of impact throughout the document.
RESPONSE: The interdisciplinary team used three years, 2005 - 2007 of permit information provided by Medora Grazing Association to describe past grazing use levels. Actual use is discussed in the SDEIS Volume I Chapter 3, pages 94 - 99.

O-3 -The document provides no clear information regarding pasture rotations and seasons of use. The document does give general information but is insufficient to understand what actually happens on a pasture by pasture basis to understand if it actually complies with LRMP requirements or basic range science. Such issues as winter feeding on public lands likewise has insufficient detail to understand the issue. The revised document needs to provide specific dates in which livestock are authorized to be in each pastor of each allotment and for deferred rotation situations that chart needs to provide this information for each of the years of the rotation. Further, the document seems to indicate that a number of allotments have multiple herds resulting in rotations far shorter than 1 would expect based on the number of pastures alone. So a 6 pasture rotation may in reality only be a free pasture rotation.
RESPONSE: Current and proposed pasture rotations and seasons of use under each alternative are summarized in the Botany specialist report, Appendix F, Table F3 based on information provided in AOIs. Hay feeding is discussed in the SDEIS Volume I Chapter 3, pages 196-197, 200, 206, and incorporated in the effects analysis for plant composition in Tables 3.28, 3.29, and 3.30. Hay feeding is also discussed in the Botany specialist report

Part A, pages 77, 80, 81, 84, 85, and 142. Individual allotments affected by hay feeding are discussed in the Botany specialist report Part B – Allotment Level Affects Analysis.

O-4 – The document is also vague on the issue of year-round or virtual year-round grazing taking place on public lands. Feeding operations are feedlots and are wholly inappropriate for our public lands. The severe impacts caused by these activities need to be far more adequately addressed in the NEPA document and eliminated in the ROD.
RESPONSE: Feedlots are not permitted on the National Grasslands. For each Grazing Association member, the type of grazing permit they hold dictates the length of the grazing season. For a description of the types of grazing permits, see SDEIS Volume I Chapter 3 pages 93 and 94. See Response to Comment O-3.

O-5 – Further, it appears that the Forest Service has turned over its responsibility of managing public lands to the grazing association by assuming that the Forest Service permitting process is subservient to the association permitting process. Whether the Association grants permits to its members for 8, 10 or 12 months each year is not controlling on how the Forest Service permits livestock on our public lands. The assumption that a 12 month Association permit must continue as a 12 month permit and that the Association dictates how are public lands are managed is not only absurd but legally tenuous at best.
RESPONSE: See SDEIS Volume I Chapter 3, page 93. The Forest Service issues a grazing permit to the Medora Grazing Association. The MGA then serves as the Forest Service's agent in the administration of the Grazing Agreement. However, the Forest Service retains final responsibility for management of the National Grasslands.

O-6 – It is clear from a reading of the documents that there are a wide range of severe impacts occurring on nearly all of these allotments. The Forest Service has a wide range of data showing severe impacts to riparian areas, vegetative conditions, woody areas and other resources yet fails to implement actions now that will effectively address these issues. The impacts analysis admits that improvement will not be made by the proposed actions, but put off effective actions to some unknown future. This is the usual Forest Service implementation of adaptive management where dealing with the issues now is put off to some undefined future date that never comes. We see this in Forest Service grazing process after process.
RESPONSE: Comment noted.

O-7 – Even alternative 4 fails to comply with LRMP requirements or NFMA. The ROD cannot put off compliance to some unknown future date based on further monitoring which the Forest Service has not committed to do.
RESPONSE: The Draft ROD proposes an allotment by allotment approach to decisionmaking and monitoring that will address allotment-specific goals and objectives (Draft ROD Decision and Rationale pages 8 to 16, and Appendices B and F).

O-8 – Invaded Grass state seems to be considered meeting desired conditions. And even those areas no considered "Invaded Grass" have shockingly high levels of invasive species but are considered fine.

RESPONSE: A site in the "invaded grass state" is not considered as meeting desired conditions. The SDEIS Volume I Chapter 3, pages 192 - 209 discuss the issues associated with increasing invasive grasses.

O-9 – A number of the allotments in question the Forest Service is actually increasing stocking rates based on the faulty stocking calculations in allotments currently seeing significant degradation. It is absurd to think that increasing stocking rates will decrease impact.
RESPONSE: In the SDEIS Volume I Chapter 3, pages 98 - 99, Table 3.5 displays the percent differences in proposed Authorized Use compared to Preference between the alternatives. As shown in Table 3.5, none of the allotments would receive an increase in Authorized Use as a result of this decision. See also SDEIS Appendix D, pages 7 - 8 for a discussion concerning adjusting Authorized Use.

O-10 – The requirements for improving conditions are rarely tied to the proposed actions. Such actions as further water developments will not increase high structure or improve seral condition. In addition while livestock to use Upland water developments, the research clearly shows that they do not reduce use of riparian areas because this use is based on other factors than just access to water.
RESPONSE: The analysis related to the effects of specific actions to the various resources is found throughout the allotment-by-allotment effects analysis in SDEIS Volume II Chapter 3. Further discussion about the effects of range management tools is found in SDEIS Appendix D.

Water developments were generally proposed for reasons other than attaining seral condition objectives and would not increase the distribution of seral stages across the project area (SDEIS Volume I Chapter 3, pages 200 - 206 and Botany specialist report Part A, pages 94, 103, and 114).

O-11 – The SDEIS states "A key component of this alternative is monitoring, because it determines whether implemented" yet fails to fully commit to the monitoring required for adaptive management.
RESPONSE: The Draft ROD (pages 11 - 12) discusses the Monitoring Plan, and further, in the ROD Appendix F where the monitoring protocols are outlined for the various resources. See Response to Comment M-1.

O-12 – As with all livestock related NEPA analyses within the Forest Service, this one touts the miraculous value of adaptive management. Unfortunately, the idea that adaptive management will somehow correct the current problems is a smokescreen. Nearly every single one of the so-called adaptive management actions listed in the document have been available to the Forest Service for decades. Nearly all of these actions can be implemented without NEPA, despite statements to the contrary within the document. Why have these actions not been taken to correct the problems currently seen? It is not for lack of NEPA analysis, it is from a lack of spine. Given that these actions have been available to the Forest Service for decades and have not been implemented the chances of this suppose it adaptive management process being implemented are slight to nonexistent. The result of this is that the current management alternative and the

proposed alternative are essentially identical and that the differences discussed in the various analyses have little basis in reality.
RESPONSE: There are clear differences between alternatives such as the adjustments in the permitted use seen between alternative 2 and alternative 4. See Alternatives Considered in Detail in the SDEIS Volume I Chapter 2, pages 43 to 49. See also Response to Comments C-3.20a and C-3.54.

O-13 – FSH 2209.13 91.1 requires:
"Under the National Forest Management Act (NFMA), project level decisions which authorize the use of specific National Forest System lands for a particular purpose like livestock grazing must be consistent with the broad programmatic direction established in the LRMP. Consistency is determined by examining whether the project level decision will implement the goals, objectives, desired conditions, standards and guidelines, and monitoring requirements from the LRMP."
A fundamental aspect of NEPA is to take a "hard look" at current management, conditions, assumptions and implementation. A NEPA document that fails to analyze the following violates the purposes of NEPA:
1) Validity of assumptions from previous NEPA processes
2) Accuracy of predictions from previous NEPA processes
3) Adequacy of Forest Service implementation of previous decisions
4) Permittee compliance with permit terms and conditions, AMP's, AOIs and other requirements
5) effectiveness of actions taken in previous decisions
These above items are absolutely critical to be part of this NEPA process. Without this critical link the validity of the current assumptions are baseless. Let's look at each one of these individually. Without analyzing the accuracy and validity of the assumptions used in previous NEPA processes one has no way to judge the accuracy and effectiveness of the current analysis and proposals. This vitiates the NEPA process.
The predictions made in previous NEPA processes also need to be disclosed and analyzed because if the accuracy was not there, most likely you are making the same predictions in the current process and as such the process again will be vitiated.
A review of the adequacy of the Forest Service's implementation of current AMP's, AOIs and Forest Plan standards is essential to a valid NEPA process. For instance, if in previous processes, the Forest Service said they were going to do a certain monitoring plan or implement a certain type of management or require certain impact limits, but if these were never effectively implemented, that is incredibly important for the reader and the decision maker to know. If there have been problems with Forest Service implementation in the past, it is not logical to assume that implementation will now all of a sudden the appropriate.
RESPONSE: Tiered and Reference documents are discussed and found in the SDEIS Volume I Chapter 1, pages 19 - 20. The "hard look" at current management is displayed in the existing condition found in the SDEIS Volume I Chapter 3 and in the allotment-by-allotment analysis in the SDEIS Volume II Chapter 3. The Deciding Officer demonstrates the "hard look" by choosing the alternative that best fits the context of a specific allotment's departure from a resource's existing condition and its desired condition.

O-14 – Another critical component is permittee compliance. If the permittee has failed to properly comply with their permit terms and conditions and AMP and AOI requirements, including utilization requirements, rotation requirements and fence maintenance then it is absolutely critical to discuss this in the document and its effects on the proposed action. Permittee failure to comply with permit terms and conditions and other requirements shows two things, firstly that the permittee has failed to implement even the minimal standards that are currently in place and secondly, it shows that the Forest Service has failed to take decisive permit action to ensure compliance. Both of these are very important aspects that must be discussed for a valid NEPA process, most especially when the FS as here is relying on adaptive management promises.
RESPONSE: Permittee compliance is discussed in the SDEIS Volume I Chapter 2, pages 54 - 55. The permittee (i.e. MGA member) and the MGA are responsible for on the ground implementation of the AOI and AMP with periodic compliance checks by the Forest Service.

O-15 – Another critical component is an examination of the effectiveness of the actions taken in previous decisions. A classic example of this is fences and water developments. Often, new fences and water developments are proposed to solve riparian issues in spite of the fact that these have been used for many decades without correcting riparian issues. Doing more of the same that has not lead to good results is not an effective strategy for public lands management.
RESPONSE: Management tools to address various issues are discussed in Appendix D (i.e. The Toolbox) of the SDEIS. On an allotment-by-allotment basis, the SDEIS Volume II Chapter 3 analyzes the effects of utilizing a specific tool in the context of existing conditions and effects to other resources.

O-16 – FSH 2209.13 93.3a requires:
"The team, using an interdisciplinary approach, should identify the desired rangeland conditions within the analysis area. <u>Desired conditions should be specific, quantifiable, and focused on rangeland resources</u>." (Emphasis added)
The EIS does not comply with this requirement. The so-called Desired Conditions in are general Forest Plan desired conditions and have not been made site-specific for the area in question and the issues in question.
RESPONSE: On page 9 of the Livestock Grazing ROD for the DPG (2006) it states that "Plan direction will be specifically implemented on individual grazing allotments..." The Desired conditions are also quantifiable and focused on rangeland resources. Deviations from these objectives are made where appropriate. Further, objectives and current conditions by resource issue are summarized for each allotment in the SDEIS Volume II Chapter 3, page 1 and in the ROD Appendix B. Current conditions and the contribution of proposed actions towards meeting each of the resource objectives are provided in the SDEIS Volume I Chapter 3, pages 73 - 223.

O-17 – FSH 2209.13 93.3c requires:
"Identification of resource management needs is simply the comparison of desired conditions with existing conditions to determine the extent and <u>rate at which current management is meeting or moving toward those desired conditions</u>." (emphasis added)

The EIS failed to meet this requirement. To say conditions are "moving toward" is meaningless without this information. For instance, everyone admits these lands were basically unmanaged until about the 1950's. Given how severely degraded these lands were up through that time, it would not be surprising that things look better than 1950, but is that "moving towards" sufficient?
RESPONSE: The analysis evaluated each of the alternatives relative to whether they would meet or move towards the desired conditions described in the Grasslands Plan. The discussion is not couched in terms of past conditions.

O-18 – FSH 2209.13 93.3f requires:
"There is a two-part decision to be made for authorizing livestock grazing. The first part is whether livestock grazing should be authorized on all, part, or none of the project area."
The SDEIS failed to provide any information at all regarding the first requirement. For instance, developed recreational sites are generally considered not suitable for livestock grazing due to their significant conflicts. The document *Rocky Mountain Region - Process Paper: A Process to Determine Capability and Suitability and Standards for NEPA Display* likewise discuss this issue.
RESPONSE: The decision concerning authorizing grazing was made within the Livestock Grazing ROD for the DPG (2006; page 9). The Grasslands Plan reflects this decision to permit grazing. For example, developed recreation sites (e.g. campgrounds) are not open to grazing unless it can be accommodated seasonally and "enhances the management of the site (Grasslands Plan 1-19)." Refer to Response to Comment C-3.3.

O-19 – As is universal within Forest Service grazing NEPA processes, the defining of the adaptive management process in this case is woefully inadequate. The SDEIS implements neither FSH 2209.13 and the R2 Quimby document. We request that you review the R2 Adaptive Management Guidance document which clearly defines the minimum level of adaptive management.
RESPONSE: The term "Adaptive Management" is defined and discussed in the SDEIS Volume I Chapter 1, pages 15 - 18. The definition is taken from 36 CFR 220.3.

O-20 – FSH 2209.13 93.3g defines adaptive management as:
Adaptive management is an interdisciplinary planning and implementation process that provides for: 1) identification of site specific desired conditions; 2) definition of appropriate decision criteria (constraints) to guide management; 3) identification of pre- determined optional courses of action, as part of a proposed action, from which to adjust management decisions over time; and 4) establishment of carefully focused project monitoring to be used to make adaptive adjustments in management over time.
RESPONSE: Table 4.1 of the SDEIS shows the interdisciplinary composition of the North Billings Interdisciplinary team. The specific design criteria for the action alternatives are found in the SDEIS Volume I Chapter 2 pages 48 - 50. The goals and objectives that define desired conditions and determine the potential departure from those conditions for each allotment are found in the SDEIS Volume I Chapter 1, pages 13 - 14. These goals and objectives for the various resources (riparian, woody draws, herbaceous cover, and seral stages) are discussed in the SDEIS Volume I Chapter 3 starting on page 111 and

proceeding through page 210. A set of "Adaptive Options" and monitoring guideines are identified for each allotment, see Draft ROD, Appendix B. The monitoring guides, in terms of frequency and intensity, are targeted toward the specific issues associated with that allotment. See also Response to Comments O-9 and O-11.

O-21 – As stated previously, the DC's laid out laid out in the EIS are general and not for specific benchmark areas and as such don't meet the requirement of the FSH. Additionally, as discussed in more detail in the Quimby document, "pre-determined" means "if this… then that", not just a general 'toolbox' with everything stuffed into it. And lastly, the EIS's "monitoring plan" could hardly be called "carefully focused**"**
RESPONSE: See Responses to Comments O-9, O-19, and O-20.

O-22 – We also include as an attachment a useful document written by the US Fish and Wildlife Service on how to write goals and objectives. This document meshes closely with the R2 document discussed above.
RESPONSE: See Response to Comment O-16. Goals and objectives for each resource issue were established in the LRMP and are summarized in the SDEIS Volume I Chapter 3.

O-23 – Virtually every so-called "tool" the Forest Service wishes to have as part of adaptive management, has been available to it for decades. Most of these tools are part of the normal permit administration process.
RESPONSE: See Response to Comment O-24.

O-24 – The falsity of the Forest Service's purported need for "flexibility" is clearly exposed in FSH 2209.13 – 92 which states:
"The majority of these changes can be implemented administratively, provided the changes do not fall outside the scope of the NEPA decision. Examples of actions that may be taken without further NEPA analysis include alteration of management to respond to Biological Opinions or other ESA, Clean Water Act, or other consultation requirements; changes in specific dates of grazing, class of livestock to be grazed, grazing systems, or livestock numbers based on evaluation of monitoring results; and, implementation of the LRMP through modifications to the term grazing permit. Administrative actions to implement higher level decisions or to respond to monitoring results should be undertaken as a routine administrative action prior to initiating NEPA."
RESPONSE: The FSH you refer to comes from the Region 2 Forest Service Handbook 2209.13, Chapter 90. However, both the Region 2 handbook and the Washington Office handbook emphasize that administrative actions need to fall within the limits, or scope, of the NEPA analysis and decision. The Purpose and Need define the scope of the NEPA analysis. To see the Purpose and Need, go to SDEIS Volume I Chapter 1, pages 11 - 12 or see the ROD, p. 5. We know that there is some uncertainty that all of the initial actions prescribed will have the desired rates and of type of effects on the resources. Therefore, the Forest Service feels that Adaptive Management tools described can provide the most efficient and effective approach if monitoring deems a change in management is necessary.

O-25 – In the species calls sections the Forest Service lists most species as "may adversely impact individuals, but not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or loss of species of viability range wide" but the document fails to provide any information regarding current populations or trends which is of course fundamental to a supportable call. For instance, if there are 30 individual plants of a particular species in the planning area or even in the forest as a whole is that a viable population? Would affecting 6 of those individuals not likely result in a loss of viability, assuming viability currently exists? This information is not provided.
RESPONSE: The full language of the "may impact" determination is "*may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.*" Under the action, or adaptive management, alternatives (i.e. Alternatives 3, 3a and 4) the habitat is expected to improve. This will result in habitat improvement for some species such as Baird's sparrow and Sprague's pipit. As stated in the new Planning Rule (2012), the Forest Service believes that by "working towards diverse, interconnected ecosystems with ecological integrity…that over time, management will create ecological conditions which support the abundance, distribution, and long-term persistence of most native species (Federal Register, Volume 77, No. 68).

Further, data of known sensitive plant populations in the project area indicates they have remained viable under current livestock management and the proposed management changes would not have any direct adverse effects on the population sites (SDEIS Volume I Chapter 1, pages 29 - 30).

O-26 – The EIS fails to discuss actual use within the allotments. The supposed 'actual use' provided by the grazing association cannot be relied on. Actual use is critical because frequently actual use is significantly lower than permitted use. Therefore the analyses of current conditions must be based on the fact of actual use not permitted use. For instance if 1000 head are permitted on a particular allotment but the 20 year average is only 500 head then current conditions are, of course, the result of actual use half that of permitted use. So analyses based on full permitted use would be vitiated. Such information is fundamental to a valid NEPA process.
RESPONSE: See Response to Comment O-2.

O-27 – Also, obviously, cuts would need to be based off of actual use not permitted use.
RESPONSE: See Response to Comment O-2.

O-28 – As is often the case with NEPA processes implementing adaptive management, we found no evidence within the NEPA document that the range of actions proposed as adaptive management had been actually analyzed for impacts or effectiveness. Further, we found no specific monitoring or measurable triggers or timelines which are necessary to define the adaptive management process. Adaptive management is solely based on monitoring as its foundation yet the Forest Service provided no commitment to conduct this monitoring.
RESPONSE: The discussion on the adaptive management actions (i.e. Toolbox) is found in SDEIS Volume 3 Appendix D.

The proposed Initial and Adaptive Options are evaluated with respect to each resource issue on an allotment level basis in the SDEIS Volume II Chapter 3. Trigger points and timelines are provided in the SDEIS Volume I Chapter 2, pages 56 - 62. Monitoring schedules are also provided in the Allotment level summaries within the ROD. The ROD recognizes that monitoring is the "foundation for adaptive management (ROD page 15)." The ROD (pages 11 - 12) also discusses the Trigger Points for Change and the Monitoring Plan and in ROD Appendix F the monitoring protocols are outlined for the various objectives.

O-29 – The impact section regarding water quality ignores the issue of E. coli contamination.
RESPONSE: The discussion about water quality and fecal coliform is in the SDEIS Volume I Chapter 1, pages 41 - 42. See also SDEIS Volume I Chapter 2, pages 55 - 56.

O-30 – FSH 2209.13 94.2 requires:
"The evaluation of a proposed action's environmental effects must include the potential effects of all adaptive management options that may be implemented at some future point in time. For example if one potential option is to fence off a riparian area, the effects of that fence must be evaluated even if that management option may never actually be implemented." This was not done.
RESPONSE: The range of potential effects of all the available tools is discussed in the SDEIS Volume II Chapter 3, and discussed again in SDEIS Volume III Appendix D.

O-31 – We found no map of areas meeting or not meeting desired conditions.
RESPONSE: Summaries of existing conditions by allotment for each resource issue are provided under discussions of existing conditions in the SDEIS Volume I Chapter 3: Riparian pages (115-119), Woody draws page (135-143), Herbaceous Structure pages (166-177), Seral Stages (see Botany specialist report Part A, pages 46 - 49). Existing conditions of each resource issue by allotment are also provided in the allotment summaries included with the ROD (Appendix B) and the SDEIS Volume II Chapter 3.

O-32 – Again for the most of the short or long-term monitoring we found no commitment, triggers or measurable objectives, despite the fact that monitoring is required for adaptive management.
RESPONSE: See Response to Comment O-28.

O-33 – The MIS section fails to comply with the extensive case law regarding management and analysis of MIS species. We request that they Forest Service read through this wide range of case law and correct its analysis in order to comply with NEPA and NFMA.
RESPONSE: The sharp-tailed grouse is analyzed in SDEIS Volume I Chapter 3, pages 210 - 224. The R2 MIS "Checklist" for decision-makers provided by your organization was reviewed and, under that document, it affirms that the SDEIS provides the necessary information necessary to evaluate the MIS in light of the project. Refer to Response to Comment C-3.64.

O-34 – The EIS states that general capability and suitability determinations were made at the

Forest Plan level, but ignores the requirements of FSH 2209.13 – 91 which states:
"Although an area may be deemed suitable for use by livestock in a LRMP, a project level decision evaluating the site-specific impacts of the grazing activity, in conformance with the National Environmental Policy Act (NEPA), is required in order to authorize livestock grazing on specific allotment(s)"
And it appears that non capable acres were used in the stocking capacity calculations. "These allotments cover approximately 87,262 acres of NFS land with approximately 70,871 of those acres being capable of sustaining grazing, as determined by the 2001 Northern Great Plains FEIS."
RESPONSE: In the SDEIS all lands in the grazing allotments were analyzed as suitable in calculating the carrying capacity (Volume I Chapter 3, pages 86-87). This followed the SRT recommendation of assigning forage production values to all ecological sites within the project area (SDEIS Volume I Chapter 3, page 89 and Volume III Appendix C, SRT Recommendation I-2). Carrying capacity adjustments were not made for unsuitable terrain as suggested in SRT Recommendation I-2, but monitoring will determine whether further adjustments or actions are needed to meet goals and objectives within individual allotments (Volume I Chapter 3, page 88). Refer to Response to Comment C-3.171.

O-35 – The SDEIS states "High Structure is defined as a VOR reading greater than 3.5 inches." But conflates this with the needs of species such as sharp-tail grouse assuming that this 3.5" Robel Pole meets the cover needs of this species. This is not supported by the literature.
RESPONSE: The VOR reading is an average of a twenty station transect and this average does not represent site specific needs of grouse such as for a nesting site (e.g. Kohn et al 1981). At the request of the Scientific Review Team, the Forest Service now displays station data and transect data (SDEIS Volume I Chapter 3, page 174). This helps provide a more refined picture of the available habitat. See Appendix H of the Grasslands Plan for more MIS habitat information.

O-36 – Although the NEPA document states that "the project's main focus is to determine whether or not livestock grazing should continue on the proposed allotments", but nowhere within the NEPA document was there any examination whether livestock should not be continued.
RESPONSE: The no grazing alternative was evaluated with respect to each resource issue in the SDEIS Volume I Chapter 3: Range, page 101; Riparian, page 120; Woody Draws, pages 148 - 149; Herbaceous Structure, page 178; Seral Stages, pages 195 - 196; Sharp Tailed Grouse, pages 214 - 215; and Economics, pages 243 - 244.

O-37 – The Forest Service's GTR-INT-263 specifically states "a 6 step planning process for grazing riparian zones has been suggested (in part from Dwyer and others 1984): 1) determine what factor, such as bank instability or loss of woody plants, is the primary concern, 2) determine site potential in capability, 3) determine the suitability of the affected sites for livestock grazing, 4) determine the kind in class of livestock in duration and intensity of livestock grazing best suited to the area, 5) determine the best grazing strategy, and 6) apply the proper grazing intensity in keeping with animal distribution patterns" this was not done.

The same reference states "special situations such as critical fisheries habitats or easily eroded stream banks may require stubble heights of greater than 6 inches". It further goes on to state "degraded riparian areas may require complete rest to initiate the recovery process. In systems requiring long-term rest, the rest. Will be highly variable depending on the situation. It may be as short as one year or it may be 15 years or longer. Recovery of degraded stream bank form usually will require more time than the recovery of plant community composition, in some cases much more time, particularly if the channel has become incised and confined." It continues "however, no rotation system will allow recovery or maintenance of the riparian system unless all livestock are removed after the use period. In any event, rest rotation or any other conventional grazing system should not be considered the sole answer to riparian grazing needs."
This document on page 3 lists "suggested initial actions" based on ecological status and channel type. It states that for "B channel types with medium to fine easily eroded soil materials and most C channel types: apply rest until the ecological status improves". This is where many of the streams within the project area fall. It continues for areas with habitats were threatened, endangered or sensitive species "or where a stream banks/channels are highly erodible: the herbaceous stubble height criterion may need to be increased to greater than 6 inches"
RESPONSE: Riparian resources are discussed in the SDEIS Volume I Chapter 3, pages 111 - 130. Several riparian reaches under Alternative 3 and 4 are proposed for fencing to create riparian pastures where the length and intensity of grazing seasons can be closely managed to improve existing conditions (SDEIS Volume II Chapter 3).

O-38 – BLM researcher Lewis H. Myers conducted a review of grazing systems and their success in improving riparian conditions stated that "insist upon strict grazing system compliance. A few cattle remaining in a pasture after the prescribed use. Can negate the benefit of a good system. Stray animals invariably spend the bulk of their time in stream bottoms. 90% compliance with a grazing system is not adequate."
RESPONSE: Implementation monitoring as outlined in the SDEIS Volume I Summary pages xix-xx, and Chapter 2 pages 53 - 54 are designed to ensure that AOIs are followed.

O-39 – Forest Service researcher William S. Platts in *Compatibility of Livestock Grazing Strategies with Fisheries* 1989 found that deferred-rotation to be only "fair" at restoring degraded riparian conditions. It also found this system rated as 4 on a scale of 1 to 10.
RESPONSE: The effects analysis of the alternatives on riparian conditions can be found in the SDEIS, Volume I Chapter 3, pages 120 - 123, and Volume II Chapter 3.

O-40 – In the recently issued BLM/FS publication TR 1737-20 Grazing Management Processes and Strategies for Riparian and Wetland Areas, which states "He (Myers 1989a) found that successful treatments averaged only 12.5 days whereas on successful treatments averaged 33.4 days" discussing the duration of hot season grazing used within riparian areas. This document also goes into detail regarding the development of riparian objectives and monitoring programs which have been ignored in the current process.
RESPONSE: Objectives of the LRMP include maintaining or moving 80 percent of riparian areas to PFC conditions (LRMP page 1 - 2). Monitoring schedules and trigger points for riparian conditions are discussed in the SDEIS Volume I Chapter 2, pages 56 to

57. Existing conditions and effects analysis of the alternatives on riparian conditions are summarized in the SDEIS Volume I Chapter 3, pages 115 - 130, and evaluated in specific detail at the allotment level in the SDEIS Volume II Chapter 3.

O-41 – The programmatic agreement between the Forest Service and SHPO requires a Class III survey within all areas of overlap between livestock concentration areas, including riparian areas and areas with a high probability for cultural resources. The NEPA document does not provide information to indicate that these class III surveys have been completed or if completed what the results were.
RESPONSE: The SDEIS summarizes the Archeology specialist report (Volume I Chapter 1, pages 26 - 28) that concluded that about 13 percent of sites in the project area had experienced severe effects from livestock and oil and gas production. Potential future adverse effects to cultural resources are mitigated through pre-disturbance field surveys and identification of alternate project locations.

The North Dakota State Historic Preservation Officer reviewed the Grasslands Archeology report and concurred with a No Adverse Effect" (SDEIS Volume I Chapter 1, page 28).

O-42 – In this section we see that most of the soils within the project area have a moderate to severe compaction hazard but we do not see a translation of this fact into specific management direction to deal with that. The same is true for erosion.
RESPONSE: SDEIS Volume I Chapter 1, page 38, Soils: Table 1.6 Soil Stability and Hydrologic Function, lists almost all of the sites in the project area are in Categories 4 and 5. Category 4 is a moderate to slight departure and Category 5 is a slight to no departure from reference conditions. Also, soil compaction studies conducted on the LMNG concluded that soil compaction problems were concentrated on localized portions of the landscape involving watering sites, corrals, and regularly used trails that comprise well less than 15 percent of the project area or individual allotments (SDEIS Volume I Chapter 1, page 36).

O-43 – In the recreation section we see that the document states "user-friendly gates are needed wherever forest system trails intersect livestock fences" but this has not been translated into action within the proposed action.
RESPONSE: Current trail systems throughout the DPG utilize user-friendly gates.

O-44 – In addition, this section states "several salting sites within the Bridger Wilderness… have caused visual impacts and riparian concerns" but no actions have been implemented to correct this nor are there management requirements implemented to avoid this in the future.
RESPONSE: A design criteria common to all allotments involves placing all salt and supplement away from woodlands and riparian areas (SDEIS Volume I Summary, page xviii).

O-45 – This entire Technical Reference, which is co-authored by the Forest Service, needs to be fully reviewed and implemented. The section starting on page 11 has further details regarding appropriate objective writing.

RESPONSE: Resource objectives of the SDEIS are based on goals and objectives outlined for the various resources.

O-46 – The document fails to comply with BAS requirements as it ignores the vast range of riparian and upland management research.
RESPONSE: Riparian areas were evaluated with PFC (Proper Functioning Condition) surveys using established protocol and interdisciplinary teams (SDEIS Volume I Chapter 3, page 113 - 114). Hydrologic and grazing effects principles were used to evaluate likely trends in riparian condition associated with effects of proposed alternatives (SDEIS Volume II Chapter 3).

The SDEIS Volume I Chapter 3 incorporated the best available science in evaluations of upland conditions involving woody draws (pages 130 - 165) herbaceous structure (pages 166 - 186), and seral stages (pages 186 - 210). These principles were incorporated in the allotment level effects analysis in the SDEIS Volume II Chapter 3. References to the current science are included in the specialist reports for all of the above issues.

Resource objectives of the SDEIS are based on goals and objectives outlined in the Grasslands Plan for the various resources.