

Appendix K

Glossary

This page intentionally left blank

Abundance: The number of organisms in a population, combining density within inhabited areas and number and size of inhabited areas.

Adaptive Management: 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 reevaluated. Adaptive management stems from the recognition that knowledge about natural resource systems is sometimes uncertain.

Adsorption: The adhesion of gas, liquid, or dissolved solid particles to a surface.

Alkaline: Having a pH greater than 7.0.

Allelopathy: The inhibition of growth in one plant species by chemicals produced by another plant. For example, other plants will often not grow underneath black walnut trees, since these trees produce a chemical inhibiting plant respiration.

Alluvial: Pertaining to material that is transported and deposited by running water. ALS Inhibitor: Herbicides that inhibit acetolactate synthase (ALS), the enzyme common to the biosynthesis of branch-chain amino acids. These include imazamox, imazapic, metsulfuron methyl, and chlorsulfuron.

Aquifer: A geologic formation or structure that transmits water in sufficient quantity to supply the needs for a water development, such as a well.

Basal: see Rosette

Best Management Practice (BMP): A practice or combination of practices, that is determined by a State (or designated area-wide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation to be the most effective, practical (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

Biological Control: Intentional actions to foster the reduction of pest populations by natural competitors, predators, or parasites (often referred to as agents), thereby providing a sustainable and highly selective solution to many widely spread infestations. Release of natural competitors might enhance control and reduce the rate of expansion of large existing infestations. While most often involving the use of insect agents, fungi, and other microbes, such as the bacterial insecticide *Bacillus thuringiensis* var. *kurstaki* (Btk) can also provide biological control

Biomass: The total weight of all living organisms or specific group of organisms in a biological community.

Broadcast Application: An herbicide application of over an entire area or field rather than only on rows, beds, or individual plants

Buffer: A vegetative strip or management zone of varying size, shape, and character maintained along a stream, lake, road, recreation site, and different vegetation zone to mitigate the impacts of actions on adjacent lands, to enhance aesthetic values, or as a best management practice.

Candidate Species: Those plant and animal species that, in the opinion of the Fish and Wildlife Service, may become endangered or threatened.

Carrying Capacity: The maximum population size that can be supported indefinitely by a given environment.

Channel aggradation: An increase in the elevation of the stream bed as a result of deposition of sediment.

Clay soil texture: A soil texture type consisting of 40 percent or more clay-sized particles, less than 40 percent silt-sized particles and less than 45 percent sand-sized particles.

Control: With respect to invasive species (plant, pathogen, vertebrate, or invertebrate species), control is defined as any activity or action taken to reduce the population, contain, limit the spread, or reduce the effects of an invasive species. Control activities are generally directed at established free-living infestations, and may not necessarily be intended to eradicate the targeted infestation in all cases.

Cover: canopy space occupied by a particular species, plant type, or community

Cryptogamic soil crust: A community of cyanobacteria, mosses, and lichens on the soil surface, also known as biological soil crust. Biological soil crusts play important ecological roles in soil stabilization, carbon fixation, nitrogen fixation, and plant germination.

Designated use: Those uses specified in water quality standards for each water body or segment whether or not they are being attained.

Distribution: The spatial range of a species, usually on a geographic but sometimes on a smaller scale, or the arrangement or spatial pattern of a species over its habitat.

Disturbance: Any event, such as forest fire or insect infestations that alter the structure, composition, or functions of an ecosystem.

Diversion: The removal of water from its natural course or location by means of a ditch, canal, pipeline, or other conduit.

Drift: The movement of airborne particles by air motion or wind away from the intended target area.

Early Detection: The process of finding, identifying, and quantifying new, small, or previously unknown infestations of aquatic or terrestrial invasive species prior to (or in the initial stages of) its establishment as free-living expanding population. Early detection of an invasive species is typically coupled with integrated activities to rapidly assess and respond with quick and immediate actions to eradicate, control, or contain it.

Ecological Stage: see successional stage.

Ecosystem: A community of living organisms (plants, animals, and microbes) in conjunction with the nonliving components of their environment (i.e., air, water, and mineral soil), interacting as a system. These components are regarded as linked together through nutrient cycles and energy flows.

Emergence: The act of germinating seedling's breaking through the soil surface.

Ephemeral stream: A stream or portion of a stream that flows only in direct response to precipitation. It receives little or no water from springs and no long-continued supply from snow or other sources. Its channel is at all times above the water table.

Endangered Species: Any species in danger of extinction throughout all or a significant portion of its range. This does not include a species of the Class Insecta determined by the Secretary to be a pest whose protection under the provisions of the Endangered Species Act of 1973, as amended, would present an overwhelming and overriding risk to humans.

Endangered Species Act (ESA): The ESA provides for the conservation of threatened and endangered species of plants and animals. The ESA requires Federal agencies to ensure that actions (including pesticide use) they authorize, fund, or carry out are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction of adverse modification of the species' critical habitat. The ESA also amended FIFRA to define imminent hazard to include situations involving unreasonable hazard to the survival of a species declared by the Secretary of the Interior to be endangered or threatened.

Endemic: A plant or animal that occurs naturally in a certain region and whose distribution is relatively limited geographically.

Eradication: With respect to invasive species (plant, pathogen, vertebrate, or invertebrate species), eradication is defined as the removal or elimination of the last remaining individual invasive species in the target infestation on a given site. It is determined to be complete when the target species is absent from the site for a continuous time period (that is, several years after the last individual was observed). Eradication of an infestation of invasive species is relative to the time-frame provided for the treatment procedures. Considering the need for multiple treatments over time, certain populations can be eradicated using proper integrated management techniques.

Establishment: Initiation of a free-living, reproducing population of an invasive species.

Estimated Environmental Concentration: The predicted concentration of a pesticide within an environmental compartment based on estimates of qualities released, discharge patterns and inherent disposition of the pesticide (fate and distribution) as well as the nature of the specific receiving ecosystems.

Exposure Scenario: Exposure scenarios consider both the toxicity of a given chemical and the mechanism by which an organism may encounter it. The application rate and method influences whether a person, animal or non-target plant could be adversely affected by exposure to a particular herbicide.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): This act provides the authority for the registration, distribution, sale, shipment, receipt, and use of pesticides. The Forest Service may only use pesticides registered or otherwise permitted in accordance with this Act. The FIFRA directs the Secretary of Agriculture, in cooperation with the Administrator of the U. S. Environmental Protection Agency (EPA), to implement research, demonstration, and education programs to support adoption of Integrated Pest Management (IPM), and to make information on IPM widely available to pesticide users, including Federal agencies. Federal agencies shall use IPM techniques in carrying out pest management activities and shall promote IPM through procurement and regulatory policies and other activities.

Floodplain: The lowland and relatively flat areas adjoining inland waters that are covered by its waters during flooding.

Forb: A broad-leaved herb that is not a graminoid.

Graminoid: Grasses which are botanically, any plant of the Gramineae family. Grasses are characterized by narrow leaves with parallel veins; by leaves composed of blade, sheath, and ligule; by jointed stems and fibrous roots; and by inconspicuous flowers usually arranged in spikelets.)

Half-life: The time required for half of something to undergo a process. As used in this document, it is the amount of time for half the herbicide to break down, becoming ineffective.

Hazard Quotient (HQ): The Hazard Quotient is the amount of herbicide or additives to which an organism may be exposed over a specified period divided by that estimated daily exposure level at which no adverse health effects are likely to occur. An HQ less than or equal to one indicates an extremely low level of risk; therefore, an HQ less than or equal to one is presumed to indicate a level of exposure below the level of concern (LOC) for adverse health effects.

Herbicide: Any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.)

Hydrolysis: The chemical breakdown of a compound due to reaction with water.

Infiltration: The movement of water into the soil through pores or other openings.

Infestation: An invasive species population within a specified area.

Integrated Pest Management (IPM): A pest (in this context an invasive species) control strategy based on the determination of an economic, human health, or environmental threshold that indicates when a pest population is approaching the level at which control measures are necessary to prevent a decline in the desired conditions (economic or environmental factors). In principle, IPM is an ecologically-based holistic strategy that relies on natural mortality factors, such as natural enemies, weather, and environmental management, and seeks control tactics that disrupt these factors as little as possible. Integrated pest management techniques are defined within four broad categories: 1) Biological, 2) Cultural, 3) Mechanical/Physical, and 4) Chemical techniques.

Intermittent stream: Streams which, in general, flow during wet seasons and are dry during dry seasons. Flow is derived principally from surface runoff, but during wet seasons receives a contribution from groundwater.

Interstitial: referring to an opening or space, especially open spaces between plants.

Introduction: The initial movement of a species to any location outside of its documented native geographical range.

Invasive Plant Management: Any activity that directly intervenes to minimize the spread and adverse effects of an invasive species, including preventing, controlling, containing, eradicating, surveying, detecting, identifying, inventorying, and monitoring invasive species; rehabilitating and restoring affected sites; and providing technical outreach and educational activities related to invasive species. Management actions in the National Forest System are based upon species-specific or site-specific plans (including forest plans, integrated pest management plans, watershed restoration plans, and so forth), and support the accomplishment of plan goals and objectives and achieve successful restoration or protection of priority areas identified in the respective plan(s).

Invasive Species: Executive Order 13112 defines an invasive species as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” The Forest Service relies on Executive Order 13112 to provide the basis for labeling certain organisms as invasive. Based on this definition, the labeling of a species as “invasive” requires closely examining both the origin and effects of the species. The key is that the species must cause, or be likely to cause, harm and be exotic to the ecosystem it has infested before we can consider labeling it as “invasive”. Thus, native pests are not considered “invasive”, even though they may cause harm. Invasive species infest both aquatic and terrestrial areas and can be identified within any of the following four taxonomic categories: Plants, Vertebrates, Invertebrates, and Pathogens. Additional information on this definition can be found in Executive Order 13112.

Invasive Species Management: Activities to prevent, control, contain, eradicate, survey, detect, identify, inventory, and monitor invasive species; includes rehabilitation and restoration of affected sites and educational activities related to invasive species. Management actions are based upon species-specific or site-specific plans (including forest plans, IPM plans, watershed restoration plans, and so forth), and support the accomplishment of plan goals and objectives and achieve successful restoration or protection of priority areas identified in the respective plan(s).

Inventory: Invasive species inventories are generally defined as the observance and collection of information related to the occurrence, population or infestation of the detected species across the landscape or with respect to a more narrowly-defined area or site. Inventory attributes and purposes will vary, but are typically designed to meet specific management objectives which need information about the extent of an invasive species infestation. Inventories are typically conducted to quantify the extent of, and other attributes related to, infestations identified during survey activities.

Landtype (US Forest Service usage): Visually identifiable unit areas resulting from homogeneous geomorphic and climatic processes and having defined patterns of soils and vegetative potentials. Landtype units range in size from about one-tenth to one square mile. Their size and composition depend upon the significance of physical characteristics which can be readily interpreted to identify hazard, capability and productivity potentials that are reliable for land use planning purposes. Landtype units generally have uniform management response characteristics and so can be used to identify areas for which zoning and resource allocation decisions can be made.

Leaching: The process by which materials in the soil (such as nutrients or pesticides) are washed downward into the soil by the movement of water.

LC₅₀-Median Lethal Concentration: The statistically derived concentration of a pesticide in an environmental medium expected to kill 50 percent of test organisms in a given population

Level of Concern (LOC): An estimate of exposure above which there may be adverse effects; in risk assessments this is defined as a hazard quotient (HQ) of more than one.

Listed Species: Any species of fish, wildlife, or plant officially designated as endangered or threatened by the Secretary of the Interior or Commerce.

Litter: The uppermost slightly decayed layer of organic matter on the forest floor or, more generally, beneath any plants.

Loamy soil texture: A soil that is a mixture of sand, silt, and clay-sized particles.

Lowest Observed Effect Level (LOEL): The lowest exposure concentration associated with an adverse effect.

Maximum Acceptable Toxicant Concentration (MATC): A value that is calculated through aquatic toxicity tests to help set water quality regulations for the protection of aquatic life. Using the results of a partial life-cycle chronic toxicity test, the MATC is reported as the geometric mean between the No Observed Effect Concentration (NOEC) and the Lowest Observed Effect Concentration (LOEC).

Mechanical control: Physical removal of invasive species by hand-pulling small infestations before flowers have bloomed, tilling larger infestations for several years, removing infested trees, squashing insect pests, etc.

Monitoring: For the purposes of invasive species program performance and accountability, the term “monitoring” refers to the observance and recording of information related to the responses to treating an invasive species infestation, and reported as treatment efficacy. By monitoring the

treatment results over time, a measure of overall programmatic treatment efficacy can be determined and an adaptive management process can be used in subsequent treatment activities.

Monoculture: the cultivation or growth of a single crop or organism especially on agricultural or forest land.

Mortality: Refers to the rate of death of a species in a given population or community.

Municipal Watershed: A watershed that serves a public water system as defined in the Safe Drinking Water Act of 1974, as amended (42 U.S.C. §§ 300f, et seq.); or as defined in state safe drinking water statutes or regulations.

Mycorrhiza: A symbiotic association between a fungus and the roots of vascular plants.

Native Species: A species living or growing naturally in a particular place or region; indigenous, not introduced.

Niche: 1) The role played by (occupation or profession) and the address of a particular species in its ecosystem; 2) the range of conditions, resource levels and densities of other species allowing survival, growth and reproduction of organisms or species.

No Observed Adverse Effect Level (Human Health Risk Assessment)/No Observed Adverse Effect Concentration (Ecological Risk Assessment) (NOAEL/NOAEC): Effects that are attributable to treatment but do not appear to impair the organisms ability to function and clearly do not lead to such impairment.

Non-native (introduced) species: Any organism that is not native to the ecosystem being considered.

Nonpoint source pollution: Diffuse sources of water pollution that originate from many indefinable sources and normally include agricultural and urban runoff, runoff from construction activities, and so forth. In practical terms, nonpoint sources do not discharge at a specific, single location (such as a single pipe). Nonpoint source pollutants are generally carried over or through the soil and ground cover via stormflow processes. Unlike point sources of pollution (such as industrial and municipal effluent discharge pipes), nonpoint sources are diffuse and can come from any land area

Non-native (introduced) species: Any organism that is not native to the ecosystem being considered.

Non-selective Herbicide: Chemicals or formulations that destroy or prevent plant life in general without regard to species.

Non-target Species: Plant species not singled out for management or control, may be native or non-native.

Noxious Weed: The term “noxious weed” is defined for the Federal Government in the Plant Protection Act of 2000 and in some individual State statutes. For purposes of this chapter, the term has the same meaning as found in the Plant Protection Act of 2000 as follows: The term “noxious weed” means any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment. The term typically describes species of plants that have been determined to be undesirable or injurious in some capacity. Federal noxious weeds are regulated by USDA-Animal and Plant Health Inspection Service under the Plant Protection Act of 2000, which superseded the Federal Noxious Weed Act of 1974. State statues for noxious weeds vary widely,

with some States lacking any laws defining or regulating noxious weeds. Depending on the individual State law, some plants listed by a State statute as “noxious” may be native plants which that State has determined to be undesirable. When the species are native, they are not considered invasive species by the Federal Government. However, in most cases, State noxious weed lists include only exotic (non-native) species.

Overland Flow: The rain storm or snow melt runoff water which flows over the ground surface as a thin layer, as opposed to the channelized (concentrated) runoff which occurs in rills and gulleys.

Peak flow: The maximum volume of flow attained at a given point in a stream during a runoff event.

Percolation: The downward movement of water within a soil, especially the downward flow of water in saturated or nearly saturated soil.

Perennial stream: A stream that has permanently present surface water. Flows occur throughout the year except possibly during extreme drought or during extreme cold when ice forms.

Persistence: The length of time an herbicide remains active in the soil.

Physiological: characteristic of or appropriate to an organism's healthy or normal biological and chemical functioning

Photodegradation: Degradation by means of radiant energy (as light).

Photolysis: Chemical decomposition by the action of radiant energy (as light).

Plant Community: The species that occur together in space and time.

Plausible Effects: The analysis focuses on whether effects that are possible based on risk assessments are plausible, given site conditions, herbicide application methods and Design Criteria. Design Criteria are used to minimize or eliminate the plausibility of effects identified in the risk assessments.

Population: Any group of individuals, usually of a single species, occupying a given area at the same time.

Prevention: Prevention measures for invasive species management programs include a wide range of actions and activities to reduce or eliminate the chance of an invasive species entering or becoming established in a particular area. Preventative activities can include projects for education and awareness as well as more traditional prevention activities such as vehicle/equipment cleaning, boat inspections, or native plant restoration plantings. Restoration activities typically prevent invasive species infestations by improving site resilience, and reducing or eliminating the conditions on a site that may facilitate or promote invasive species establishment.

Range: see distribution

Rapid Response: With respect to invasive species (plant, pathogen, vertebrate, or invertebrate species), rapid responses are defined as the quick and immediate actions taken to eradicate, control, or contain infestations that must be completed within a relatively short time to maximize the biological and economic effectiveness against the targeted invasive species. Depending on the risk of the targeted invasive species, rapid response actions may be supported by an emergency situation determination and emergency considerations would include the geographic extent of the infestation, distance from other known infestations, mobility and rate of spread of the invasive species, threat level and potential impacts, and available treatments.

Reference Dose (RfD): A defined level that is not believed to be associated with any adverse effect. Both chronic and acute RfDs are characterized in risk assessments.

Regime: A prevailing pattern of events over time, especially of disturbance and climate.

Residual Activity: An herbicide that prevents the growth of plants when present in the soil. Soil residual effects may be temporary or relatively permanent.

Resilience: Capacity of an ecosystem to respond to a perturbation or disturbance by resisting damage and recovering quickly.

Restoration & Rehabilitation: Following a disturbance, the active or passive management of an ecosystem or habitat to restore ecosystem structure and function and prevent re-invasion by improving site resilience and reducing or eliminating the conditions on a site that might facilitate or promote invasive species establishment.

Restored: With respect to performance specifically, the invasive species program is driven by an outcome-based performance measure centered on 'restoration'. An area treated (see "treatment" definition) against invasive species has been 'restored' when the targeted invasive species defined in the project plan was controlled or eradicated directly as a result of the treatment activity. In some instances, actions taken across particular areas to prevent the establishment and spread of specific invasive species are also included in this treatment definition. 'Restored' acres are a subset of 'treated' acres, which are tracked annually to determine the effectiveness of treatments. Preventing, controlling, or eradicating invasive species assists in the recovery of the area's resilience and the capacity of a system to adapt to change if the environment where the system exists has been degraded, damaged, or destroyed (in this case by invasive species); and helps to reestablish ecosystem functions by modifying or managing composition and processes necessary to make terrestrial and aquatic ecosystems sustainable, and resilient, under current and future conditions (as described in FSM 2020). In most cases, this is a performance measure defined in the project plan, and project managers have the flexibility to set the parameters for determining when the treated areas have been restored. Absence of an individual invasive species organism, whether through eradication or prevention efforts, is most often the criteria used to determine when acres have been restored. Monitoring treatment efficacy is critical to reporting invasive species management performance.

Resilience: The capacity of an ecosystem to absorb disturbance and reorganize while undergoing change, so as to still retain essentially the same function, structure, identity, and feedbacks. By working toward the goals of diverse native ecosystems that are connected and can absorb disturbance, it is expected that over time, management would create ecological conditions that support the abundance and distribution of native species within a geographic area to provide for native plant and animal diversity.

Restoration & Rehabilitation: Following a disturbance, the active or passive management of an ecosystem or habitat to restore ecosystem structure and function and prevent re-invasion by improving site resilience and reducing or eliminating the conditions on a site that might facilitate or promote invasive species establishment.

Rhizomatous: Having a persistent underground root system from which a plant can produce new shoots even if the original plant is cut down.

Riparian Area: Geographically delineable areas with distinctive resource values and characteristics that are comprised of the aquatic and riparian ecosystems.

Riparian Ecosystems: A transition area between the aquatic ecosystem and the adjacent terrestrial ecosystem; identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

Riparian Habitat Conservation Area (RHCA): Portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris, and nutrient delivery systems.

Riparian Management Objective (RMO): Quantifiable measures of stream and stream-side conditions that define good anadromous fish habitat, and serve as indicators against which attainment, or progress toward attainment, of the goals will be measured.

Risk assessments: a qualitative evaluation of the probability that the use of herbicide may pose a risk to human health or the environment. They contain:

Hazard Characterization- What are the dangers inherent with the active ingredient?

Exposure Assessment- Who could come into contact and how much?

Dose Response Assessment- How much is too much?

Risk Characterization- Indicates whether or not there is a plausible basis for concern

Risk Quotient: Risk Quotients are calculated by dividing exposure estimates by the acute and chronic ecotoxicity values.

Rosette: The basal or early leaves of a plant, before bolting.

Sediment load: The quantity of sediment, measured in dry weight or by volume, transported through a stream cross-section in a given time. Sediment discharge consists of both suspended load and bedload.

Sediment yield: The amount of sediment per unit area removed from a watershed by flowing water during a specified period of time.

Selective Herbicide: A chemical that is more toxic to some plant species than to others (may be a function of dosage or mode of application).

Sensitive Species: Those plant and animal species identified by a regional forester for which population viability is a concern, as evidenced by: a) Significant current or predicted downward trends in population numbers or density. b) Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Seral: The stage of succession of a plant or animal community that is transitional. If left alone, the seral stage will give way to another plant or animal community that represents a further stage of succession.

Soil Condition: Description of the status of a soil's physical, chemical, and biological properties at any point in time. This may be a qualitative or quantitative description.

Soil productivity: The inherent capacity of the soil resource to support appropriate site-specific biological resource management objectives, which includes the growth of specified plants, plant communities, or a sequence of plant communities to support multiple land uses.

Sorption Coefficient: A measure of the strength at which a chemical adheres to soil in preference to remaining dissolved in water. The higher the number, the more readily an herbicide binds to soil particles.

Spray Adjuvants: is a catchall phrase for substances added to an herbicide or spray mix to aid mixing and applying or to improve the efficacy of an herbicide application.

Survey: An invasive species survey is a process of systematically searching a geographic area for a particular (targeted) invasive species, or a group of invasive species, to determine if the species exists in that area. It is important to know where and when surveys have occurred, even if the object of the survey (target species) was not located. Information on the absence of an invasive species can be as valuable as information on the presence of the species, and can be used as a foundation to an early detection system. Unlike inventories, surveys typically do not collect additional detailed attributes of the infestation or the associated site.

Structure: The list of species and their relative abundance in a community. Also, spatial arrangement both horizontally and vertically. Structure might reveal a pattern, or mosaic, or total randomness of vegetation. (University of Salzburg, AUT, FS Ecosystem Management Terms)

Succession: The natural replacement, in time, of one plant community with another. Conditions of the prior plant community (or successional stage) create conditions that are favorable for the establishment of the next stage.

Successional stage: A stage of development of a plant community as it moves from bare ground to climax. For example, the grass-forb stage of succession precedes the woody shrub stage.

Susceptible: see Vulnerable. Also, referring to plants not tolerant of herbicide.

Talus: Rock fragments that have accumulated at the base of a cliff or slope.

Target species: An individual invasive species or population of invasive species, which has been prioritized for research or management action based upon environmental, economic, or human impacts, risk assessments, or other decision support tools.

Threatened species: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and that the appropriate Secretary has designated as a threatened species. (Some states also have declared certain species as threatened through their regulations or statutes.)

Tolerant: Capable of withstanding effects. For example, grass is tolerant of 2,4-D to the extent that this herbicide can be used selectively to control broadleaf weeds without killing the grass.

Total Maximum Daily Load (TMDL): A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant.

Translocation: Transfer of sugars or other materials such as 2,4-D from one part to another in plants.

Treatment: Any activity or action taken to directly prevent, control, or eradicate a targeted invasive species. Treatment of an invasive species infestation may not necessarily result in the elimination of the infestation, and multiple treatments on the same site or population are sometimes required to affect a change in the status of the infestation. Treatment activities typically fall within any of the four general categories of integrated management techniques: Biological treatments, Cultural treatments, Mechanical treatments, or Chemical treatments. For example, the use of domestic goats to control invasive plants would be considered a biological treatment; the use of a pesticide to control invasive fishes would be characterized as a chemical treatment; planting of native seeds used to prevent invasive species infestations and restore a degraded site would be considered a cultural treatment technique; developing an aquatic species barrier to prevent invasive species from spreading throughout a watershed would be considered a

physical treatment; cleaning, scraping, or otherwise removing invasive species attached to equipment, structures, or vehicles would be considered a mechanical treatment designed to directly control and prevent the spread of those species.

Turbidity: The amount of solid particles that are suspended in water and that cause light rays shining through the water to scatter. Turbidity makes the water cloudy or even opaque in extreme cases.

µg: Microgram, a unit of mass equal to one millionth of a gram.

Vector: Routes or means of introducing invasive species to an area: pathways for invasion. For example, roadways, trails, streams and wind are all vectors for invasion.

Viable Population: A population that has the estimated numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its existing range (or range required to meet recovery for listed species) within the planning area.

Vigor: active healthy well-balanced growth especially of plants.

Vulnerable: being at risk, especially a plant community at risk of being degraded in quality through the invasion of aggressive, non-native species.

Volatilization: Evaporation or vaporization of an herbicide compound (changes from liquid to a gas) at ordinary temperatures on exposure to the air.

Watershed: The entire region drained by a waterway (or into a lake or reservoir. More specifically, a watershed is an area of land above a given point on a stream that contributes water to the streamflow at that point.

Water solubility: A measure of how readily a chemical or substance will dissolve in water.

Water table: The upper surface of the groundwater or that depth below which the soil is saturated with water.

Watershed: The catchment area of land draining into a river, river system, or body of water; the drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream or lake. The United States Geological Survey created a hierarchical system of 6 levels of hydrologic units, each described by a unique Hydrologic Unit Code (HUC).

Watershed, 4th-level: A watershed defined at the “sub-basin” scale. The HUC contains 8 digits, and the average watershed size is 700 square miles.

Watershed, 5th-level: A watershed defined at the “watershed” scale. The HUC contains 10 digits, and the watershed size generally ranges from 40,000 to 250,000 acres.

Watershed, 6th-level: A watershed defined at the “sub-watershed” scale. The HUC contains 12 digits, and the watershed size generally ranges from 10,000 to 40,000 acres.

Wetland: Those areas that are inundated by surface or ground water with a frequency sufficient to support and that, under normal circumstances, do or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.