

Appendix G. Biological Opinion

This page intentionally left blank

JUL- 6-94 WED 16:03

FISH AND WILDLIFE

FAX NO. 6194319618

P.01



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
 Carlsbad Field Office
 2730 Loker Avenue West
 Carlsbad, California 92008

July 6, 1994

Mr. Peter C. Markle
 Acting Division Administrator
 U.S. Department of Transportation
 Federal Highway Administration
 California Division
 980 9th Street, Suite 400
 Sacramento, California 95814

OPTIONAL FORM 39 (7-90)

FAX TRANSMITTAL

To	Mary Gray	From	Acting FS
Dept./Agency	FHWA	Phone #	619/431-9440
Fax #	916/551-1273	Fax #	431-9618
NSN 7540 01-347 TUGI		5098-101 GENERAL SERVICES ADMINISTRATION	

400 P 7/6/94
of pages = 4/4

Attn: Ms. Mary Gray

Re: Biological Opinion on the Effects of the Eastern Transportation Corridor (ETC) on the Coastal California Gnatcatcher, and Conference Report on the Brauntons Milkcatcher, Orange County, California (7-6-94-17)

Dear Mr. Markle:

This Biological Opinion responds to your January 14, 1994 request to the Fish and Wildlife Service (Service) for a formal consultation, pursuant to Section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act) on the effects of the ETC on the coastal California gnatcatcher (Polioptila californica californica). On February 22, 1994 the Service sent you a letter that indicated that the Biological Assessment for the ETC project satisfactorily addressed impacts to the listed and candidate species affected by the ETC project. However, after further review and analysis, the Service determined that additional information was needed regarding the impact of the ETC project on Orange County's Natural Community Conservation Plan (NCCP) Program before the Service could proceed with completion of the biological opinion; you were notified of the additional information needs in a letter from the Service dated March 10, 1994. On June 7, 1994, the Service received the final package containing the additional information needed to complete the biological opinion via your letter dated June 2, 1994.

The Service listed the coastal California gnatcatcher (Polioptila californica californica), hereinafter referred to as "the gnatcatcher", as a threatened species on March 25, 1993. On May 2, 1994, the listing was invalidated by the United States District Court of Columbia on the basis that the Secretary of the Interior failed to obtain and make available for public review and comment the data underlying a published scientific report on the specific taxonomy of the gnatcatcher. On June 16, 1994, Judge Sporkin granted a stay of his earlier decision to vacate the listing of the gnatcatcher, allowing the gnatcatcher to retain its threatened status while the Service made the data in question available to the public for review and comment. On June 2, 1994, the Service published a 60 day notice of availability (Notice) of the data in the Federal Register. In compliance with the Judge's order, the Secretary of the

DO NOT REMOVE FROM FILE

3.210.1

JUL- 6-94 WED 16:04

FISH AND WILDLIFE

FAX NO. 6194319618

P. 03

Peter C. Markle (1-6-94-F-17)

3

Biological Opinion

It is the biological opinion of the Service that the proposed project, including the mitigation and avoidance measures required by the Final EIS and Biological Assessment, and as modified by the additional mitigation measures proposed in the Federal Highway Administration's final submittal to the Service (FHA 1994c), is not likely to jeopardize the continued existence of the coastal California gnatcatcher. Critical habitat for this species has not been proposed and, therefore, no critical habitat would be modified.

The Service further concludes that the proposed project is not likely to jeopardize the continued existence of the Braunton's milkvetch.

This Biological Opinion is based upon the best available information, including the draft Subregional Reserve Design for the Central and Coastal NCCP Subregions of the County of Orange, presented to the Service on April 22, 1994, as discussed later in this document. If these conditions change substantially, reinitiation of formal consultation may be required, pursuant to 50 CFR 402.16.

Description of the Proposed Action

The Transportation Corridor Agencies (TCA) and Caltrans propose to authorize and have built a multiple lane tollway that would extend from State Route 91 south and west to Interstate 5 in central Orange County. The tollway would include a North Leg and an East Leg. As shown on Figure 1 of the Biological Assessment (P&D Technologies 1994), the North Leg would begin at State Route 91 and would traverse Gypsum and Blind Canyons to the East Orange Interchange. It would include six general purpose lanes, either one concurrent flow high occupancy vehicle (HOV) lane in each direction or two reversible HOV lanes and climbing and auxiliary lanes. The East Leg would begin at the East Orange interchange near Santiago Canyon Road and would extend southeast to connect with the Laguna Freeway at Interstate 5 near the United States Marine Corps Air Station in El Toro. It would include six general purpose lanes, two concurrent flow HOV lanes, and climbing and auxiliary lanes. The East Leg includes an interchange connection with the Foothill Transportation Corridor (North), west of Sand Canyon Avenue. The ETC (North) would extend from the ETC east to Oso Parkway. The ETC (North and East Legs) would be approximately 16.8 miles in length and have a grading width that varies from approximately 500 feet to 2,200 feet. Two maintenance stations to serve the tollway would be constructed as part of this project.

The ETC also includes, as a local related project, a West Leg, which would extend from a connection with the North and East Legs of the ETC at the East Orange Interchange to Jamboree Road south of Interstate 5 in Irvine, with no connection with Interstate 5. The West Leg would be constructed by TCA as a separate, locally funded project and is not part of the federal action assessed in this Biological Opinion. However, a separate Biological Opinion will be prepared for the West Leg ETC in consultation with the U.S. Army Corps of Engineers.

Peter G. Markle (1-6-94-F-17)

2

Interior must make a determination whether the listing should be revised or revoked in light of his review of the data and public comments received, no later than 100 days following the Notice. This 100-day period concludes on September 10, 1994.

The referenced action may affect the gnatcatcher. The project also may adversely affect this species' habitat, coastal sage scrub, in the project area and environs, and an avian species being considered for imminent listing by the Service, the coastal cactus wren (Campylorhynchus brunneicapillus couesi); we have included technical assistance recommendations concerning the effects of the project on this species in the opinion. This biological opinion also constitutes the conference report on a plant species proposed for federal listing, the Brauntons' milkvetch (Astragalus brauntonii). In addition, as requested by the project applicant, the Service has also provided technical assistance on two Category 2 candidate plant species that would be affected by the project in this opinion: the many-stemmed dudleya (Dudleya multicaulis) and chaparral beargrass (Nolina cismontana).

An issue in this biological opinion, are impacts to the gnatcatcher, cactus wren and the Brauntons' milkvetch that may result from direct, indirect, interrelated or interdependent actions that are enabled or regulated by the Federal Highway Administration and implemented by one or more of its agents (e.g. California Department of Transportation, [Caltrans], Transportation Corridor Agencies [TCA], private construction firms, private parties).

This Biological Opinion was prepared using the following information: 1) Eastern Transportation Corridor, Final Environmental Impact Report/Environmental Impact Statement, Foothill/Eastern Transportation Corridor Agency, March 1994 (hereinafter referred to as "EIS"); 2) Biological Resources Analysis Technical Report, P&D Technologies, May 1992; 3) Deer Telemetry Study, Foothill/Eastern Transportation Corridor Agency, March 1992; 4) Supplemental Draft Environmental Impact Study, Foothill/Eastern Transportation Corridor Agency, January 1993; 5) Federal Action on the Eastern Transportation Corridor Biological Assessment, Foothill/Eastern Transportation Corridor Agency, February 1994; 6) Southern California Coastal Sage Scrub Natural Community Conservation Planning (NCCP) Process Guidelines, including Attachment A: Conservation Guidelines and all attached and referenced documents, prepared by California Department of Fish and Game and California Resources Agency, November 1993 (hereinafter referred to as "Conservation Guidelines"); 7) County of Orange Coastal and Central NCCP/HCP Preliminary Reserve Design and Supporting Documentation, County of Orange, April 22, 1994; 8) various communications, including additional data and information developed between March through June 1994 by the Federal Highway Administration and/or their agents (on file); 9) Biological Opinion on the effects of the San Joaquin Hills Transportation Corridor on the Coastal California Gnatcatcher and Coastal Cactus Wren (on file); 10) Other biological references (see below, "Literature Cited and References").

Peter C. Markle (1-6-94-F-17)

4

As part of the proposed project, the Federal Highway Administration or its agents (specifically TCA) have agreed to implement the following mitigation measures, summarized below. For additional detail, refer to the Final EIS, Biological Assessment, and additional mitigation measures contained in the Federal Highway Administration's final submittals to the Service (FHA 1994b, 1994c). These measures are also further discussed in the "Terms and Conditions" related to the incidental take statement later in this document. In part, TCA (or the Federal Highway Administration) has agreed to:

- ✓ 1. Shift the ETC an estimated 500 feet further east away from Siphon Ridge. This shift reduces coastal sage scrub impacts, gnatcatcher and cactus wren impacts and provides a larger block of contiguous open space around Siphon Reservoir;
- ✓ 2. *Very similar* Develop and implement a Siphon Reservoir/Ridge Preservation and Restoration Program. Approximately 82 acres of existing coastal sage scrub in the Siphon Ridge area will be preserved. Another 112 acres of coastal sage scrub habitat located generally to the west and northwest of the reservoir will be restored, through a restoration/enhancement program developed in cooperation with the Service;
- ✓ 3. *Very similar* Implement a one-half acre pilot coastal sage scrub restoration/revegetation project. The results of this pilot program will be the basis for developing the coastal sage scrub restoration/enhancement project described above. The ultimate goal is to restore native coastal sage scrub to the surrounding reservoir hills, historically in agricultural production, providing increased forage and nesting, not only for the California gnatcatcher but many other coastal sage scrub-associated species;
- ✓ 4. Contribute \$1,515,000 to a Conservation Fund. The Conservation Fund is to be used to support the Natural Communities Conservation Planning Efforts, including but not limited to management, restoration and enhancement of lands preserved through the Central and Coastal Subregional NCCP Planning effort. The Conservation Fund will be set up in a phased-installment program over a three-year period. Each installment will be for the amount of \$505,000. The first installment will be paid by January 1996 or within 90 days after the bond sale (based on the bond sale occurring on or after October 1, 1995), the second installment will be paid by January 1, 1997 and the third installment will be paid by January 1, 1998;
- ✓ 5. Restore 170 acres at designated areas along the ETC graded slopes with coastal sage scrub plant species. (There would be a 14-foot buffer between pavement and the restored vegetation to accommodate Caltrans maintenance activities (P&D Technologies 1994);
- ✓ 6. Construct a minimum of four wildlife crossings at four locations. These locations are described in the FEIS (FHA 1994a), Biological Assessment (P&D Technologies 1994) and subsequent documentation developed between the Service, the Federal Highway Administration and the TCA (FHA 1994b and 1994c). In conjunction with construction at the

Peter C. Markle (1-6-94-F-17)

5

four wildlife crossings, natural springs or seeps will be protected and/or gallinaceous guzzlers (catch basin/watering devices) or other water storage containers and salt licks shall be constructed and installed to encourage the use of the wildlife crossings. The Federal Highway Administration or its agents will coordinate with the Service during preparation of the final grading plan for the wildlife crossing at Station No. 816;

7.

Provide 10 culverts at least 54" in diameter along the East Leg and 9 culverts at least 54" in diameter along the North Leg, and three culverts at least 54" in diameter for the Foothill Transportation Corridor Connection to enhance wildlife crossing. The locations and dimensions of the culverts meeting this criteria are described in FHA 1994c;

8.

Revegetate the area disturbed by construction of the wildlife crossings. A wildlife crossing revegetation plan for each crossing will be coordinated with the Service prior to the construction of the crossings;

9.

Obtain wildlife conservation easements for all habitat mitigation areas and movement corridors under the wildlife crossings related to the ETC;

10.

SOW

Conduct wildlife movement studies near each of the four wildlife crossing locations during the Spring and Fall. Reports shall be prepared annually, beginning one year after the opening of ETC and continuing for a total of five years. Alternatively, TCA may participate in or provide monetary contributions to radio tracking studies of predators in the region, conducted by the Service or other parties approved by the Service.

If the studies indicate the wildlife crossings are less than successful, as determined by the Service, then additional corrective measures shall be conducted, as necessary;

NROC

11.

Ensure the operation of twenty cowbird traps in the Siphon Reservoir area and along the East Leg in perpetuity. Funds shall be provided sufficient to conduct trapping annually or to establish an endowment sufficient to provide trapping in perpetuity;

12.

SOW

Perform a series of monitoring studies until performance criteria are met, to provide additional information on gnatcatcher habitat utilization. The purposes of these studies shall be as follows:

- a. To determine the success of the revegetation efforts in providing nesting opportunities for the gnatcatcher with consideration of predation, nest parasitism and other factors, and, in addition,
- b. A banding study will be conducted to determine extent of juvenile gnatcatcher dispersal at Siphon Reservoir and along the frontal slopes across the East Leg of the ETC. The banding study will be initiated in March of 1995.

Peter C. Markle (1-6-94-F-17)

6

The study methodologies shall be approved by the Service;

- ✓ 13. Immediately replace or restore all coastal sage scrub habitat outside of the approved construction footprint, at a ratio of five acres replaced for each acre lost, that is destroyed or significantly modified as a result of the construction, implementation, or operation of the proposed project;
- ✓ 14. Implement all mitigation measures that are implied or identified in the Technical Studies or EIS, pertaining to water quality or erosion to prevent the dissemination or concentration of pollutants in the project area or "Action Area";
- ✓ 15. Mitigate light and glare impacts according to the measures identified in the EIS;
- ✓ 16. Provide a minimum of seven, and if feasible, 14 days prior notice to the Service before commencing grading activities. Grubbing or other land clearing activities shall not occur unless and until construction of the ETC is ready to begin in earnest. The following construction monitoring measures will be implemented to minimize impacts to gnatcatchers, coastal cactus wrens, and coastal sage scrub habitat:
 - a) Construction will be monitored by a biologist to minimize construction impacts on natural resources outside the actual construction zone. The monitor will observe the contractor's work to ensure that work does not take place in high value natural areas outside the clearing limits as staked in the field.
 - b) The contractor will review the rough grading plans and staking to ensure that the grading is within the project footprint as described for the Biological Opinion.
 - c) Construction monitoring activities will include the prevention of harm, harassment, injury, or death of wildlife by means of the education of contractor and construction crews. In addition, the monitor will work to prevent violation of existing laws, such as the Migratory Bird Treaty, Clean Water Act, and Fish and Game Code. If any violations or potential violations of these and other laws are noted, the monitor will advise the TCA accordingly. If necessary, work will be stopped, and the monitor shall advise the Federal Highway Administration, TCA, Service, and the Department of Fish and Game and other appropriate resource agencies to resolve the situation.
 - d) Monitoring of coastal sage scrub habitat within or immediately adjacent to active or future project construction areas will occur throughout the construction period, in order for the monitor to be aware of gnatcatcher and coastal cactus wren locations.
 - e) Continuous monitoring of gnatcatchers in active territories will be conducted during any construction operations that occur within

Peter C. Markle (1-6-94-F-17)

7

100 feet of occupied habitat. The purpose of this monitoring will be either to verify that the construction does not significantly adversely affect the gnatcatcher activity or to determine whether "take" occurs, whichever the case may be. If this monitoring indicates that unauthorized take of gnatcatchers may occur, construction will cease pending coordination with the Service; and,

*FWS 17a
b*

- 17. Mitigation measures for the many-stemmed dudleya and the chaparral beargrass will be conducted, as outlined in the ETC FEIS and the Biological Assessment, as modified below (FHA 1994a and P&D Technologies 1994):

#19

a. The North Lake Interchange, as evaluated in the FEIS, will not be built as part of the ETC in order to avoid impacts to the many-stemmed dudleya. If this interchange should become necessary in the future, based on traffic demand, it will be redesigned to avoid impacts on the many-stemmed dudleya, or the impacts will be mitigated through the selection of an alternative site for transplantation and establishment of the plants, and as approved by the Service. The dudleya will be transplanted prior to the impact and reach a level of success, as approved by the Service, prior to impact by construction; and

Amended

6

b. A salvage program will be developed to remove and relocate chaparral beargrass that would be impacted by ETC construction, in consultation with the Service, CDFG and other qualified resources specialists. Revegetation/transplantation and enhancement of beargrass will occur along the graded slopes of the ETC alignment and within Open Space Area 31 and Blind Canyon; a 20 acre area in the Limestone Regional Park ETC reservation area has been set aside for chaparral beargrass preservation (P&D Technologies 1994).

Refer to here

*delete
revisions
transplant
Director
Salvage Plan*

In addition, the Service notes that the TCA has enrolled in the NCCP Program. The NCCP Program was established in 1991 by the State of California through passing of the Natural Community Conservation Planning Act of 1991. Planning and implementation of the NCCP Program is the responsibility of the California Department of Fish and Game, in collaboration with The Resources Agency. The purpose of the NCCP Program is to provide long-term, regionally designated protection of natural wildlife diversity while permitting appropriate and compatible land development. Subregional Conservation Plans are guided by the Natural Community Conservation Guidelines, which are based on recommendations by a five-member panel of experts on various aspects of coastal sage scrub ecology. The ultimate goal of a NCCP Program is to provide for the establishment and management of permanent multi-species preserves. This establishment of preserves under the NCCP Program includes the identification and subsequent permanent protection of a network of core reserves, and the incorporation of biological corridors and linkages between core reserves and with other natural lands. NCCP planning is currently underway in Orange, San Diego, Riverside and Los Angeles counties.

In Orange County, two subregions have been designated that encompass most of the coastal sage scrub habitat in the county - the Southern Subregion, and the

Peter C. Markle (1-6-94-F-17)

8

Central and Coastal Subregion. Draft NCCP plans are being prepared for both subregions, through a collaborative effort between local governments, environmental group representatives, land owners, land developers, TCA, CDFG and the Service.

The ETC project would affect the Central and Coastal NCCP planning effort, specifically, the Central subarea. A draft reserve design for this subregion was presented on April 22, 1994. The reserve design incorporates the ETC, along with its proposed wildlife crossings intended to preserve connectivity between habitat reserves bisected by the ETC. While a significant amount of coastal sage scrub habitat, including most gnatcatcher and coastal cactus wren population centers appear to have been included in habitat preserves, this reserve design was clearly identified as a preliminary design and subject to change as the planning process proceeded (County of Orange 1994). The Service has reviewed the draft reserve design and provided preliminary comments, but has not had the opportunity to review the data upon which the habitat reserves were based. Once the data have been received and analyzed by the Service, final comments on the Central and Coastal NCCP reserve design will be provided.

As discussed above, TCA is an active member of the Central and Coastal Subregional NCCP planning effort. In this capacity, TCA has responded to a number of requests for modification of the ETC project, including a strategic alignment shift in the Siphon Reservoir area to specifically reduce impacts to gnatcatchers, cactus wren and their coastal sage scrub habitat, and has incorporated other modifications to the project to improve wildlife movement across the ETC.

Effects of Proposed Action on Listed Species

Species Accounts

Coastal California Gnatcatcher

Primarily because of substantial, recent reductions in the habitat and range of the species and the inadequacy of existing regulations, the Service listed the gnatcatcher as threatened on March 30, 1993 (58 FR 16742). In recognition of the State's Natural Community Conservation Planning Program (NCCP Program), being implemented under the authority of the State of California's Natural Community Conservation Planning Act of 1991 (NCCP Act), and several local government on-going multi-species conservation planning efforts that intend to apply Federal Endangered Species Act standards to activities affecting the gnatcatcher, on December 10, 1993, the Service issued a special rule, pursuant to section 4(d) of the Act, defining the conditions under which take of the gnatcatcher would not be a violation of section 9 (58 FR 65088). Under the special rule, incidental take of the gnatcatcher by land-use activities addressed in an approved Natural Community Conservation Plan (NCCP) would not be considered a violation of section 9 of the Act, provided that the Service determined that the NCCP meets the issuance criteria for an "incidental take" permit, pursuant to section 10(a)(2)(B) of the Act and 50 CFR 17.32 (b)(2). A limited amount of incidental take of the gnatcatchers within subregions actively engaged in preparing a NCCP would also not be considered a violation

JUL- 6-94 WED 16:09

FISH AND WILDLIFE

FAX NO. 6194319618

P. 09

Peter C. Markle (1-6-94-F-17)

9

of section 9 of the Act, provided that such take results from activities conducted consistent with the State's NCCP Conservation and Process Guidelines. The Conservation Guidelines limit this "interim take" to no more than 5% of existing coastal sage scrub habitat.

The coastal California gnatcatcher is a recognized subspecies of the California gnatcatcher (*Poliophtila californica* [Brewster]) and is endemic to coastal southern California and northwestern Baja California, Mexico (American Ornithologists' Union 1983, 1989; Atwood 1980, 1988, 1990, 1991).

The gnatcatcher, a small, gray songbird, is an obligate resident of coastal sage scrub dominated plant communities from Los Angeles County generally south along the coast to El Rosario at about 30 degrees north latitude (American Ornithologists' Union 1957, Atwood 1990, Phillips 1991, Banks and Gardner 1992). The appropriate habitat or habitat type, occurs in a patchy or mosaic distribution. The distribution and size of these patches of suitable habitat varies throughout the range of the species from year to year due to the expressed effects of a variety of variables.

Typical coastal sage scrub habitat constituents are relatively low-growing, drought-deciduous, and succulent plant species. Representative plant taxa in this plant community include coastal sagebrush (*Artemisia californica*), several species of sage (*Salvia* spp.), California buckwheat (*Eriogonum fasciculatum*), California encelia (*Encelia californica*), various species of cactus and cholla (*Opuntia* spp.), and several species of *Happlopappus* (Munz 1974; Kirkpatrick and Hutchinson 1980). Of the 11 subassociations of coastal sage scrub identified by Kirkpatrick and Hutchinson (1977), the gnatcatcher apparently routinely occupies only three of these.

The gnatcatcher is primarily insectivorous and defends territories ranging in size from approximately 2 to 40 acres (Atwood 1990; John Konecny, personal communication). Atwood's comprehensive studies (1988, 1991) and status review (1990) further reveal that the breeding season of the species extends from February through July, and apparently peaks in April. Juveniles associate with their parents for several weeks or even months after fledging.

Although considered locally common fewer than 50 years ago (Grinnell and Miller 1944), Atwood (1990, 1992b) estimated that the approximately 1,811 to 2,291 pairs of gnatcatchers remain in the United States population. In the listing package, the Service estimated that there could be as many as 2,562 pairs gnatcatchers in Southern California (58 FR 16742). Although the documented decline of the gnatcatcher undoubtedly is the result of numerous factors, including nest depredation and brood parasitism by the essentially non-native brown-headed cowbird (*Molothrus ater*), habitat destruction, fragmentation or modification are the principal reasons for the gnatcatcher's current, precarious status (58 FR 16742). It has been estimated that as much as 90 percent of coastal sage scrub vegetation has been lost as a result of development and land conversion (Westman 1981a, 1981b; Barbour and Major 1977), leaving coastal sage scrub as one of the most depleted habitat types in the United States (Kirkpatrick and Hutchinson 1977; Axelrod 1978; Klopatek et al. 1979; Westman 1987; O'Leary 1990).

Peter C. Markle (1-6-94-F-17)

10

For references that contain thorough accounts of the gnatcatcher and its coastal sage scrub habitat, please see the section entitled "References and Literature Cited" at the conclusion of this document.

Species Accounts

Coastal Cactus Wren

The cactus wren (Campylorhynchus brunneicapillus) is a large (length 18-22 cm) member of the wren family (Troglodytidae). Its body plumage is brown above and whitish below. The crown is often a rust-colored brown bordered by a conspicuous whitish eyebrow. The underparts are heavily spotted with black especially on the upper breast. The back is streaked, and the wings and tail are conspicuously barred in black and white (Dunn 1987, Terrill 1988, Rea and Weaver 1990).

One recognized subspecies of cactus wren (C. b. couesi) occurs in the United States. Although Rea (1986) proposed a new subspecies of cactus wren, C. b. sandiegensis (San Diego cactus wren), the American Ornithologists' Union Committee on Classification and Nomenclature has not accepted this proposed change in taxonomy (Dr. Burt Monroe, American Ornithologists' Union, pers. comm.).

On September 21, 1990, the Service received two petitions to list the San Diego cactus wren, C. b. sandiegensis (Rea 1986), as an endangered species pursuant to Section 4 of the Act. Given the biological information contained therein pertaining to sandiegensis and the remainder of the coastal population of the cactus wren, the Service affirmed that the petitioned action may be warranted on January 24, 1991, pursuant to Section 4(b)(3)(A) of the Act. This finding was subsequently published in the Federal Register on March 22, 1991 (56 FR 12146).

Accordingly, it is the coastal population of C. b. couesi that is referred to herein as the coastal cactus wren. A discussion of the nomenclatural history of the coastal California population of the cactus wren is presented by Rea and Weaver (1990).

The coastal cactus wren occurs from southern Ventura County southeast to the Baldwin Hills and the Palos Verdes Peninsula in Los Angeles County, east along the southern flank of the San Gabriel and San Bernardino Mountains from the northern San Fernando Valley in Los Angeles County to Mentone in San Bernardino County, and south along the coastal slopes and interior valleys west of the Peninsular ranges in western Riverside, Orange, and San Diego Counties to extreme northwestern Baja California, Mexico, in the vicinity of Tijuana and Valle de las Palmas. Maps depicting the distribution of the coastal population of the cactus wren are presented in Garrett and Dunn (1981) and Rea and Weaver (1990).

The geographic isolation of coastal and interior cactus wren populations has been enhanced by the urbanization of southern California and may be facilitating their genetic differentiation (e.g., see Rea and Weaver 1990). The hiatus of suitable habitat formed by the Transverse and Peninsular ranges

Peter C. Markle (1-6-94-F-17)

11

also serves to maintain and define the disjunct distribution of coastal and interior populations of the cactus wren. In addition, Garrett (1992) concluded that "...the habitat occupied by coastal Los Angeles and Ventura County cactus wrens (never considered to be part of the sandiegensis subspecies) is strikingly different than that occupied by the nearest desert populations in the western Antelope Valley..." and that "...all of the coastal slope populations are now functionally isolated from the desert ones..."

The coastal cactus wren is an obligate, nonmigratory resident of the coastal sage scrub plant community. As its common name suggests, this species is found in association with various species of cacti which provide sites for nesting, roosting, and foraging. The coastal cactus wren occurs almost exclusively in thickets of tall prickly pear (Opuntia littoralis and O. oricola) and coastal cholla (O. proliferata) at elevations up to 450 m above sea level (Rea and Weaver 1990). Rea and Weaver (1990) reported that "The wrens are absent from areas where only low, sprawling cacti grow."

From the early 1880's to the early 1930's, the coastal cactus wren was considered a locally common resident of cactus-dominated habitat from San Diego northwest to Santa Paula in Ventura County (Grinnell 1915; Willett 1912, 1933). However, even during this period, a decline in its status was noted. Dawson (1923) reported that "All proper desert areas west of San Geronimo Pass are being threatened sharply by the human invasion ... The cactus wren has receded from many parts of the San Diego-Ventura section already, and is in danger of being altogether cut off."

Willett (1933) noted that this species had declined significantly in Ventura County (including its apparent extirpation from Simi Valley) as a result of land clearing activities for agricultural purposes. Grinnell and Miller (1944) characterized the range of the cactus wren on the coastal slope of southern California as "now much restricted as compared with conditions in the 1880's and 1890's, owing to great reduction of requisite habitat..."

The coastal cactus wren has been extirpated from at least 57 sites known to be occupied between 1976 and 1990 (Salata 1992). Many of the sites currently occupied by the coastal cactus wren contain very few pairs and are threatened by urban development, fire, agriculture, and a variety of other factors (Salata 1992). Rea and Weaver (1990) reported that only 10 of 52 sites currently occupied by the coastal cactus wren in San Diego County support five or more pairs. Overall, it is estimated that fewer than 2,400 pairs of coastal cactus wrens remain throughout its entire range (Salata 1992).

Considering the small overall population size of the coastal cactus wren, the precarious status of the coastal sage scrub plant community upon which it depends (O'Leary 1990), and the high degree of wren habitat fragmentation (Rea and Weaver 1990), further losses of habitat can be expected to have a significant adverse effect on the viability of extant subpopulations. Indeed, the status of the coastal cactus wren is symptomatic of the status of the coastal sage scrub plant community upon which it depends for its continued existence. As was indicated above, this plant community is one of the most depleted habitat types in the United States (Kirkpatrick and Hutchinson 1977; Axelrod 1978; Klopatek et al. 1979; Westman 1981a,b, 1987; O'Leary 1990).

Peter C. Markle (1-6-94-F-17)

12

Braunton's milkvetch

The Service first proposed Braunton's milkvetch (Astragalus brauntonii) for listing as federally threatened or endangered in January 1975. No action on the proposal was taken prior to 1978, when ESA amendments were enacted that required all proposals over two years old be withdrawn. A one-year grace period was provided to those proposals already more than two years old; however, Braunton's milkvetch was included in a Federal Register notice of withdrawal of the proposals that had expired in September 1979. The Service published an updated notice of review for the plants for which proposals had been withdrawn in December 15, 1980. This list included Braunton's milkvetch as Category 1 candidate species. In September 27, 1985 the list was revised and Braunton's milkvetch was listed as a Category 2 candidate species. More recent reviews of the threats facing the species throughout its range resulted in its elevation to a Category 1 candidate. In subsequent years, the Service found the petitioned listing of Braunton's milkvetch and other species warranted, but listing was precluded by other pending proposals of higher priority. Braunton's milkvetch was proposed for listing as endangered on November 30, 1992 (USFWS 1993).

The Braunton's milkvetch is a stout perennial of the legume family (Fabaceae). This species is approximately four to five feet tall covered with dense white hairs (Hickman 1993). This characteristic and its two-chambered pod allow it to be easily distinguished from other species of Astragalus. Fire or other site perturbation is required for seed germination. Individual plants live only two to three years; thus, the plant is only visible for a short period following a fire event. Braunton's milkvetch is thought to be associated with limestone soils and chaparral beargrass. The majority of the populations outside of limestone soils, occurrences have thus far been attributed to seed drift following a fire event (USFWS 1993). Braunton's milkvetch is known to occur in Ventura, Orange and Los Angeles Counties. Specific sites of known populations include Simi Hills, Coal and Gypsum Canyons, and historically Clamshell Canyon and the Santa Monica Mountains. In Orange County, it commonly occurs in areas supporting chaparral beargrass (Roberts 1993, pers. comm.). The current estimate of extant individuals of Braunton's milkvetch is approximately 300 plants (USFWS 1993).

Analysis of Impacts

Pursuant to the regulations at 50 CFR 402, the following constitutes an analysis of impacts to the gnatcatcher, coastal cactus wren, and Braunton's milkvetch in and around the project Action Area, which includes all of the land that would be directly impacted by project construction, and indirectly affected by project construction and operation (e.g. noise effects), or affected because of potential induced growth.

As described above, there may be as many as 2,562 gnatcatchers remaining in the U.S. Of this total, about 757 pairs of gnatcatchers were estimated to occur in Orange County (58 FR 16743), prior to the wildfires that burned a significant amount of Orange County, primarily the coastal areas, in October 1993. Over 7,700 acres of coastal sage scrub burned as a result of the 1993 wildfires in Orange County. An estimated 144 pairs of gnatcatchers were

Peter C. Markle (1-6-94-F-17)

13

assumed lost (USFWS 1993). The most significant fire damage to the Orange County coastal sage scrub ecosystem occurred in the coastal areas, especially in the San Joaquin Hills area. Impacts to the gnatcatcher and coastal cactus wren resulting from this fire were analyzed in the Biological Opinion for the San Joaquin Hills Transportation Corridor (USFWS 1994). While significant impacts to the coastal populations of gnatcatchers and cactus wrens, it is expected that these populations will eventually increase as the habitat recovers from the fire (USFWS 1994).

The existing information on the abundance and distribution of the gnatcatcher in Orange County was supplemented by field surveys conducted as part of the NCCP planning effort. Intensive field surveys for the NCCP target species (gnatcatcher, coastal cactus wren and orange-throated whiptail lizard) were conducted in various locations within the coastal sage scrub habitat in the Santa Ana Mountains/Lomas de Santiago Ridge that comprises the reserve planning area for the Central subarea. Field surveys were conducted in 1991 through 1992 and again in the spring of 1994. Field survey locations included lands owned by the Irvine Company (a substantial portion of the Central Subarea) and County regional parks. In 1994, additional survey locations were selected, the basis of selection being those areas determined to have the greatest potential presence of gnatcatchers and cactus wrens. The purpose of these surveys were merely to note the presence or absence of NCCP target species, including the gnatcatcher. No attempt was made to determine the status of individuals sighted; NCCP survey results are reported as sightings. During the 1991-1992 field surveys in the Central subarea, approximately 163 gnatcatchers and 476 cactus wren were sighted. In the 1994 spring surveys, 174 gnatcatchers and 190 coastal cactus wren were sighted (R.J. Meade, Pers. Comm).

As stated above, the gnatcatcher is an obligate species of the coastal sage scrub habitat. Gnatcatchers are found more consistently and in higher densities in subassociations of coastal sage scrub generally found near the coast and lower in elevation (NCCP Scientific Review Committee: J. Atwood, J. Rotenberry and D. Murphy, Pers. Comm.). This is particularly noticeable in Orange County, where there is a relatively quick transition between the flatter, coastal areas, and the steeper, more mountainous portions of the county in the Santa Ana Mountains. Coastal sage scrub habitat in the foothill portion of the Loma Ridge and adjacent lowland areas provide an example of this observation. The Loma Ridge foothill area and adjacent lowlands traversed by the ETC range in elevation from about 500 to 1,200 feet in elevation and the existing patches of coastal sage scrub habitat supports significant populations of the gnatcatcher and coastal cactus wren (P&D Technologies 1994). Steeper areas immediately adjacent to these flatter foothill/lowland areas in the vicinity of the Limestone Canyon area have more scattered, less dense populations of gnatcatchers (P&D Technologies 1994). The coastal sage scrub patches in the foothill/lowland areas of the Loma Ridge may be the source population of gnatcatchers for the steeper, more mountainous areas to the east (NCCP Scientific Review Committee: J. Atwood, J. Rotenberry and D. Murphy, Pers. Comm).

Peter C. Markle (1-6-94-F-17)

14

Direct and Indirect Effects

As described in the Biological Assessment and as modified by the alignment shift off the Siphon Ridge area, the project will result in the permanent, direct loss of 250 acres of coastal sage scrub habitat. In addition it is estimated that indirect effects of project construction and operation (e.g., noise, light impacts, potential pollutant dispersal) may extend up to 1,000 feet from the centerline of the ETC. It is estimated that the construction will directly affect approximately 14 pairs and 5 single gnatcatchers for a total of 33 gnatcatchers; indirect effects may include an additional 9 pairs of gnatcatchers (P&D Technologies 1994, FHA 1994b).

Approximately 19.2 acres of potential habitat for the Braunton's milkvetch would be subject to direct impacts due to construction of the ETC. (P&D Technologies 1994).

Technical AssistanceCoastal Cactus Wren

Approximately 10 pairs and 11 single cactus wrens, for a total of 30 wrens would be directly affected by ETC construction. An additional 6 pairs and 10 individual cactus wrens may be indirectly affected (P&D Technologies 1994, FHA 1994b).

Many-stemmed Dudleya and Chaparral Beargrass

For the many-stemmed dudleya, approximately 4,500 to 6,256 plants would be directly affected by ETC construction. Indirect impacts could occur as a result of soil erosion, fugitive dust, and air pollution. The mitigation measure proposed, elimination of (possibly only temporarily) the North Lake Interchange, will significantly reduce the impacts to dudleya. If the transplantation program should become necessary, a monitoring program of at least three to five years would likely be required to determine success.

A minimum of about 19.2 acres of chaparral beargrass would be lost by ETC construction. Indirect impacts could occur as a result of soil erosion, fugitive dust, and air pollution. Since the potential for success of revegetation/transplantation of this species is unknown, a minimum Monitoring Program of 5 years would likely be necessary to ensure that the transplanted population is selfsustaining. Selection of the Limestone Canyon site for mitigation would depend upon the suitability of the soils.

Habitat Fragmentation

While the direct and indirect impacts associated with the ETC pose a significant threat to gnatcatcher populations in the Central Subarea, a more serious aspect of the ETC for gnatcatcher populations is habitat fragmentation, which tends to disrupt various ecosystem processes.

As discussed previously, habitat destruction and fragmentation are the most significant threats to gnatcatchers (and coastal cactus wrens). As noted by

JUL-6-94 WED 16:13

FISH AND WILDLIFE

FAX NO. 6194319618

P. 15

Peter C. Markle (1-6-94-F-17)

15

Noss (1992) and Soule et al. (1992), "In the coastal sage of Southern California, a classic sequence of habitat destruction and fragmentation has occurred, involving a reduction in total habitat area and apportionment of the remaining area into small isolated pieces. These pieces, mostly canyons, then continue to lose native vegetation as human activities fragment them internally and nibble at their edges." The NCCP Conservation Guidelines notes that "...threats to coastal sage scrub habitat are more than losses of total habitat area alone. Threats also include losses of distinct subtypes of sage scrub and losses of the special conditions needed to maintain the broad suite of coastal sage scrub-resident species" (CDFG 1993). Habitat fragments have little long-term value for conservation, as smaller habitat areas contain fewer species. Also, smaller habitat patches with proportionally larger perimeters are more vulnerable to deleterious edge effects, although such effects have not yet been documented in coastal sage scrub (Atwood 1990).

In the County of Orange, relatively large, contiguous patches of coastal sage scrub still exist. This is due to a combination of a unique and proactive approach to land-use planning, which requires dedication of open space in return for development rights, and geography. In the Central subarea, open space dedication has been concentrated in the higher elevation areas adjacent to the Cleveland National Forest, such as the Limestone Regional Park and large canyon areas, such as Weir Canyon Wilderness Area. These dedicated open space lands contain a significant amount of coastal sage scrub. Development has tended to be more focused in the flatter, lower elevation areas, such as the coast and the inland valley area. The more steep foothill and mountain areas have been traditionally less attractive for development.

The ETC would bisect these contiguous coastal sage scrub patches, embedded within a mosaic of other natural habitats such as grasslands or chaparral. This will result in fragmentation of relatively contiguous patches of habitat into smaller patches to the west of the ETC, to a lesser extent, to the east of the corridor. Along the East Leg, the ETC would isolate the south-facing, lower elevation coastal sage scrub patches along the Loma Ridge and adjacent lowland areas, which support a significant population of gnatcatchers, away from a significantly larger, contiguous block of coastal sage scrub currently protected within Limestone Regional Park. Along the North Leg, Irvine Park, Weir Wilderness and Planning Area 31 would be isolated from coastal sage scrub and matrix habitats in the Gypsum and Coal Canyon areas, which abut the Cleveland National Forest. As discussed previously, coastal sage scrub typically exists in a patchy distribution, embedded within a matrix of other natural habitats, such as grassland or chaparral. Thus, the gnatcatcher and other species wholly dependent upon coastal sage scrub appear to be able to survive on small patches of habitat. Fragmentation of coastal sage scrub would impact gnatcatchers, and other obligate species, by isolating populations and preventing dispersal.

Fragmentation of habitat by the ETC is expected to inhibit, to some degree, juvenile dispersal of gnatcatchers and thus affect immigration between subpopulations that would be separated by the ETC. Little is known about juvenile gnatcatcher dispersal, or to what extent large roadways act as barriers to the gnatcatchers. Recent information suggests that 96% of juvenile gnatcatchers disperse within 1.5 miles of their natal territory; 80%

JUL- 6-94 WED 16:14

FISH AND WILDLIFE

FAX NO. 6194319618

P. 16

Peter C. Markle (1-6-94-F-17)

16

disperse within 1.25 miles of their natal territory (G. Braden, USFWS, Pers. Comm). Gnatcatchers have been observed flying high over roadways; it may be that they fly high to get a view of where they want to go, and if they see coastal sage scrub, they may move there (Bontrager, Pers. Comm). Since gnatcatchers probably prefer to utilize natural habitats to disperse (Noss 1992), the ETC may act as a barrier, especially in those areas where coastal sage scrub or other native habitat cannot be seen across the corridor. The ETC would be a significant barrier to terrestrial wildlife species, such as the coyote and other large predators and their prey, which would ultimately affect the coastal sage scrub ecosystem, and therefore the gnatcatcher and cactus wren.

In the Loma Ridge area, the alignment of the ETC is generally along the less steep portion of the foothill area, immediately adjacent to much steeper terrain, which may already form a barrier to gnatcatcher dispersal into this area. The ETC would effectively broaden this existing natural barrier, and further impair dispersal of gnatcatchers from coastal sage scrub patches located west of the ETC to coastal sage scrub habitat located to the east (NCCP Scientific Review Committee: J. Atwood, J. Rotenberry and D. Murphy, Pers. Comm).

At Siphon Reservoir, fragmentation would also have a more significant effect on gnatcatchers due to the relative isolation of coastal sage scrub habitat. A total of approximately 115 acres of occupied gnatcatcher habitat exists within the Siphon Reservoir area. Approximately 26 acres occur within proposed ETC grading limits. Gnatcatchers in the Siphon Reservoir area subject to direct or indirect impacts may attempt to disperse to adjacent habitats. However, little suitable habitat exists in proximity to this population to allow for potentially successful colonization by these birds. The gnatcatcher population at Siphon Ridge is bordered by avocados and citrus orchards to the east, citrus and row crops to the south, citrus orchards to the west and a combination of citrus and native open space to the north. Consequently, this population is surrounded by non-native habitats, except for a fairly narrow opening to natural open space to the north. It would appear that the best chance for successful dispersal would be to the north.

The project description includes a coastal sage scrub preservation/restoration program to partially mitigate the effects of the ETC construction and operation on the gnatcatcher population in the Siphon Ridge/Reservoir area. While only a few small scale efforts at coastal sage scrub restoration have been attempted, they indicate that net enhancement of habitat quality may be attainable. As stated in the Conservation Guidelines, ecological studies of coastal sage scrub show natural recovery from disturbance, which suggests that active restoration may be successful. The Conservation Guidelines recognize the feasibility of active coastal sage scrub restoration projects and conservatively estimate that a 5% habitat quality enhancement potential exists for coastal sage scrub habitat. The Conservation Guidelines' acknowledgement that up to a 5% interim habitat loss is acceptable during the period in which NCCPs are being developed is based upon the 5% restoration/enhancement potential estimate. The goal of the Restoration/Preservation Program at Siphon Ridge is to restore native coastal sage scrub to the surrounding reservoir hills, historically in agricultural production providing increased

JUL- 6-94 WED 16:14

FISH AND WILDLIFE

FAX NO. 6194319618

P. 17

Peter C. Markle (1-6-94-F-17)

17

forage and nesting, not only for the California gnatcatcher but for many other coastal sage scrub-associated species. Approximately 82 acres of existing coastal sage scrub in the Siphon Ridge area will be preserved, and another 112 acres of coastal sage scrub habitat located generally to the west and northwest of the reservoir will be restored. If successful, this restoration program will improve the connectivity to coastal sage scrub habitat mosaic in the Loma Ridge area to the north.

In summary, the Service finds that fragmentation of coastal sage scrub habitat by the ETC poses a threat to the long-term viability of the gnatcatcher and likely other coastal sage scrub-associated species. The habitat patches remaining on the west side of the ETC, particularly in the Loma Ridge foothill and adjacent lowland areas, would be isolated to some degree from habitat to the east of the corridor.

As noted earlier, another negative result of fragmentation is edge effects. The 16.8-mile long corridor will create artificial edges along its length as it bifurcates natural, undisturbed habitat. The remaining habitat adjoining the ETC will have deteriorated value for wildlife to some distance away from the road due to the adverse effects of noise, air pollution and other factors. The ETC will also be a cause of mortality to a variety of species that move across the landscape.

The artificial edge created by the construction of the ETC could result in increased habitat disruption in areas that were previously inaccessible, and in increased rate of weedy plants (Noss 1992). This effect should be minimized by the revegetation of the graded slopes along the corridor with coastal sage scrub plant species, as proposed as part of the project's mitigation package (P&D Technologies 1994). The habitat fragmented and remaining on the west side of the ETC will be exposed to edge effects on both its east and west sides. Edge effects will include those created by the corridor along the eastern boundary of the habitat fragment, and those that will be created in the future along the western boundary of the habitat fragment by anticipated development, as it proceeds to press eastward into the foothill areas from the valley below.

Brood parasitism by the brown-headed cowbird (Molothrus ater), could be exacerbated by increased edge effect, likely affecting the reproductive potential of the gnatcatcher. Cowbird parasitism and the direct and indirect impacts of a variety of projects currently limit the distribution and potential expansion of gnatcatchers in Orange County, and in California as a whole. A composite of the best scientific information available suggests that cowbird abatement program proposed as part of the project should alleviate or offset the depression of gnatcatcher productivity that might otherwise result from the direct or indirect effects of the project. Specifically, management programs including cowbird abatement and predator surveillance have been extraordinarily successful in bringing about rapid and statistically significant increases in southern California populations of the least Bell's vireo (Vireo bellii pusillus), a Federally-listed endangered species (Salata 1987; Hays 1989; The Nature Conservancy 1993). More importantly, the available data reveal that 40% of the 10 gnatcatcher nests monitored in the Coyote Hills in Fullerton, California were parasitized by cowbirds (UNOCAL

JUL- 6-94 WED 16:15

FISH AND WILDLIFE

FAX NO. 6194319618

P. 18

Peter C. Markle (1-6-94-F-17)

18

1993) as were 31% (54) of 176 gnatcatcher nests monitored in Riverside County study sites during the 1992-1993 breeding seasons (G. Braden, Pers. Comm.). It is critical that the reproductive capability of the gnatcatcher and coastal cactus wren be maximized to the extent possible in the short-term and in perpetuity to conserve and recover the local populations of these species. The cowbird management measures proposed as part of the Project (P&D Technologies 1994), will contribute to the elimination of a significant threat to gnatcatcher reproductive capability.

Impacts to Central and Coastal NCCP Reserve Design

The impact of fragmentation of coastal sage scrub and its resident species, including the gnatcatcher, must be analyzed with respect to the County of Orange's NCCP planning efforts in the Central Subregion. As discussed earlier, the listing of the gnatcatcher as threatened was followed by the issuance of a special rule, which, in general, would allow land-use activities associated with a NCCP plan to not be considered a violation of section 9 of the Act. Orange County is enrolled in the NCCP Program and is currently preparing a NCCP for the Central and Coastal Subregions (and Southern Subregion); a draft reserve design for the Central/Coastal Subregional NCCP plan has been prepared (County of Orange 1994a).

The NCCP program is intended to establish and manage a viable, permanent system of coastal sage scrub reserves complete with its matrix of other habitats, as well as identify areas that would be appropriate for development within the Central Subregion. The potential for establishment of a viable reserve system in the Central Subregion is the critical element in determining the impact of the ETC on the gnatcatcher; the ETC is a critical factor affecting/influencing reserve design and viability in this area. If it can be found that a viable coastal sage scrub reserve system can be established in the Central Subregion that includes the ETC project and its accompanying mitigation measures, the ETC, (assuming these are adequate means to minimize and mitigate impacts) would likely not impair the overall utility of the habitat in the Central Subregion as essential gnatcatcher population centers.

Connectivity

Connectivity between habitat reserve areas is essential for maintenance of the viability of the wide range of species inhabiting coastal sage scrub, including the gnatcatcher, over the long-term. As discussed above, while it is not clear to what extent major highways act as barriers to gnatcatcher movement, the ETC would be a significant barrier to terrestrial species, such as the coyote, mountain lion and other large predators and their prey. The presence of a full complement of resident species is important to the health and viability of a naturally functioning ecosystem. Since the Central subarea is bifurcated by the ETC, connectivity between reserve units must be provided through wildlife crossings.

The ETC has incorporated four wildlife crossings into its project design: three along the North Leg and one along the East Leg. The sites for these four wildlife crossings were selected to optimize wildlife crossing, particularly the wide-ranging mountain lion and deer, as determined by

JUL- 6-94 WED 16:16

FISH AND WILDLIFE

FAX NO. 6194319618

P. 19

Peter C. Markle (1-6-94-F-17)

19

movement studies conducted for both these species, and expert opinion (FHA 1994a, P&D Technologies 1994, FHA 1994b, 1994c). The wildlife crossing locations and sizes are described briefly here and in more detail in FHA 1994c. The North Leg wildlife crossings include: the Oak Canyon wildlife crossing at ETC Station Number 710, approximately 50 feet high, 100 feet wide at bottom to 250 feet wide at the top, with a 220-foot traverse; the Southern California Edison easement crossing at ETC Station Number 758, approximately 29 to 40 feet high, 100 feet wide (which includes a dirt maintenance and fire road) to 230 feet wide at the top, with a 250-foot traverse; and the Windy Ridge crossing at ETC Station Number 816, approximately 30 feet high, 80 feet wide at the bottom to 220 feet wide at the top, with a 260-foot traverse. The East Leg wildlife crossing includes the Haul Road, at ETC Station Number 395, approximately 20 feet high, 70 feet wide at the bottom to 130 feet wide at the top, with a 600-foot traverse. The ETC structure above this crossing has three large gaps between bridges, ranging between approximately 40 to 160 feet. In addition, the ETC mitigation program provides for 10 culverts at least 54 inches in diameter along the East Leg, 3 culverts at least 54 inches in diameter for the Foothill Transportation Corridor Connection and 9 culverts at least 54" in diameter along the North Leg to further enhance wildlife crossing of the ETC (FHA 1994c).

The NCCP Conservation Guidelines state that "Corridors or linkages function better when the habitat within them resembles habitat that is preferred by target species". As part of the project description, the area disturbed by construction of the wildlife crossings will be revegetated with the appropriate vegetation, to provide appropriate cover, as described in a revegetation plan that will be coordinated with the Service. In addition, wildlife conservation easements will be obtained for all habitat mitigation areas and movement corridors under the wildlife crossings. Also, natural seeps or springs will be protected and/or water guzzlers and salt licks will be constructed/installed as part of each wildlife crossing, to induce wildlife to use these artificial structures. The Service finds that the four wildlife crossings and other associated mitigation measures proposed as part of the project and included in "Terms and Conditions" below, together with the Central Subarea NCCP Reserve Design that includes large reserve areas which could be connected via the crossings, will provide connectivity between the Central Subregion reserve units, as described below.

Along the North Leg, the northern-most wildlife crossing is located on Windy Ridge (FHA 1994c). This crossing location would provide a major connection between existing dedicated open space and NCCP reserve areas on both sides of the ETC (County of Orange 1994). This crossing is located approximately 500 feet downslope of an existing wildlife corridor, and although there has been some doubt as to whether this crossing would be effective, especially for deer (Padly, Pers. Comm), deer and mountain lion would likely use this crossing (FHA 1994b, Heffley, CDFG, Pers. Comm.). The topography is steep. In consultation with the Service, the TCA proposes to recontour the area leading to the crossing on the eastern side of the alignment to modify and flatten the slope, and make the area more attractive for wildlife movement. Careful consideration will be required to ensure that the topography is favorable to wildlife movement, while ensuring that a revegetation plan will be successful.

JUL- 6-94 WED 16:17

FISH AND WILDLIFE

FAX NO. 6194319618

P.20

Peter C. Markle (1-6-94-F-17)

20

for this crossing. The water guzzlers should also help to induce wildlife to use this crossing.

Another crossing is provided about midway along the North Leg, at the Southern California Edison easement. This crossing would provide animals with access across the corridor into the Weir Canyon Wilderness Area, as expanded by the NCCP reserve. This crossing is located in the "Policy Plan" area of the Central Subarea NCCP; a designation which means that planning and reserve design decisions will be delayed until some time in the future, but will be dictated by "Policy Plan development criteria" developed as part of the Central Subregion NCCP (County of Orange 1994). The NCCP, through specific development criteria, will be required to ensure the use of these areas as wildlife crossings.

The third crossing along the North Leg of the ETC will occur at the Oak Canyon Crossing. This site is considered to be excellent for ensuring both deer and mountain lion movement (TCA 1992, FHA 1992, FHA 1994a, FHA 1994b). Fremont, Weir and Blind Canyons all connect in this area, providing animals with numerous possibilities for dispersal. The topography is easily traversed. This crossing is also located within the "Policy Plan" area of the Central subarea and will have the same requirements as the Southern California Edison easement crossing.

A large bridge spanning Santiago Canyon would be constructed as part of the ETC. This structure, designed primarily to avoid flood control problems, will also provide for recreational pedestrian, bikeway, and equestrian pathways between development proposed on both sides of the ETC in this area. This bridge will allow for the movement of coyotes and other small mammals, but will primarily encourage movement of nuisance species, such as skunks, opossums and red fox.

On the East Leg, a wildlife crossing has been sited within the Hick's Canyon Watershed near Haul Road (FHA 1994b, 1994c). This crossing will provide for wildlife movement from the Cleveland National Forest, through the currently designated Limestone Canyon Wilderness area, as augmented by NCCP reserve design, across the ETC to the Lomas Ridge Open Space area, as significantly augmented by the NCCP reserve design. While it presents a long traverse for wildlife (approximately 600 feet), the design of the bridge structure above the crossing includes three large gaps of space that will allow a significant amount of natural light will penetrate the crossing and reduce its potential to be tunnel-like. There are gaps ranging from 40 feet to 160 feet at regular intervals (50 to 110 feet) that accommodate the bridge structures planned. The most important animal anticipated to use this corridor is the coyote. Along the East Leg, there are also three culverts at least 54 inches in diameter associated with the ETC/FTC(N) interchange in this area that will allow movement of small mammals. In addition, the existing Bee Canyon Access Road will also provide for wildlife movement. The Haul Road crossing is essential to maintaining the health and viability of the Lomas Ridge reserve unit. The Haul Road Crossing will reduce the impacts to wildlife movement in this area.

JUL- 6-94 WED 16:17

FISH AND WILDLIFE

FAX NO. 6194319618

P.21

Peter C. Markle (1-6-94-F-17)

21

As discussed earlier, the ETC design includes large culverts along both legs which may be used by small mammals and provide additional potential for wildlife to traverse the corridor. Coyotes have been known to use culverts with a diameter of 54 inches or greater. These culverts will supplement the main wildlife crossings considered minimally necessary to maintain connectivity between habitat fragments.

Central Subregional NCCP Reserve Design

As discussed previously, a draft Reserve Design for the Central and Coastal Subregions was presented on April 22, 1994 (County of Orange 1994). In general, the Central Subregional Reserve Design incorporates already committed open space and areas of open space contemplated in conjunction with the approval of certain development projects in other areas. This open space system would also be augmented by adding reserve areas known to contain significant populations of gnatcatchers and cactus wren, and to provide linkages of natural habitat. The Central Subregion draft Reserve Design incorporates over 21,000 acres of coastal sage scrub and its matrix of other associated habitats, including lands necessary for connectivity (R.J. Meade, Pers. Comm.). Existing, planned and/or proposed regional open space lands in the Central Subregion, as identified in the Biological Assessment, includes a total of 8,379 acres of coastal sage scrub in Weir Canyon Wilderness Park, Santiago Oaks Regional Park, Irvine Regional Park, Open Space Area 31 in Gypsum Canyon, Peter's Canyon Regional Park, the Loma Ridge Open Space system, miscellaneous open space associated with the East Orange General Plan, Limestone Canyon Regional Park, and Whiting Ranch Wilderness Park. Significant areas which were added as reserve unit areas as part of the NCCP planning process include: a significant expansion to incorporate coastal sage scrub and significant gnatcatcher and coastal cactus wren populations south of the existing Loma Ridge Open Space system, including Upper Rattlesnake Canyon, Hicks Canyon, lower Foothills of Bee/Round Canyons - a NCCP reserve unit totalling 2,441 acres in size, with connections to the Limestone Canyon Regional Park NCCP reserve unit, totaling 10,934 acres; and a major expansion of natural habitat around the Weir Canyon Wilderness Area - a NCCP reserve unit totalling 3,923 acres, which would connect with a significant amount of coastal sage scrub habitat in a habitat matrix in the Weir, Gypsum and Coal Canyon areas across the ETC - a NCCP reserve unit totaling about 2,579 acres (R.J. Meade Pers. Comm.).

The Reserve Design provides substantial acreage both east and west of the ETC, and utilizes the wildlife crossings included in the ETC project to maintain connectivity between significant reserve areas. As discussed previously, the ETC includes three wildlife crossings at strategic locations along the North Leg to provide for connectivity between reserve units. The reserve design, together with these crossings, is intended to allow for the movement of small and large mammals, including predators and their prey base among the Cleveland National Forest, Gypsum and Coal Canyon areas across the ETC into the Weir Canyon Wilderness Area as expanded by the Central Subregional draft Reserve Design. Gnatcatchers (and cactus wren) would be more likely to disperse over the ETC.

Peter C. Markle (1-6-94-F-17)

22

The East Leg of the ETC essentially fragments the south-facing frontal slopes and lowland areas of the Loma Ridge, from a large, contiguous block of natural habitat to the east, which could have disastrous impacts to coastal sage scrub ecosystem in this area, including significant impacts to the viability of gnatcatcher and coastal cactus wren populations. As stated previously, the ETC, in combination with the existing natural barrier of rugged, steep terrain immediately adjacent to this area could provide a significant barrier to gnatcatcher dispersal from the Loma Ridge source populations to the more scattered, less dense eastern subpopulations. The Central Subregional reserve design shows coastal sage scrub patches on these south facing frontal slopes and lowland areas of the Loma Ridge preserved as an approximately 2,400-acre reserve unit. This reserve unit provides for connectivity of coastal sage scrub in a matrix of grassland habitat, from the Siphon Reservoir north to the Loma Ridge/Santiago Hills area. Connectivity to preserved habitat across the ETC to the 10,934-acre Limestone Canyon NCCP reserve unit is provided by the Haul Road wildlife crossing, and to a lesser extent, the Bee Canyon access road and the three culverts associated with the ETC/FTC interchange near Siphon Reservoir. Maintenance/management of this area as a NCCP reserve unit, as a probable source population for the populations associated with the larger Limestone Canyon NCCP reserve unit, is likely essential to maintenance of gnatcatcher population in the Central Subregion over the long-term.

As discussed in the NCCP Conservation Guidelines, little is known about the coastal sage scrub ecosystem. The optimal size of a reserve unit to maintain coastal sage scrub ecosystem viability has not been studied. However, by applying a couple of the basic tenants of conservation biology, it is possible to reach some initial conclusions regarding the reserve design of the Lomas Ridge: 1. "Larger Reserves are Better" - Large blocks of habitat containing large populations of the target species are superior to small blocks of habitat containing small populations (CDFG 1993); and 2. "Link Reserves with Corridors" - Interconnected blocks of habitat serve conservation purposes better than do isolated blocks of habitat. The Lomas Ridge reserve unit is approximately 2,400 acres in size, and contains significant populations of gnatcatchers (and cactus wrens). This reserve unit is linked to a much larger NCCP reserve unit, the Limestone Canyon reserve unit, via the Haul Road wildlife crossing. The Limestone Canyon NCCP reserve unit consists of approximately 10,900 acres of contiguous habitat east of the East Leg of the ETC and north of the FTC (North). This area contains scattered populations of gnatcatchers and cactus wren.

While the Service has only recently obtained some of the digital data for the Central and Coastal Subregional NCCP (Stine, USFWS, Pers. Comm.), we conclude at this time that the Loma Ridge NCCP reserve unit as currently designed, in concert with the ETC-proposed wildlife crossing at Haul Road that will provide connectivity to the Limestone Canyon NCCP reserve unit, and with management provided through the NCCP plan, will likely provide for the long-term viability of the gnatcatcher, and likely other coastal sage scrub associated species in this area.

The County of Orange (County of Orange 1994b) has determined, in consultation with County's NCCP consultant, Dr. Rob Schonholtz, that the ETC would not

JUL- 6-94 WED 16:19

FISH AND WILDLIFE

FAX NO. 6194319618

P. 23

Peter C. Markle (1-6-94-F-17)

23

preclude or prevent the preparation of an effective subregional NCCP program.

In summary, the Service concludes that the proposed project will not jeopardize the overall survival and recovery of these species or the maintenance of viable populations of the species within the Northern Orange County Santa Ana Mountains and project "Action Area", primarily because of the habitat reserves proposed as part of the draft Central Subregional NCCP Reserve Design, and the substantial impact avoidance and compensation measures incorporated into the project description. Further, given these impact avoidance and compensation measures and the best scientific information, the Service concludes that the project-related bifurcation, the removal of coastal sage scrub habitat, and the indirect impacts likely will not impact the overall utility of the Northern Orange County Santa Ana Mountains as important, and probably essential, coastal cactus wren and gnatcatcher habitats and population centers. This conclusion is based upon the best available information, including the draft Subregional Reserve Design for the Central and Coastal NCCP Subregions, presented to the Service on April 22, 1994. If these conditions change or if subsequent information is received that determines that the NCCP reserve design is not valid, then this conclusion would also be invalidated.

Technical Assistance

Coastal Cactus Wren

The proposed project effects described above for the gnatcatcher are similar to those likely to affect the coastal cactus wren.

Consistency with NCCP Guidelines

In addition to reviewing the project for its impacts to the NCCP Planning Process ongoing in Orange County, the Service has reviewed the ETC project for consistency with the NCCP Process and Conservation Guidelines. The project applicant, TCA, has enrolled the ETC in the Central and Coastal NCCP Planning Effort, and is participating in the NCCP planning process. In general, the Service concludes that the ETC is generally consistent with the Guidelines and with the Central and Coastal Subregional NCCP. Specifically, the Service concludes that project-related impacts:

- 1) will not foreclose future conservation planning efforts until such time as an NCCP has been completed and long-term enhancement and management programs are formulated. The Central and Coastal Subregional NCCP is being prepared in concurrent with plans for the ETC. The NCCP plan is currently in the design phase, which includes the ETC alignment and associated mitigation measures. As discussed earlier, the ETC was shifted approximately 500 feet east, in order to reduce impacts to the Central Subregion NCCP reserve design, and to lessen impacts to significant populations of gnatcatchers and coastal cactus wrens. To address the issue of connectivity between reserve units that would be bifurcated by the ETC, an additional wildlife crossing was added to the project description. The project, including the proposed mitigation package, will provide funding necessary to assist in providing for the perpetual enhancement and management of conservation areas containing significant blocks

JUL- 6-94 WED 16:20

FISH AND WILDLIFE

FAX NO. 6194319618

P. 24

Peter G. Markle (1-6-94-F-17)

24

of coastal sage scrub habitat within the federal "Action Area" and the Central Subregion.

2) will not result in an interim loss equal to, or exceeding, 5% of the coastal sage scrub in any one subregion. The loss of coastal sage scrub by the ETC project would represent approximately 1.0 percent of the coastal sage scrub within the Central Subarea (FHA 1994b).

3) are, to the maximum extent practicable, limited to areas with smaller populations of target species. While the ETC has been in the planning process for a number of years, it is also being planned concurrent with the Central and Coastal Subregional NCCP. Areas of major biological importance, such as the Weir Wilderness Park and the Lomas Ridge/Siphon Ridge areas have been avoided to the maximum extent possible by project design and alignment changes. NCCP target species are generally present along the alignments of the North as well as the East Legs of the project. Out of an estimated eight populations of California gnatcatcher that are concentrated in the subregion (i.e. Weir/Santiago Regional Park, Peters Canyon, Irvine Park, Loma Ridge, Rattlesnake Reservoir, Siphon Reservoir, Aqua Chignon Wash and scattered locations in Limestone Regional Park), the project avoids all, except for a portion of the Siphon Reservoir population (P&D Technologies 1994, FHA 1994b). Throughout most of the coastal sage scrub adjacent to the project and within the grading limits, particularly on the north leg, the California gnatcatcher has been only sparsely reported (P&D Technologies 1994). The exception to that observation occurs at Siphon Reservoir. The TCA has recently moved the Corridor to address this concern and further reduced biological impacts. This shift of alignment further east of Siphon Ridge reduces coastal sage scrub impacts by an estimated 14 acres and reduces impacts to gnatcatcher pairs from eight to four. The ETC is located within the Santa Ana Foothills, which contains significant, but scattered, populations of the gnatcatcher and coastal cactus wren. Project design changes have minimized impacts to a large array of sensitive species.

4) do not, to the maximum extent practicable, disproportionately affect specific subunits of the environmental gradient in each subregion (as defined by vegetation subcommunity, latitude, elevation, distance from coast, slope, aspect or soil type. The ETC, as an essentially linear project, traverses a variety of vegetation communities, elevations, slopes, aspects and soil types (FHA 1994).

5) do not compromise the NCCP effort to protect, prior to completion of a subregional plan, areas of higher long-term conservation value as defined by the extent of coastal sage scrub habitat, proximity of that habitat to other habitat, the value of the habitat as landscape linkages or corridors, or the presence of sensitive species. While the Service only recently received some of the Central Subregional NCCP data from the County of Orange, and has not been able to determine the long-term conservation value of lands within the Central subregion, the Central Subregional draft reserve design has attempted to identify and include in the NCCP reserve, those areas that would appear to be of high value for long-term conservation (notable exceptions to this are the Tustin Ranch area and portions of the East Orange Planning Area). In addition, by incorporating the four wildlife crossings in strategic locations

JUL- 6-94 WED 16:20

FISH AND WILDLIFE

FAX NO. 6194319618

P.25

Peter C. Markle (1-6-94-F-17)

25

along the ETC, the ETC project provides for the connectivity essential to maintaining the long-term health and viability of the NCCP reserves. In the Siphon Reservoir area, where an earlier alignment of the ETC had posed significant impacts to gnatcatcher and coastal cactus wren populations, the alignment was shifted 500 feet off the ridge to reduce these impacts, and to accommodate the NCCP reserve design. The revegetation and preservation measures which are proposed as a part of the project promote coastal sage scrub and biological values to help maintain and potentially enhance target species and their occupation of the southern foothills of the Santa Ana Mountains. The program will help facilitate gnatcatcher movement among Peters Canyon, Loma Ridge, Rattlesnake Canyon, Hicks Canyon and Siphon Ridge as well to the east at Aqua Chignon Wash. The revegetation and preservation area has been selected within and adjacent to open space areas which support substantive populations of California gnatcatcher and cactus wren populations.

6) do not compromise the NCCP effort to direct development pressure to areas that have lower conservation value. As discussed above, much of the coastal sage scrub habitat in the North Orange County Santa Ana Foothills is in committed open space or existing conservation areas, as augmented by the Central Subarea NCCP reserve design. The ETC will not necessarily direct development pressure towards (or away from) areas of higher long-term conservation value. Subregional planners have the task of identifying areas of long-term conservation value (the Reserve system) to steer development pressure into areas of lower conservation value within the North Orange County Santa Ana Foothills and federal "Action Area" through the continued NCCP effort.

7) do not compromise the NCCP effort to ensure that all interim habitat losses are adequately mitigated and that said mitigation contributes to the interim subregional mitigation program that will be subsumed in the long-term subregional NCCP. As is indicated above, the project, including the proposed compensation measures, will enhance the NCCP's goal to provide for the perpetual enhancement and management of coastal sage scrub, gnatcatcher and coastal cactus wren conservation areas within the Central subregion.

In addition, the Service concludes that the research, management and restoration measures that have been developed for this project constitute special mitigation measures, as required for the NCCP Program (CDFG 1993). The Conservation Guidelines emphasize the importance of management and restoration research to subregional NCCP planning and further state that such efforts are "essential to the adaptive management of coastal sage scrub habitat". It is further recognized that such efforts "undertaken as mitigation during the interim program will add to the overall ability of these conservation tools to be employed more successfully in the future" (CDFG 1993).

In summary, the Service concludes that the loss of the habitat within the project footprint and the overall direct and indirect effects of the project will not result in the extirpation of the Northern Orange County Santa Ana Mountains populations of the gnatcatcher or Brauntons' milkvetch. Given the commitment of the Federal Highway Administration and the applicant to provide the resources to conduct and fund the restoration, enhancement and management

JUL- 6-94 WED 16:21

FISH AND WILDLIFE

FAX NO. 6194319618

P.26

Peter C. Markle (1-6-94-F-17)

26

activities for coastal sage scrub habitat in the Central Subregion, and the perpetual, intensive monitoring and management activities proposed, the Service concludes that project related impacts likely will not jeopardize the survival or recovery of the gnatcatcher.

Cumulative Impacts

Cumulative effects are those impacts of future State, local government, and private actions affecting endangered and threatened species that are reasonably certain to occur in the project "Action Area". Future federal actions will be subject to the consultation requirements established in Section 7 of the Endangered Species Act (Act) and, therefore, are not considered cumulative to the proposed action.

The majority of activities anticipated to affect these species within the foreseeable future are local projects with no direct Federal involvement. A large number of projects that lack a Federal nexus also have occurred or are proposed within the current range of the gnatcatcher and the coastal cactus wren. These projects could result, overtime, in significant cumulative effects to the gnatcatcher and to Brauntons' milkvetch. However, private projects with no Federal nexus are subject to certain other regulatory constraints of the Act. For example, Section 4 of the Act requires the Service to list species that are threatened or endangered, and section 9 of the Act prohibits the unlawful "take" [e.g., harm, harass] of listed species "by any 'person', including private individuals and entities."

Anticipated prohibitions against "take" and a desire to engage in proactive planning have prompted efforts by local governments and large land owners to develop Habitat Conservation Plans (HCPs), pursuant to authorization for incidental take under section 10 of the Act. In addition and as discussed within this document, The Resources Agency, the Department of Fish and Game, together with local governments, landowners and environmental groups and in cooperation with the Service, are together developing a Natural Communities Conservation Plans that would cover most of Orange County, including the project area. The efforts of all parties, working cooperatively with the agencies, and combined with current federal protection for the gnatcatcher that limits loss of coastal sage scrub habitat to no more than 5% during the planning stages are intended to provide mitigation for project-related impacts to the gnatcatcher, coastal cactus wren, orange-throated whiptail, and the entire suite of sensitive species resident in coastal sage scrub in the future. However, in the absence of NCCPs/HCPs incorporating substantive impact avoidance and compensation measures, the Service believes that habitat destruction, cowbird parasitism, and indirect impacts resulting from a variety of individual projects will effect the distribution and potential expansion of gnatcatchers and cactus wren throughout their historic range.

Nearly all of the land in the "Action Area" and in the Central Subregion that is not developed is within jurisdictions that have enrolled in the NCCP Program. As a result, all such lands are subject to the interim strategy outlined in the special rule, the Conservation Guidelines and other requirements of the NCCP process. This ensures that future land uses in this Subregion will be evaluated as to their impacts to the subregional planning

JUL- 6-94 WED 16:22

FISH AND WILDLIFE

FAX NO. 6194319618

P. 27

Peter C. Markle (1-6-94-F-17)

27

effort, and will be required to provide mitigation to ensure protection of the gnatcatcher and other target species in enrolled areas.

In the event that it is determined that any future proposed development in the "Action Area" would have adverse impacts on gnatcatchers, cactus wrens or other coastal sage scrub sensitive species covered in the NCCP plans, appropriate and adequate mitigation measures would be developed in concert with representatives from the Service and Department of Fish and Game to ensure the protection of those species. For any property in the "Action Area" that is not covered by a jurisdictional enrollment in the NCCP, that property would still be subject to the requirements of CEQA and the Endangered Species Act. The following quotation from the NCCP Process Guidelines addresses this specific issue:

CEQA has a mandatory finding of significance wherever:

'(a) The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, ...' (CEQA Guidelines, section 15065)

By that standard, most coastal sage scrub habitat in the NCCP Program area is sensitive and could trigger a CEQA finding of significance. Accordingly, the presence of coastal sage scrub would be disclosed and potential impacts to the gnatcatcher and coastal cactus wren would be revealed.

The EIS analyzes growth inducing impacts effects and land uses in the "Action Area" in detail. The EIS states that potential growth-inducing impacts generated by the ETC are most likely to affect nearby developed and undeveloped lands located in portions of north and central Orange County. These areas of potential impact include areas within the City of Anaheim's and Orange's Sphere of Influence. Siphon Ridge, Hick's Canyon, and Rattlesnake Canyon contain the majority of coastal sage scrub that is occupied by the gnatcatcher. The ETC would have no growth inducing impacts in these areas, as growth here is already planned as part of the City of Irvine General Plan (FHA 1994). Specifically, from north to south, Loma Ridge and the south-facing slopes in upper Rattlesnake Canyon are planned as open space, whereas further south in Hick's Canyon, the designation is residential estate and recreation. Siphon Ridge is designated agriculture, with a development reserve zoning designation. The ETC is not anticipated to change these designations to the east or west within this reach.

Aside from Siphon Ridge, Hick's Canyon and Rattlesnake Canyon, other significant biological resources are present in Blind, Fremont, and Gypsum watersheds. There are no current development plans in Blind and Fremont Canyons. However, the ETC does provide access to these areas, particularly to Blind Canyon. Consequently, the ETC does potentially have growth-inducing impacts in Blind and Fremont Canyon. However, these areas support little occupied habitat for the gnatcatcher. Growth-inducing impacts in these areas would not substantially affect habitat for the gnatcatcher, or other coastal sage scrub-associated species. Nevertheless, full environmental review of

Peter C. Markle (1-6-94-F-17)

28

future projects in areas along the ETC will be required prior to development. As described above, this entire area will be addressed in the Central and Coastal NCCP, which will address the anticipated impacts that would occur throughout the Subregion to coastal sage scrub habitat and the three target species.

In summary, the Service concludes, given all relevant information and analysis, that while the project could induce growth in portions of the project "Action Area", all future growth, whether planned or unplanned will be evaluated to determine its effects on the gnatcatcher under the Act, the NCCP Program and/or CEQA and will be constrained by the protective mandates of those statutes.

While little is known about where the Brauntons' milkvetch occurs, potential habitat occurs throughout the Gypsum Canyon and the northern end of Blind Canyon and the majority of Cypress Canyon. The growth-inducing impacts associated with the ETC in the Gypsum and Blind Canyon areas could be substantial.

Technical Assistance

Coastal Cactus Wren

Effects to the coastal cactus wren resulting from the above cumulative, growth-inducing actions are similar to those described for the gnatcatcher.

Many-stemmed Dudleya and Chaparral Beargrass

Significant cumulative and growth-inducing impacts on the many-stemmed dudleya in the project area would result from development in the East Orange, Mountain Park and Cypress Canyon areas.

Chaparral Beargrass is already under consideration for listing on an emergency basis because of cumulative impacts to this species. Significant cumulative effects would occur as a result of ETC construction.

Incidental Take

Sections 4(d) and 9 of the Act prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR section 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR section 17.3). Under the terms of Section 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking, provided that such taking is in compliance with the

Peter C. Markle (1-6-94-F-17)

29

reasonable and prudent measures, and terms and conditions that implement them, as set forth below.

The Service hereby incorporates by reference the 17 mitigation measures from the Federal Highway Administration's "Description of Proposed Action" into this incidental take statement as part of these "Terms and Conditions". The "Terms and Conditions" reflect the mitigation measures as proposed, with modifications where necessary as determined by the Service. Where these "Terms and Conditions" vary from or contradict mitigation measures proposed under "Description of Proposed Action", specifications in these terms and conditions shall apply.

The Federal Highway Administration has a continuing duty to regulate the activity that is covered by this incidental take statement. If the Federal Highway Administration fails to require the applicant adhere to the "Terms and Conditions" of the incidental take statement the protective coverage of section 7(o)(2) of the Act may lapse. This incidental take authorization is null and void if the above project description changes, if any mitigation or conservation measure in the EIS, Technical Report, Biological Assessment, or supplemental documentation is not fully carried out or executed, or if any Terms and Conditions or Reasonable and Prudent Measures as defined or described below are not met by The Federal Highway Administration, Transportation Corridor Agencies or their designated agents or successors, if the draft NCCP Reserve Design presented to the Service on April 22, 1994 is significantly modified, or if subsequent information received by the Service determines that the April 22, 1994 draft NCCP Reserve Design, incorporating the ETC alignment does not represent a viable reserve system for maintenance of the coastal sage scrub ecosystem.

It is not possible to precisely predict the amount of incidental take that would be associated with ETC construction, for several reasons:

- The number and location of birds will vary from season to season.
- The precise effects on breeding territories near the edge of the grading area are not known.
- The precise effects of noise and other disturbance on breeding territories outside the area of direct effect, but within the area affected by noise from the Corridor, can only be estimated.

However, given the information in the Biological Assessment and data and information developed supplemental to the Biological Assessment (FHA 1994b and 1994c), the Service anticipates that the following take could occur as a result of the proposed action:

1. Fifty one (51) gnatcatchers may be accidentally injured or killed during project construction or operation activities.
2. An unknown number of gnatcatcher eggs may be destroyed during project activities.

Peter C. Markle (1-6-94-F-17)

30

3. An unknown number of gnatcatcher fledglings may be destroyed during project activities.

The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the more restrictive provisions of the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The Service is developing a program to address incidental take under the Migratory Bird Treaty Act.

If, during the course of the construction and operation of the project, gnatcatchers are injured or killed or if the take limit is reached, the Federal Highway Administration shall notify the Service at once in writing. If, during the course of the construction, implementation, or operation of the project, the amount or extent of the incidental take limit is exceeded, the Federal Highway Administration or its agents must cease the activity resulting in take and reinitiate consultation with the Service immediately to avoid further violation of Section 9 of the Act. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR 402.14(1). The Federal Highway Administration and its agents should provide an explanation of the causes of the taking.

Reasonable and Prudent Measures

The Service believes that the following Reasonable and Prudent Measures are necessary and appropriate to minimize incidental take:

1. The Federal Highway Administration or its agents shall provide mitigation as described, implied, or suggested in the EIS, Technical Report, Biological Assessment and all other relevant letters and documents to minimize incidental take and to compensate for unavoidable impacts to the species.
2. The Federal Highway Administration and its agents shall minimize to the extent possible the harming or harassing of gnatcatchers and removal of coastal sage scrub habitat in conjunction with construction or other site development activities.
3. The Federal Highway Administration or its agents shall obtain all applicable state and Federal permits to take the gnatcatcher or coastal cactus wren and remove coastal sage scrub habitat. The incidental take authorization in this Biological Opinion is summarily revoked in the absence of such permits.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Act, the Federal Highway Administration and its agents (e.g., CALTRANS, TCA, construction personnel, private parties) are responsible for compliance with the following terms and conditions, which implement the "Reasonable and

Peter C. Markle (1-6-94-F-17)

31

Prudent Measures" described above. To this end, the Federal Highway Administration or its agents shall, at a minimum, provide mitigation as described, implied, or suggested in the EIS, Technical Report, Biological Assessment and other relevant letters and documents to minimize incidental take (except as these measures are modified by the following Terms and Conditions). In part:

1. The Federal Highway Administration or its agents shall shift the ETC an estimated 500 feet further east away from Siphon Ridge. This shift effectively reduces coastal sage scrub impacts, gnatcatcher impacts and provide a larger block of contiguous open space around Siphon Reservoir.
2. The Federal Highway Administration or its agents shall implement the Siphon Reservoir/Ridge Preservation and Restoration Program as described in the biological assessment or in subsequent information developed in consultation with the Service. The general area for the 194-acre preservation/restoration program is described as follows: the McCollough water line marks the northern-most boundary; Bee Canyon borders the area to west; Portola Parkway borders the area to the south; and the ETC itself forms the easternmost boundary. The preservation program shall include an estimated 48 acres near Siphon Ridge, and 34 acres to the southwest of Siphon Reservoir. This preservation acreage totals an estimated 82 acres. The restoration component of the Program includes creation of an estimated 112 acres of coastal sage scrub habitat located generally to the west and northwest of the reservoir, within the above defined parameters. It is anticipated that the restoration of the remaining acreage could begin implementation in the Fall of 1995. Coastal sage scrub habitat shall be deemed to be 'acceptable' if:
 - a. the habitat is occupied by breeding pairs of gnatcatchers; or
 - b. the Service and the Federal Highway Administration or its agents unanimously agree that the habitat has the structure and composition of naturally-occurring gnatcatcher habitat or fully functional coastal sage scrub; or
 - c. the Federal Highway Administration or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago.
3. The Federal Highway Administration or its agents shall conduct a one-half acre pilot coastal sage scrub restoration/revegetation project. The program could also serve as a demonstration project for the NCCP. Coastal sage scrub restoration/revegetation efforts on recently cleared agricultural areas has been limited and not clearly documented; therefore, the results of this pilot program are anticipated to provide valuable data for future projects of this kind, and will also be the basis for developing larger coastal sage scrub restoration/revegetation projects, including remaining available agricultural land surrounding

Peter C. Markle (1-6-94-F-17)

32

Siphon Reservoir. The site is one-half acre of recently cleared orange groves located on the east facing slopes just northwest of Siphon Reservoir within The Irvine Company Orange Orchard No. 300. The orange trees were cut six inches above the trunk and treated with an herbicide approximately six months ago, leaving the root system intact. The top of the trees were chipped into mulch piles with some still remaining on the site.

The ultimate goal is to restore native coastal sage scrub to the surrounding reservoir hills, historically in agricultural production providing increased forage and nesting, not only for the California gnatcatcher but many other coastal sage scrub-associated species.

The one-half acre pilot coastal sage scrub program started in January 1994 and is currently underway with native seed collection being the first activity conducted. The initial program is planned to be conducted in two phases over the first year including seed and cactus pad collection, staking the site, collecting soil samples, site preparation, planting and seeding, monitoring and watering and preparing monitoring reports.

4. The Federal Highway Administration or its agents shall contribute \$1,515,000 to a conservation fund established by the Service. Payments to the fund shall be made to the Fish and Wildlife Foundation. The conservation fund is to be used to support the Natural Communities Conservation Planning effort, including but not limited to management, restoration and enhancement of lands preserved through the Central and Coastal Subregional Planning effort. Uses and disbursement of this Conservation Fund shall be determined by the Service. The Conservation Fund will be set up in a phased-installment program over a three-year period. Each installment will be for the amount of \$505,000. The first installment will be paid by January 1996 or within 90 days after the bond sale (based on the bond sale occurring on or after October 1, 1995), the second installment will be paid by January 1, 1997 and the third installment will be paid by January 1, 1998. These payments and this compensation measure shall be undertaken above and beyond (and in addition to) all other compensation measures or impact avoidance measures identified herein.
5. The Federal Highway Administration or its agents shall restore 170 acres at designated areas along the Corridor graded slopes with coastal sage scrub plant species. The revegetation effort shall be considered acceptable if the total cover by native coastal sage scrub species is at least 70 percent and the vegetation is not being artificially sustained, or if the Federal Highway Administration or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago. In addition, this roadside revegetation effort shall provide for a maintenance zone that should help to prevent fires adjacent to the ETC. This maintenance area shall include an unvegetated strip of four feet in

JUL- 6-94 WED 16:26

FISH AND WILDLIFE

FAX NO. 6194319618

P. 33

Peter C. Markle (1-6-94-F-17)

33

width adjacent to the paved shoulder, and an additional 10 foot strip of low fuel volume native plants that can be routinely mowed.

6. The Federal Highway Administration or its agents shall construct a minimum of four wildlife crossings at four locations as described in the FEIS (FHA et al 1994), the Biological Assessment (P&D Technologies 1994) and in subsequent documentation developed between the Service, the Federal Highway Administration and the TCA (FHA 1994c). In conjunction with construction at the four wildlife crossings, natural springs or seeps will be protected and/or gallinaceous guzzlers (catch basin/watering devices) or other water storage containers and salt licks shall be constructed and installed at both ends of each of the four wildlife crossings to encourage the use of the crossings. A final grading plan that includes a topsoil preservation program shall be approved by the Service prior to the construction of the wildlife crossing at Station 816 (Windy Ridge Crossing). In addition, fencing at least 10 feet in height shall be installed along the both sides of the ETC in the general vicinity of the Windy Ridge wildlife crossing, to prevent roadside mortality and to assist in funneling animals toward the Windy Ridge crossing. Placement of the fencing shall be approved by the Service prior to construction of the wildlife crossing.
7. The Federal Highway Administration or its agents shall provide 10 culverts at least 54" in diameter along the East Leg and 9 culverts at least 54" in diameter along the North Leg, and 3 culverts at least 54" in diameter for the Foothill Transportation Corridor Connection to enhance wildlife crossing. The locations and sizes of the culverts shall be as described in documentation developed subsequent to the Biological Assessment (FHA 1994c).
8. The Federal Highway Administration or its agents shall revegetate the area disturbed by construction of the wildlife crossings with native habitat indigenous to the area. A revegetation plan for each crossing shall be approved by the Service prior to the construction of the wildlife crossings. The revegetation effort shall be considered acceptable if the total cover by native species indigenous to the area, including coastal sage scrub, is at least 70 percent and the vegetation is not being artificially sustained, or, the Federal Highway Administration or its agents can demonstrate, to the satisfaction of the Service, that restored coastal sage scrub habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago.
9. The Federal Highway Administration or its agents shall conduct movement studies near each of the four wildlife crossing locations during the Spring and Fall. Reports shall be prepared annually, beginning one year after the opening of ETC and continuing for a total of five years. Alternatively, TCA may participate in or provide monetary contributions to radio tracking surveys of predators in the region, conducted by the Service or other parties approved by the Service.

Peter G. Markle (1-6-94-F-17)

34

If the studies indicate the measures are less than successful, as determined by the Service, then additional corrective measures shall be conducted, including the possibility of the construction of a new wildlife crossing, as necessary.

10. The Federal Highway Administration or its agents shall ensure the operation of twenty cowbird traps in the Siphon Reservoir area and along the East Leg of the ETC in perpetuity. Funds shall be provided sufficient to conduct trapping annually or to establish an endowment sufficient to provide trapping in perpetuity. Cowbird trapping shall begin during the spring of 1995 and shall continue for a minimum of five months each calendar year, unless the Service and the Federal Highway Administration or its agents unanimously agree that a lesser effort is justified during a given calendar year. The design, placement, and operation of the traps shall be directed and approved by the Service. A report detailing cowbird management activities shall be provided to the Service within two months of the conclusion of trapping efforts during each and every calendar year. Upon request of the Federal Highway Administration or its agents, the Service shall attempt to locate a suitable public or non-profit foundation or organization that is willing to provide, under contract, the services necessary to meet this mitigation requirement. In any case, The Federal Highway Administration or its agents shall be responsible for obtaining permission from The Irvine Company to operate traps on their property.
11. The Federal Highway Administration or its agents shall perform a series of monitoring studies until performance criteria are met, to provide additional information on gnatcatcher habitat utilization. The purposes of these studies shall be as follows:
 - a. To determine the success of the revegetation efforts in providing nesting opportunities for the gnatcatcher with consideration of predation, nest parasitism and other factors, and in addition,
 - b. A banding study will be conducted to determine extent of juvenile gnatcatcher dispersal at Siphon Reservoir. The banding study will be initiated in March of 1995.

The Service shall approve the study methodologies and shall set performance standards for the above studies, prior to the initiation of the studies. In addition, the Service shall require that researchers involved in such studies obtain permits pursuant to Section 10(a)(1)(a) of the Endangered Species Act.

12. The Federal Highway Administration or its agents shall obtain wildlife conservation easements for all habitat mitigation areas, as identified in the FEIS and Biological Assessment, and movement corridors under the wildlife crossings related to the Corridor, as described in the Biological Assessment, and supplemental information provided to the Service (FHA 1994b and 1994c).

JUL- 6-94 WED 16:28

FISH AND WILDLIFE

FAX NO. 6194319618

P. 35

Peter C. Markle (1-6-94-F-17)

35

13. The Federal Highway Administration or its agents shall be responsible for immediately replacing or restoring all coastal sage scrub habitat outside of the approved construction footprint of the ETC, at a ratio of five acres replaced for each acre lost, that is destroyed or significantly modified as a result of the construction, implementation, or operation of the proposed project. The replacement or restoration of coastal sage scrub habitat shall be held to the same standards as the other revegetation efforts, and shall be considered acceptable if the total cover by native coastal sage scrub species is at least 70 percent and the vegetation is not being artificially sustained, or if the Federal Highway Administration or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago.
14. The Federal Highway Administration or its agents shall implement all mitigation measures that are implied or identified in the Technical Studies or EIS, as referenced in the EIS pertaining to water quality or erosion to prevent the dissemination or the concentration of pollutants in the project area or "Action Area."
15. Light and glare shall be mitigated according to measures identified in the EIS.
16. The Federal Highway Administration or its agents shall provide a minimum of seven, and if feasible, 14 days prior notice to the Service before commencing grading activities. Grubbing or other land clearing activities shall not occur unless and until construction of the Corridor is ready to begin in earnest. The Federal Highway Administration shall, to the extent possible, minimize the take of gnatcatchers by employing whatever means or measures that are necessary to prevent the harm and death of individual birds during grubbing, clearing, and other construction activities.

At a minimum, the following construction monitoring measures shall be implemented to minimize impacts to gnatcatchers, coastal cactus wrens, and coastal sage scrub habitat:

- a) Construction shall be monitored by a biologist to minimize construction impacts on natural resources outside the actual construction zone. The monitor will observe the contractor's work to ensure that work does not take place in high value natural areas outside the clearing limits as staked in the field.
- b) The contractor shall review the rough grading plans and staking to ensure that the grading is within the project footprint as described for the Biological Opinion.
- c) Construction monitoring activities shall include the prevention of harm, harassment, injury, or death of wildlife by means of the education of contractor and construction crews. In addition, the monitor shall work to prevent violation of existing laws, such as

Peter C. Markle (1-6-94-F-17)

36

the Migratory Bird Treaty, Clean Water Act, and Fish and Game Code. If any violations or potential violations of these and other laws are noted, the monitor will advise the TCA accordingly. If necessary, work will be stopped, and the monitor shall advise the Federal Highway Administration, TCA, Service, and the Department of Fish and Game and other appropriate resource agencies to resolve the situation.

- d) Monitoring of coastal sage scrub habitat within or immediately adjacent to active or future project construction areas shall occur throughout the construction period, in order for the monitor to be aware of gnatcatcher and coastal cactus wren locations.
 - e) Continuous monitoring of gnatcatchers and coastal cactus wrens in active territories shall be conducted during any construction operations that occur within 100 feet of occupied habitat. The purpose of this monitoring will be either to verify that the construction does not significantly adversely affect the gnatcatcher activity or to determine whether "take" occurs, whichever the case may be. If this monitoring indicates that unauthorized take of gnatcatchers and coastal cactus wrens may occur, construction will cease pending coordination with the Service.
17. The Federal Highway Administration or its agents shall obtain necessary local, State and Federal permits to take, harm, or destroy the gnatcatcher and coastal sage scrub habitats. The authorizations granted herein, including the incidental take authorization, are null and void absent such permits. In particular, the Federal Highway Administration shall comply with all pertinent provisions of the Migratory Bird Treaty Act (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended).
18. The Federal Highway Administration, as the Federal action agency, shall retain ultimate responsibility for the implementation of all preceding terms and conditions in the event of financial or institutional incapacity of TCA to perform them.

Technical Assistance

Coastal Cactus Wren

1. The above terms and conditions for gnatcatchers should also remove the adverse effects of project construction and operation on the coastal cactus wren.

Disposition of Sick, Injured, or Dead Individuals

The Service's Carlsbad Office must be notified within three working days should any listed species be found dead or injured in or adjacent to the project area. Notification must include the date, time, and location of the carcass, cause of death or injury, and any other pertinent information. If

Peter C. Markle (1-6-94-F-17)

37

necessary, the Service will provide a protocol for the handling of dead or injured, listed animals. In the event that the Federal Highway Administration or its agents suspect that a species has been taken in contravention of any federal, State, or local law, all relevant information shall be reported within 24 hours to the Service's Carlsbad Enhancement Office at (619) 431-9440 or to the Service Division of Law Enforcement, Torrance, California at (310) 297-0062.

Conservation Recommendations

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibility for these species.

1. The Federal Highway Administration and Service should analyze and consider the goals and progress of the proposed NCCP and other conservation planning efforts to insure consistency with Biological Opinions issued in conjunction with Federal projects or projects that are Federally-funded or permitted. This analysis should be extended to a consideration of the success of proposed avoidance and mitigation measures associated with this project and other projects throughout the range of the gnatcatcher and coastal cactus wren.
2. The Service, in consultation with other Federal agencies and working group or recovery team members, should assess the efficacy of various measures for mitigating project-related direct or indirect impacts to gnatcatchers, and their habitat. Thus far, it is apparent that successful creation or restoration of coastal sage scrub habitat has been achieved by relatively few revegetation specialists. Because the creation or restoration of coastal sage scrub habitat is often an essential component of effective mitigation for impacts to said habitat, revegetation methodologies and related data bases warrant close scrutiny and constant refinements.

Conclusion

This concludes the biological opinion on the Federal Highway Administration/Eastern Transportation Corridor proposed project. As found at 50 CFR 402.16, reinitiation of formal consultation is required if the action is significantly modified from that described above or if new information becomes available on listed species or impacts to listed species. Specifically, if the draft Central and Coastal Subregional NCCP reserve design changes substantially (as determined by the Service), especially in the area of the Lomas de Santiago ridge, or if analysis of the forthcoming data from the County of Orange refutes the determinations made by the Service at this time, reinitiation of formal consultation will be required. Additionally,

Peter C. Markle (1-6-94-F-17)

38

should any of those species for which the Service provided technical assistance in this opinion, including the coastal cactus wren, the many-stemmed dudleya or the chaparral beargrass, be proposed for listing by the Service, formal consultation should be initiated immediately.

If you have any questions on this biological opinion, please call me at (619) 431-9440 or Tara Wood of my staff, at (916) 978-4613.

Sincerely,

for Peter A. Shino
Gail C. Kobetich
Field Supervisor

Peter C. Markle (1-6-94-F-17)

39

LITERATURE CITED AND REFERENCES

American Ornithologists' Union. 1957. Checklist of North American Birds, 5th Edition. American Ornithologists' Union, Washington, D.C.

American Ornithologists' Union. 1983. Checklist of North American Birds, Sixth Edition. American Ornithologists' Union. Printed by Allen Press, Lawrence, Kansas. 877 pages.

American Ornithologists' Union. 1989. Thirty-seventh supplement to the American Ornithologists' Union checklist of North American birds. Auk 106 (3): 532-538

Anderson, E.R. 1991. Habitat Preferences of the California Gnatcatcher in San Diego County. Unpublished M.A. thesis, San Diego State University.

Atwood, J. 1980. The United States distribution of the California black-tailed gnatcatcher. Western Birds 11: 65-78

Atwood, J. 1988. Speciation and geographic variation in black-tailed gnatcatchers. Ornithological Monographs No. 42. American Ornithologists' Union, Washington, D.C.

Atwood, J. 1990. Status review of the California gnatcatcher (Polioptila californica). Manomet Bird Observatory, Manomet, Massachusetts.

Atwood, J. 1991. Subspecies limits and geographic patterns of morphological variation in California gnatcatchers (Polioptila californica). Bulletin Southern California Academy of Sciences 90 (3) 118-133.

Axelrod, D. 1978. The origin of coastal sage vegetation, Alta and Baja California. American Journal of Botany 65 (10): 1117-1131.

Barbour, M. and J. Major 1977. Terrestrial Vegetation of California. John Wiley and sons, New York.

Benson, L. 1969. The Native Cacti of California. Stanford University Press, Stanford, California.

Braden, G. U.S. Fish and Wildlife Service, Carlsbad, California. Personal communications pertaining to the incidence of cowbird parasitism at Riverside County study areas, California; 1992 and 1993.

Braden, G. U.S. Fish and Wildlife Service, Carlsbad, California. Personal communications regarding gnatcatcher fledgling dispersal. 1994.

Bontrager, D. 1994. First annual progress report, 1993 California gnatcatcher research activity in the superpark Area of Orange County, California. Unpublished report prepared for the U.S. Fish and Wildlife Service, OMA, Fairfax, Virginia. January, 1994.

Peter C. Markle (1-6-94-F-17)

40

Bontrager, D. Personal communications regarding roads as barriers to gnatcatcher movement. 1994.

Bowler, P. 1990. Coastal sage scrub restoration - I: The challenge of mitigation. Restoration and Management Notes 8(2): 78-82.

California Department of Fish and Game. 1993a. Southern California coastal sage scrub Natural Community Conservation Planning Process Guidelines. Amended November, 1993.

County of Orange. 1994a. County of Orange Coastal and Central NCCP/HCP Preliminary Habitat Reserve Design.

County of Orange. 1994b. Letter regarding consistency of the ETC with the County's NCCP Process. On file, USFWS Carlsbad Field Office.

Dawson, W. 1923. The Birds of California. Volume 1. South Moulton Company, San Diego.

Dunn, J., E. Blom, G. Watson, and J. O'Neill. 1987. Cactus wren account. Pp. 318-319 in Field Guide to the Birds of North America (S.L. Scott, ed.). National Geographic Society, Washington, D.C.

Environmental Science Associates. 1992. Eastern Transportation Corridor Deer Telemetry Study. Prepared for the Foothill/Eastern Transportation Corridor Agencies. February 1992.

Federal Highway Administration. 1993. Supplemental Draft Environmental Impact Statement. Prepared for the Foothill/Eastern Transportation Corridor Agencies. January 1993.

Federal Highway Administration. 1994a. Eastern Transportation Corridor Final Environmental Impact Statement. March 1994.

Federal Highway Administration. 1994b. Letter providing supplemental information developed for the mitigation package for the Eastern Transportation Corridor. June 2, 1994.

Federal Highway Administration. 1994c. Letter providing supplemental information developed for the mitigation package for the Eastern Transportation Corridor. July 1, 1994.

Fleisman, E. and D.D. Murphy. 1993. A review of the biology of coastal sage scrub. Draft outline in Southern California Coastal Sage Scrub Natural Communities Conservation Plan, Scientific Review Panel Conservation Guidelines and Documentation. Unpublished report. California Department of Fish and Game, Sacramento.

Freudenberger, D.O., B.E. Fish, and J.E. Keelye, 1987. Distribution and stability of grasslands in the Los Angeles Basin. Bulletin of the Southern California Academy of Sciences 86:13-26.

Peter C. Markle (1-6-94-F-17)

41

Garrett, K. 1992. Correspondence to the U.S. Fish and Wildlife Service Dated February 3, 1992. Natural History Museum of Los Angeles County, Los Angeles, California.

Garrat, K. and J. Dunn. 1981. The Birds of Southern California: Status and Distribution. Los Angeles Audubon Society; 407 pages.

Cary, J.T. 1983. Competition for light and a dynamic boundary between chaparral and coastal sage scrub. Madrono 30:43-49.

Grinnell, J. 1915. A distributional list of the birds of California. Pacific Coast Avifauna No. 11.

Grinnell, J. and A. Miller 1944. The distribution of the birds of California. Pacific Coast Avifauna 27.

Hays, L. 1989. The status and management of the Least Bell's Vireo within the Prado Basin, California, 1986-1989. Unpublished report, California State University, Long Beach Foundation, Long Beach, California; Dr. Charles T. Collins, Project Director.

Heffley, C. California Department of Fish and Game. Personal communications regarding use of Windy Ridge area for Deer Movement. 1994.

Hillyard, D. and M. Black. 1987. Coastal sage scrub revegetation at Crystal Cove State Park, Orange County, California: 1987 update. Proceedings of the Second Native Plant Revegetation Symposium. Society for Ecological Restoration and Management. Madison, Wisconsin.

Keeley, J.E. and S.C. Keeley. 1984. Postfire recovery of California coastal sage scrub. America Midland Naturalist 111:105-117.

Keeley, J.E., B.A. Morton, A. Pedrosa, and P. Trooter. 1985. Roll of allelopathy, heat, and charred wood in the germination of chaparral herbs and suffrutescents. Journal of Ecology 73:445-458.

Keeley, S.C. and J.E. Keeley. 1982. The role of allelopathy, heat, and charred wood in the germination of chaparral herbs. pp. 128-134 in C.E. Conrad and W.C. Oechel, technical coordinators. Proceedings of the symposium on dynamics and management of Mediterranean-type ecosystems. Pacific Southwest Forest and Range Experimental Station General Technical Report PSW-58, Berkeley, California.

Keeley, S.C., J.E. Keeley, S.M. Hutchinson, and A.W. Johnson, 1981. Postfire succession of the herbaceous flora in southern California chaparral. Ecology 62:1608-1621.

Kinsinger, Debra. 1993. U.S. Fish and Wildlife Service, Carlsbad, California. Personal communications regarding multi-agency revegetation and erosion-prevention efforts in the San Joaquin Hills and environs subsequent to the October, 1993, Laguna Beach fire.

Peter G. Markle (1-6-94-F-17)

42

- Kirkpatrick, J. and C. Hutchinson. 1977. The community composition of California coastal sage scrub. *Vegetation* 35: 21-33.
- Kirkpatrick, J. and C. Hutchinson. 1980. The environmental relationships of Californian coastal sage scrub and some of its component communities and species. *Journal of Biogeography* 7: 23-28.
- Klopatek, J., R. Oson, C. Emerson, and J. Jones. 1979. Land use conflicts with natural vegetation in the United States. *Environmental Conservation*: 6: 191-199.
- LSA. 1993. (LSA Associates, Inc.). A review of coastal sage scrub restoration projects in Orange and San Diego Counties. Report prepared for the Transportation Corridor Agencies; 7 pages.
- MacMillen, R., E. Wohler, and J. Norman. 1991. Status report on a population of the California gnatcatcher inhabiting the Open Space Reserve on the campus of the University of California, Irvine. department of Ecology and Evolutionary Biology, University of California, Irvine. 6 pages.
- Meade, R.J. Personal communication pertaining to County of Orange Central Subregional Reserve Design issues.
- Munz, P.A. 1974. A flora of southern California. University of California Press, Berkely.
- NCCP Scientific Review Committee. 1994. Personal communication, J. Atwood, J. Rothenberry, D. Murphy, regarding draft Central NCCP reserve design issues and impacts by the Eastern Transportation Corridor. July 1994.
- Noss, R.F. 1992. Edge effects, roads, and connectivity. Draft sections, in Scientific Review Panel Conservation Guidelines and Documentation, August 1993.
- Ogden Environmental and Energy Services Company, Inc. 1992. Population viability analysis for the California gnatcatcher within the MSCP study area. Unpublished draft report prepared for the Clean Water Program, City of San Diego.
- O'Leary, J. 1990. Californian coastal sage scrub: general characteristics and considerations for biological conservation. Pages 24-41 in "Endangered plant communities of southern California", A. Schoenherr (ed.). Southern California Botanists Special Publication Number 3.
- O'Leary, J., D. Murphy and P. Brussard. 1992. An NCCP special report: the coastal sage scrub community conservation planning region. Special Report No. 2.
- Padly, D. Personal Communications regarding deer movement in the Windy Ridge area, Orange County. June 1994.

Peter C. Markle (1-6-94-F-17)

43

- P&D Technologies. 1992. Environmental Impact Report/Environmental Impact Statement for the Eastern Transportation Corridor TGA EIR/EIS 2: Biological Resources Analysis Technical Report. Prepared for the Foothill/Eastern Transportation Corridor Agencies and Federal Highway Administration. May 1992.
- P&D Technologies. 1994. Federal Action on the Eastern Transportation Corridor Biological Assessment. Prepared for: Foothill/Eastern Transportation Corridor Agencies and Federal Highway Administration and the California Department of Transportation. February 1994.
- Rea, A.M. 1986. Geographic variation in Campylorhynchus brunneicapillus: NW, peninsular and insular races in Phillips, A.R. The Known Birds of North and Middle America, Part I. Denver, Colorado (privately published).
- Rea, A., and K. Weaver. 1990. The taxonomy, distribution, and status of coastal California cactus wrens. Western Birds 21: 81-126.
- Roberts, F. Personal communication regarding Brauntons' milkvetch, many-stemmed dudleya and chaparral beargrass. June 1993 - 1994.
- Salata, L.R. 1987. Status of the least Bell's vireo at Camp Pendleton, California in 1987. Unpublished report, Sweetwater Environmental Biologists, Spring Valley, California.
- Salata, L.R. 1992. A status review of the coastal cactus wren. Unpublished draft report. U.S. Fish and Wildlife Service, Carlsbad, California.
- Soule, M.E., D.T. Bolger, A.C. Alberts, J. Wright, M. Sourice, and S. Hill. 1988. Reconstructed dynamics of chaparral-requiring birds in urban habitat lands. Conservation Biology 2: 75-92.
- Terrill, S.B. 1988. Cactus wren. Pp. 344-345 in The Audubon Society Master Guide to Birding (J. Farrand, Jr., ed.). Alfred A. Knopf, New York.
- The Nature Conservancy. 1993. The status and management of the Least Bell's Vireo in the Prado Basin, California, 1986-1992. Unpublished report prepared for the Orange County Water District, Corps of Engineers, California Department of Fish and Game, and U.S. Fish and Wildlife Service.
- Troeger, A.R. 1982. Microcommunity patterns in coastal sage scrub. pp. in C.E. Conrad and W.C. Oechel, technical coordinators. Proceedings of the symposium on dynamics and management of Mediterranean-type ecosystems. Pacific Southwest Forest and Range Experimental Station General technical Report PSW-58, Berkeley, California.
- UNOCAL. 1993. Coyote Hills East. "Habitat Conservation Plan" in support of Section 10a permit application, Unocal Land and Development Company (UNOCAL), Brea, California. July 15, 1993; 93pp.; with appendices.

Peter C. Markle (1-6-94-F-17)

44

USFWS. 1993. Proposed endangered status for two plants and Proposed threatened status for four plants from southern California; Astra galus brauntonii; proposed rule. Federal Register 50 CFR Part 17, Volume 57.

USFWS. 1993b. Threatened coastal California gnatcatcher; final rule and proposed special rule, Federal Register 50 CFR Part 17, Volume 58, Number 59.

USFWS. 1994. Biological Opinion on the Effects of the San Joaquin Hills Transportation Corridor on the coastal California gnatcatcher and coastal cactus wren. On file, USFWS Carlsbad Field Office.

USFWS. 1994b. Final special rule concerning take of the threatened coastal California gnatcatcher. Federal Register 50 CFR Part 17, Volume 58, No. 236.

Westman, W. 1981a. Diversity relations and succession in California coastal sage scrub. Ecology 62: 170-184.

Westman, W. 1981b. Factors influencing the distribution of species of California Coastal Sage Scrub. Ecology 62: 439-455.

Westman, W.E. 1982. Coastal sage scrub succession. pp in C.E. Conrad and W.C. Oechel, technical coordinators, Proceedings of the symposium on dynamics and management of Mediterranean-type ecosystems. Pacific Southwest Forest and Range experimental Station General Technical Report PSW-58, Berkeley, California.

Westman, W.E. and J.F. O'Leary. 1986. Measures of resilience: the response of coastal sage scrub to fire. Vegetation 65:179-189.

Westman, W. 1987. Implications of ecological theory for rare plant conservation in coastal sage scrub. Pages 133-149 in "Proceedings Conference on Conservation and Management of Rare and Endangered Plants", T. Elias (ed.); California Native Plant Society, Sacramento.

Willett, G. 1912. Birds of the Pacific slope of southern California. Pacific Coast Avifauna No. 7.

Willett, G. 1933. A revised list of the birds of southwestern California. Pacific Coast Avifauna.

Zedler, P.H. 1981. Vegetation changes in chaparral and desert communities in San Diego County, California. pp. 405-430 in D.C. West, H.H. Shugart, and D. Botkin, editors: Forest Succession: Concepts and Applications. Springer-Verlag, New York.

**WEST LEG
BIOLOGICAL OPINION**

San Joaquin Hills
Corridor Agency

Foothill/Eastern
Corridor Agency

Chairman:
Peter Buffa
Costa Mesa

Chairman:
Mike Ward
Irvine



TRANSPORTATION CORRIDOR AGENCIES

William Woollett, Jr.
Chief Executive Officer

Walter D. Kreutzen
Chief Operating Officer

Colleen E. Clark
Chief Financial Officer

Jerry E. Bennett
Chief Engineer

January 21, 1999

Mr. Jim Bartell
Assistant Field Supervisor
2730 Loker Ave. West
Carlsbad, CA 92008

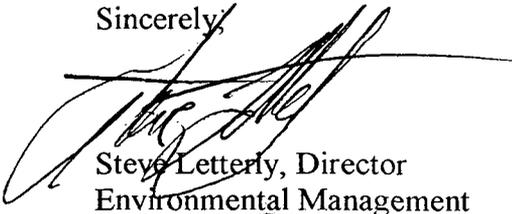
Subject: Eastern Transportation Corridor West Leg Biological Opinion (1-14-94-F-16)

Dear Mr. Bartell:

The Transportation Corridor Agencies (TCA) is pleased to have made our final payment to the Nature Reserve of Orange County (NROC) on January 4, 1999. This final payment of \$500,000 is in accordance with the payment schedule identified in the U.S. Fish and Wildlife Service Biological Opinion (1-14-94-F-16) for the Eastern Transportation Corridor West Leg and the Central Coastal NCCP Implementation Agreement. This final payment brings TCA's contribution to the NROC to \$6.6 million. We at the TCA remain committed to multi-species habitat planning as the best method of protecting Orange County's natural resources while providing for sustainable development. We look forward to seeing our funds being used to manage the 43,000acre reserve.

Should you have any questions or concerns regarding this information, please feel free to contact Laura Coley Eisenberg, Principal of Resource Management at (714) 513-3482.

Sincerely,



Steve Letterly, Director
Environmental Management

Attachment

cc: Terry Dickerson, CDFG (5-139-93)
Fari Tabatabai, ACOE (94-245-BH)
Ron Thronton, NGKE
Laura Coley Eisenberg

201 E. SANDPOINTE AVE., SUITE 200, P.O. BOX 28870, SANTA ANA, CA 92799-8870 714/436-9800 FAX 714/436-9848
<http://www.tcagencies.com>

Members: Anaheim • Costa Mesa • County of Orange • Dana Point • Irvine • Lake Forest • Laguna Hills • Laguna Niguel •
Mission Viejo • Orange • Newport Beach • Santa Ana • San Clemente • San Juan Capistrano • Tustin • Yorba Linda

\$1,262,750,597.70
FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY
TOLL ROAD REVENUE BONDS SERIES 1995A (FIXED RATE)
AND
\$245,600,000
FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY
TOLL ROAD REVENUE BONDS

\$93,400,000 Series 1995B	(Variable Rate)	(MGT)
\$61,400,000 Series 1995C	(Variable Rate)	(CS)
\$61,400,000 Series 1995D	(Variable Rate)	(IBJ)
\$29,400,000 Series 1995E	(Variable Rate)	(BNP)

DISBURSEMENT REQUEST NO. 565

Bank of New York, Western Trust Company, a successor trustee (the "Trustee") under the Master Indenture of Trust and the First Supplemental Indenture of Trustee each dated as of May 15, 1995 and the Second Supplemental Indenture of Trust dated as of May 15, 1995 as amended by the First Amendment to the Second Supplemental Indenture, dated as of June 21, 1995 (collectively, the "Indenture"), each by and between the Trustee and the Foothill/Eastern Transportation Corridor Agency (the "Agency"), hereby is requested and instructed to pay to the parties set forth in Appendix I hereto, from the respective accounts in the Construction Fund established pursuant to the Indenture, the respective amounts specified.

The undersigned is an Authorized Agency Representative as defined in the Indenture and certifies that said amounts are now due and owing, are properly payable as a Cost of the Pledged Facilities, any Special Project, or any proposed addition to, or betterment, improvement, or enlargement of the Pledged Facilities or any portion of any of the foregoing (as defined in the Indenture) from the account specified and have not been previously the subjects of any Disbursement Request.

Dated: 12/14/98

FOOTHILL/EASTERN TRANSPORTATION
CORRIDOR AGENCY

by: Margaret Nelson
Authorized Agency Representative

by: Eileen J. Harris
Authorized Agency Representative

Disbursement Request #: 565
FETCA

APPENDIX I

NAME OF PAYEE	AMOUNT OF PAYMENT	NAME OF ACCOUNT	ADDRESS/Writing INSTRUCTIONS	TYPE OF PAYMENT	DESCRIPTION
Nature Reserve of Orange County for the USFW Service	\$500,000.00	FLE Variable Rate Construction General Acct # 419688	Nature Reserve of Orange County Bank of America South County RCBO ABA 121000 58 Acct 0694417405	Wire	Biological Opinion West Leg 1-14-94-F-16

Please transfer funds on 1/4/99

HISTORY OF TRANSACTIONS LIST AS OF 01/07/99
 ACCT 419688 F/E 95 VAR RATE CONST-GENERAL

POSTINGS OF 01/01/99 - 01/08/99
 REPORT TYPE: A

POST-DTE	TYPE	RG	UNITS	INC CASH	PRIN, CASH
01/04/99	SALE	51	593.20	.00	.00
BNY HAMILTON TRSY MONEY FD PREMIER # 74					
CUS # S99990560 SEC # 9999056					
ITC: 000 PTC: 800 CP: 0 B/C: ZERO DC: 18					
TRN#:990040010 TD/DOR:01/04/99 CSD:01/04/99					
01/04/99	SALE	01	318,430.34	.00	318,430.34
BNY HAMILTON TRSY MONEY FD PREMIER # 741					
CUS # S99990560 SEC # 9999056					
ITC: 000 PTC: 800 CP: 0 B/C: ZERO DC: 18					
TRN#:990040011 TD/DOR:01/04/99 CSD:01/04/99					
01/04/99		00	.00	.00DR	500,000.00DR
BANK OF AMERICA - SOUTH COUNTY RCBO					
ACCT # 0694417405					
A/C NAME NATURE RESERVE OF ORANGE CNTY					
ITC: 000 PTC: 720 CP: B/C: ZERO DC: 00					
TRN#:990040012					
01/04/99		00	.00	.00	7,061.12
EARNINGS TRNSFR FR 419703 TO 419688 /					
PER SEC 7.7 2ND SUPP INDENT					
ITC: 000 PTC: 730 CP: B/C: ZERO DC: 00					
TRN#:990040013					
01/04/99		00	.00	.00	43,327.01
EARNINGS TRNSFR FR 419679 TO 419688 /					
PER SEC 7.7 2ND SUPP INDENT					
ITC: 000 PTC: 730 CP: B/C: ZERO DC: 00					
TRN#:990040014					
01/04/99		00	.00	.00	128,346.25
EARNINGS TRNSFR FR 419706 TO 419688 /					
PER SEC 7.7 2ND SUPP INDENT					
ITC: 000 PTC: 730 CP: B/C: ZERO DC: 00					
TRN#:990040015					
01/04/99		00	.00	.00	2,242.08
TRANSFER FR 419679 TO 419688					
ITC: 000 PTC: 730 CP: B/C: ZERO DC: 00					
TRN#:990040016					
01/05/99	PURCH	01	497,757.92	.00DR	497,757.92DR
BNY HAMILTON TRSY MONEY FD PREMIER # 741					
CUS # S99990560 SEC # 9999056					
ITC: 000 PTC: 960 CP: 0 B/C: ZERO DC: 18					
TRN#:990050010 TD/DOR:01/05/99 CSD:01/05/99					
01/05/99	DIV	01	.00	671.02	.00
BNY HAMILTON TRSY MONEY FD PREMIER # 741					
CUS # S99990560 SEC # 9999056					
ITC: 050 PTC: 000 CP: B/C: ZERO DC: 18					
TRN#:990050011					



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, California 92008

July 13, 1994

Colonel Michael R. Robinson, District Engineer
Los Angeles District, Corps of Engineers
P.O. Box 2711
Los Angeles, California 90053-2325

Attn: Mr. Bruce Henderson

Re: Biological Opinion on the Effects of the Eastern Transportation
Corridor (ETC), West Leg, on the Coastal California Gnatcatcher;
Orange County, California (1-14-94-F-16)

Dear Colonel Robinson:

This Biological Opinion responds to your January 14, 1994 request to the Fish and Wildlife Service (Service) for formal consultation, pursuant to Section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). In March, the Service determined that additional information was needed regarding the impact of the ETC project on Orange County's Natural Community Conservation Plan (NCCP) Program before the Service would be able to proceed with completion of the biological opinion. This information was received by the Service on June 7, 1994.

The Service listed the coastal California gnatcatcher (Poliioptila californica californica), hereinafter referred to as "the gnatcatcher" as a threatened species, on March 25, 1993. On May 2, 1994, the listing was invalidated by the United States District Court of Columbia on the basis that the Secretary of the Interior failed to obtain and make available for public review and comment the data underlying a published scientific report on the specific taxonomy of the gnatcatcher. On June 16, 1994, Judge Sporkin granted a stay of his earlier decision to vacate the listing of the gnatcatcher, allowing the gnatcatcher to retain its threatened status while the Service made the data in question available to the public for review and comment. On June 2, 1994, the Service published a 60 day Notice of Availability (Notice) of the data in the Federal Register. In compliance with the Judge's order, the Secretary of the Interior must make a determination whether the listing should be revised or revoked in light of his review of the data and public comments received no later than 100 days following the published date of the Notice. This 100 day period concludes on September 10, 1994.

The referenced project may adversely affect the gnatcatcher, and its coastal sage scrub habitats in the project area and environs. The project may also adversely affect an avian species being considered for imminent listing by the Service, the coastal cactus wren (Campylorhynchus brunneicapillus couesi), which is also associated with coastal sage scrub; we have included technical assistance recommendations concerning the effects of the project on this species in the opinion. At issue herein, are impacts to the gnatcatcher that may result from direct, indirect, and interrelated or interdependent actions in association with the project that are enabled or regulated by the U.S. Army Corps of Engineers and implemented by one or more of its agents (e.g., California Department of

Colonel Michael R. Robinson

2

Transportation, [Caltrans], Transportation Corridor Agencies [TCA], private construction firms, private parties).

This Biological Opinion was prepared using the following information: 1) Eastern Transportation Corridor, Final Environmental Impact Report/Environmental Impact Statement; Foothill/Eastern Transportation Corridor Agency; May, 1992; 2) Biological Resources Analysis Technical Report, P&D Technologies; May 1992; 3) Supplemental Draft Environmental Impact Study; Foothill/Eastern Transportation Corridor Agency; January 1993; 4) Biological Assessment of the Eastern Transportation Corridor for the West Leg; Foothill/Eastern Transportation Corridor Agency; February 1994; 5) Natural Communities Conservation Planning (NCCP) Process Guidelines, including Attachment A: Conservation Guidelines and all attached and referenced documents, prepared by California Department of Fish and Game and California Resources Agency, November 1993 (hereinafter referred to as "Conservation Guidelines"); 6) County of Orange Coastal and Central NCCP/HCP Preliminary Reserve Design and Supporting Documentation; County of Orange; April 22, 1994; 7) biological opinion on the effects of the Eastern Transportation Corridor on the Coastal California gnatcatcher and Brauntons' milkvetch, (on file); 8) various communications, including additional data and information developed between March through June 1994 by the Corps of Engineers and/or their agents (on file); and 9) Other biological references (see below, "Literature Cited and References").

Biological Opinion

It is the opinion of the Service that the proposed project, including the mitigation and avoidance measures as required by the Final EIS/EIR, and Biological Assessment, and as modified by additional mitigation measures proposed by the U.S. Army Corps of Engineers and their agent, the Transportation Corridor Agencies (USACOE 1994), is not likely to jeopardize the continued existence of the coastal California gnatcatcher. Critical habitat for this species has not been proposed and, therefore, no critical habitat would be modified.

This Biological Opinion is based upon the best available information, including the draft Subregional Reserve Design for the Central and Coastal NCCP Subregions of the County of Orange, presented to the Service on April 22, 1994. If these conditions change substantially, reinitiation of formal consultation may be required, pursuant to 50 CFR 402.16.

Description of the Proposed Action

The Transportation Corridor Agencies (TCA) and Caltrans propose to authorize and have built a multiple lane tollway that would extend from State Route 91 to Interstate 5 in northeastern Orange County. The ETC facility would consist of three legs, the North, East and West Legs. The West Leg, which is the subject of this biological opinion, is a locally funded project with no connections to the Interstate 5 Freeway. The North and East Legs connect with Interstate freeways and are the subject of a separate formal consultation conducted with the Service by the Federal Highway Administration.

The West Leg would extend from its interchange with the North and East Legs at the East Orange Interchange south to its terminus south of I-5. The West Leg would traverse parts of Peters Canyon and the Tustin Plain and would have no interchange with I-5. The West Leg would include a total of four general purpose lanes and two high occupancy vehicle (HOV) lanes which may be either concurrent (one in each direction) or reversible. The West

Colonel Michael R. Robinson

3

Leg would be approximately 5.3 miles in length and have a grading width that varies from approximately 500 to 2,200 feet.

As part of the proposed project, the U.S. Army Corps of Engineers or its agents (specifically TGA) have agreed to implement the following mitigation measures (discussed in more detail in the EIS and Final Biological Assessment):

- SOW {
1. Preserve an estimated 20 acres of coastal sage scrub at Siphon Ridge;
 2. Contribute \$500,000 to a conservation fund. The conservation fund is to be used to support the Natural Communities Conservation Planning Efforts, including but not limited to management, restoration and enhancement of lands preserved through the Central and Coastal Subregional NCCP Planning effort. The West Leg installment will be paid after the three installments for the North and East Leg, (totaling \$1,515,000), have been paid;
 - NEAC { 3. Ensure the operation of five cowbird traps near Peters Canyon Regional Park/Loma Ridge along the West Leg in perpetuity. Funds will be provided sufficient to conduct trapping annually or to establish an endowment sufficient to provide trapping in perpetuity;
 4. Restore coastal sage scrub habitat adjacent to the corridor on appropriate graded slopes that are adjacent to permanent open space (Loma Ridge Open Space Unit, Peters Canyon Regional Park), outside proposed developed areas;
 5. Provide 1 bridge structure and 4 culverts at least 54" in diameter along the West Leg, at the dimensions and locations specified in USACOE 1994, to enhance wildlife crossing;
 - SOW { 6. Revegetate the area disturbed by construction of the bridge/wildlife crossing at Station 2701 with habitat indigenous to the area. The revegetation plan will be approved by the Service prior to the construction of the crossings. The revegetation effort will be considered acceptable if:
 - a. the habitat is occupied by breeding pairs of gnatcatchers, or;
 - b. the Service and the U.S. Army Corps of Engineers or its agents unanimously agree that the habitat has the structure and composition of naturally-occurring gnatcatcher habitat or fully functional coastal sage scrub, or;
 - c. the U.S. Army Corps of Engineers or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago.
 7. Obtain wildlife conservation easements for all habitat mitigation areas and movement corridors under the wildlife crossings related to the ETC;
 8. Replace or restore all coastal sage scrub habitat outside of the approved construction footprint, at a ratio of five acres replaced for each acre lost, that is destroyed or significantly modified as a result of the construction, implementation, or operation of the proposed project;

Colonel Michael R. Robinson

4

9. Implement all mitigation measures that are implied or identified in the Technical Studies or EIS, as referenced in the EIS pertaining to water quality or erosion to prevent the dissemination or the concentration of pollutants in the project area or environs;
10. Mitigate light and glare impacts as identified in the EIS;
11. Provide a minimum of seven, and if feasible, 14 days prior notice to the Service before commencing grading activities. Grubbing or other land clearing activities will not occur unless and until construction of the Corridor is ready to begin in earnest. The following construction monitoring measures will be implemented to minimize impacts to gnatcatchers and coastal sage scrub habitat:
 - a) Construction will be monitored by a biologist to minimize construction impacts on natural resources outside the actual construction zone. The monitor will observe the contractor's work to ensure that work does not take place in high value natural areas outside the clearing limits as staked in the field;
 - b) The contractor will review the rough grading plans and staking to ensure that the grading is within the project footprint as described for the Biological Opinion;
 - c) Construction monitoring activities will include the prevention of harm, harassment, injury, or death of wildlife by means of the education of contractor and construction crews. In addition, the monitor shall work to prevent violation of existing laws, such as the Migratory Bird Treaty, Clean Water Act, and Fish and Game Code. If any violations or potential violations of these and other laws are noted, the monitor will advise the TCA accordingly. If necessary, work will be stopped, and the monitor shall advise the U.S. Army Corps of Engineers, TCA, Service, and the Department of Fish and Game and other appropriate resource agencies to resolve the situation;
 - d) Monitoring of coastal sage scrub habitat within or immediately adjacent to active or future project construction areas will occur throughout the construction period, in order for the monitor to be aware of gnatcatcher and coastal cactus wren locations;
 - e) Continuous monitoring of gnatcatchers and coastal cactus wrens in active territories will be conducted during any construction operations that occur within 100 feet of occupied habitat. The purpose of this monitoring will be either to verify that the construction does not significantly adversely affect the gnatcatcher activity or to determine whether "take" occurs, whichever the case may be. If this monitoring indicates that unauthorized take of gnatcatchers and coastal cactus wrens may occur, construction will cease pending coordination with the Service.

Colonel Michael R. Robinson

5

Effects of Proposed Action on Listed Species

Species Accounts

Coastal California Gnatcatcher

Primarily because of substantial, recent reductions in the habitat and range of the species and the inadequacy of existing regulations, the Service listed the gnatcatcher as threatened on March 30, 1993 (58 FR 16742). In recognition of the State's Natural Community Conservation Planning Program (NCCP Program), being implemented under the authority of the State of California's Natural Community Conservation Planning Act of 1991 (NCCP Act), and several local government on-going multi-species conservation planning efforts that intend to apply Federal Endangered Species Act standards to activities affecting the gnatcatcher, on December 10, 1993, the Service issued a special rule, pursuant to section 4(d) of the Act, defining the conditions under which take of the gnatcatcher would not be a violation of section 9 (58 FR 65088). Under the special rule, incidental take of the gnatcatcher by land-use activities addressed in an approved Natural Community Conservation Plan (NCCP) would not be considered a violation of section 9 of the Act, provided that the Service determined that the NCCP meets the issuance criteria for an "incidental take" permit, pursuant to section 10(a)(2)(B) of the Act and 50 CFR 17.32 (b)(2). A limited amount of incidental take of the gnatcatchers within subregions actively engaged in preparing a NCCP would also not be considered a violation of section 9 of the Act, provided that such take results from activities conducted consistent with the State's NCCP Conservation and Process Guidelines. The Conservation Guidelines limit this "interim take" to no more than 5% of existing coastal sage scrub habitat.

The coastal California gnatcatcher is a recognized subspecies of the California gnatcatcher (*Polioptila californica* [Brewster]) and is endemic to coastal southern California and northwestern Baja California, Mexico (American Ornithologists' Union 1983, 1989; Atwood 1980, 1988, 1990, 1991).

The gnatcatcher, a small, gray songbird, is an obligate resident of coastal sage scrub dominated plant communities from Los Angeles County generally south along the coast to El Rosario at about 30 degrees north latitude (American Ornithologists' Union 1957, Atwood 1990, Phillips 1991, Banks and Gardner 1992). The appropriate habitat or habitat type, occurs in a patchy or mosaic distribution. The distribution and size of these patches of suitable habitat varies throughout the range of the species from year to year due to the expressed effects of a variety of variables.

Typical coastal sage scrub habitat constituents are relatively low-growing, drought-deciduous, and succulent plant species. Representative plant taxa in this plant community include coastal sagebrush (*Artemisia californica*), several species of sage (*Salvia* spp.), California buckwheat (*Eriogonum fasciculatum*), California encelia (*Encelia californica*), various species of cactus and cholla (*Opuntia* spp.), and several species of *Happlopappus* (Munz 1974; Kirkpatrick and Hutchinson 1980). Of the 11 subassociations of coastal sage scrub identified by Kirkpatrick and Hutchinson (1977), the gnatcatcher apparently routinely occupies only three of these.

The gnatcatcher is primarily insectivorous and defends territories ranging in size from approximately 2 to 40 acres (Atwood 1990; John Konecny, personal communication). Atwood's comprehensive studies (1988, 1991) and status review (1990) further reveal that the breeding season of the species extends from February through July, and apparently peaks in April.

Colonel Michael R. Robinson

6

Juveniles associate with their parents for several weeks or even months after fledgling.

Although considered locally common fewer than 50 years ago (Grinnell and Miller 1944), Atwood (1990, 1992b) estimated that the approximately 1,811 to 2,291 pairs of gnatcatchers remain in the United States population. In the listing package, the Service estimated that there could be as many as 2,562 pairs gnatcatchers in Southern California (58 FR 16742). Although the documented decline of the gnatcatcher undoubtedly is the result of numerous factors, including nest depredation and brood parasitism by the essentially non-native brown-headed cowbird (*Molothrus ater*), habitat destruction, fragmentation or modification are the principal reasons for the gnatcatcher's current, precarious status (58 FR 16742). It has been estimated that as much as 90 percent of coastal sage scrub vegetation has been lost as a result of development and land conversion (Westman 1981a, 1981b; Barbour and Major 1977), leaving coastal sage scrub as one of the most depleted habitat types in the United States (Kirkpatrick and Hutchinson 1977; Axelrod 1978; Klopatek et al. 1979; Westman 1987; O'Leary 1990).

For references that contain thorough accounts of the gnatcatcher and its coastal sage scrub habitat, please see the section entitled "References and Literature Cited" at the conclusion of this document.

Species Accounts

Coastal Cactus Wren

The cactus wren (*Campylorhynchus brunneicapillus*) is a large (length 18-22 cm) member of the wren family (Troglodytidae). Its body plumage is brown above and whitish below. The crown is often a rust-colored brown bordered by a conspicuous whitish eyebrow. The underparts are heavily spotted with black especially on the upper breast. The back is streaked, and the wings and tail are conspicuously barred in black and white (Dunn 1987, Terrill 1988, Rea and Weaver 1990).

One recognized subspecies of cactus wren (*C. b. couesi*) occurs in the United States. Although Rea (1986) proposed a new subspecies of cactus wren, *C. b. sandiegensis* (San Diego cactus wren), the American Ornithologists' Union Committee on Classification and Nomenclature has not accepted this proposed change in taxonomy (Dr. Burt Monroe, American Ornithologists' Union, pers. comm.).

On September 21, 1990, the Service received two petitions to list the San Diego cactus wren, *C. b. sandiegensis* (Rea 1986), as an endangered species pursuant to Section 4 of the Act. Given the biological information contained therein pertaining to *sandiegensis* and the remainder of the coastal population of the cactus wren, the Service affirmed that the petitioned action may be warranted on January 24, 1991, pursuant to Section 4(b)(3)(A) of the Act. This finding was subsequently published in the Federal Register on March 22, 1991 (56 FR 12146).

Accordingly, it is the coastal population of *C. b. couesi* that is referred to herein as the coastal cactus wren. A discussion of the nomenclatural history of the coastal California population of the cactus wren is presented by Rea and Weaver (1990).

The coastal cactus wren occurs from southern Ventura County southeast to the Baldwin Hills and the Palos Verdes Peninsula in Los Angeles County, east along the southern flank of the San Gabriel and San Bernardino

Colonel Michael R. Robinson

7

Mountains from the northern San Fernando Valley in Los Angeles County to Mentone in San Bernardino County, and south along the coastal slopes and interior valleys west of the Peninsular ranges in western Riverside, Orange, and San Diego Counties to extreme northwestern Baja California, Mexico, in the vicinity of Tijuana and Valle de las Palmas. Maps depicting the distribution of the coastal population of the cactus wren are presented in Garrett and Dunn (1981) and Rea and Weaver (1990).

The geographic isolation of coastal and interior cactus wren populations has been enhanced by the urbanization of southern California and may be facilitating their genetic differentiation (e.g., see Rea and Weaver 1990). The hiatus of suitable habitat formed by the Transverse and Peninsular ranges also serves to maintain and define the disjunct distribution of coastal and interior populations of the cactus wren. In addition, Garrett (1992) concluded that "...the habitat occupied by coastal Los Angeles and Ventura County cactus wrens (never considered to be part of the sandiegensis subspecies) is strikingly different than that occupied by the nearest desert populations in the western Antelope Valley..." and that "...all of the coastal slope populations are now functionally isolated from the desert ones...".

The coastal cactus wren is an obligate, nonmigratory resident of the coastal sage scrub plant community. As its common name suggests, this species is found in association with various species of cacti which provide sites for nesting, roosting, and foraging. The coastal cactus wren occurs almost exclusively in thickets of tall prickly pear (Opuntia littoralis and O. oricola) and coastal cholla (O. proliferata) at elevations up to 450 m above sea level (Rea and Weaver 1990). Rea and Weaver (1990) reported that "The wrens are absent from areas where only low, sprawling cacti grow."

From the early 1880's to the early 1930's, the coastal cactus wren was considered a locally common resident of cactus-dominated habitat from San Diego northwest to Santa Paula in Ventura County (Grinnell 1915; Willett 1912, 1933). However, even during this period, a decline in its status was noted. Dawson (1923) reported that "All proper desert areas west of San Geronio Pass are being threatened sharply by the human invasion ... The cactus wren has receded from many parts of the San Diego-Ventura section already, and is in danger of being altogether cut off."

Willett (1933) noted that this species had declined significantly in Ventura County (including its apparent extirpation from Simi Valley) as a result of land clearing activities for agricultural purposes. Grinnell and Miller (1944) characterized the range of the cactus wren on the coastal slope of southern California as "now much restricted as compared with conditions in the 1880's and 1890's, owing to great reduction of requisite habitat..."

The coastal cactus wren has been extirpated from at least 57 sites known to be occupied between 1976 and 1990 (Salata 1992). Many of the sites currently occupied by the coastal cactus wren contain very few pairs and are threatened by urban development, fire, agriculture, and a variety of other factors (Salata 1992). Rea and Weaver (1990) reported that only 10 of 52 sites currently occupied by the coastal cactus wren in San Diego County support five or more pairs. Overall, it is estimated that fewer than 2,400 pairs of coastal cactus wrens remain throughout its entire range (Salata 1992).

Considering the small overall population size of the coastal cactus wren, the precarious status of the coastal sage scrub plant community upon which it depends (O'Leary 1990), and the high degree of wren habitat

Colonel Michael R. Robinson

8

fragmentation (Rea and Weaver 1990), further losses of habitat can be expected to have a significant adverse effect on the viability of extant subpopulations. Indeed, the status of the coastal cactus wren is symptomatic of the status of the coastal sage scrub plant community upon which it depends for its continued existence. As was indicated above, this plant community is one of the most depleted habitat types in the United States (Kirkpatrick and Hutchinson 1977; Axelrod 1978; Klopatek et al. 1979; Westman 1981a,b, 1987; O'Leary 1990).

Analysis of Impacts

Pursuant to the regulations at 50 CFR 402, the following constitutes an analysis of impacts to the gnatcatcher and coastal cactus wren, in and around the project Action Area, which includes all of the land that would be directly impacted by project construction, and indirectly affected by project construction and operation (e.g. noise effects), or affected because of potential induced growth.

As described above, there may be as many as 2,562 gnatcatchers remaining in the U.S. Of this total, about 757 pairs of gnatcatchers were estimated to occur in Orange County (58 FR 16743), prior to the wildfires that burned a significant amount of Orange County, primarily the coastal areas, in October 1993. Over 7,700 acres of coastal sage scrub burned as a result of the 1993 wildfires in Orange County. An estimated 144 pairs of gnatcatchers were assumed lost (USFWS 1993). The most significant fire damage to the Orange County coastal sage scrub ecosystem occurred in the coastal areas, especially in the San Joaquin Hills area. Impacts to the gnatcatcher and coastal cactus wren resulting from this fire were analyzed in the Biological Opinion for the San Joaquin Hills Transportation Corridor (USFWS 1994). While the Orange County wildfires resulted in significant impacts to the coastal populations of gnatcatchers and cactus wrens, it is expected that these populations will eventually increase as the habitat recovers from the fire (USFWS 1994).

The existing information on the abundance and distribution of the gnatcatcher in Orange County was supplemented by field surveys conducted as part of the NCCP planning effort. Intensive field surveys for the NCCP target species (gnatcatcher, coastal cactus wren and orange-throated whiptail lizard) were conducted in various locations within the coastal sage scrub habitat in the Santa Ana Mountains/Lomas de Santiago Ridge that comprises the reserva planning area for the Central subarea. Field surveys were conducted in 1991 through 1992 and again in the spring of 1994. Field survey locations included lands owned by the Irvine Company (which includes a substantial portion of the Central Subarea) and County regional parks. In 1994, additional survey locations were selected, the basis of selection being those areas determined to have the greatest potential presence of gnatcatchers and cactus wrens. The purpose of these surveys were merely to note the presence or absence of NCCP target species, including the gnatcatcher. No attempt was made to determine the status of individuals sighted; NCCP survey results are reported as sightings. During the 1991-1992 field surveys in the Central subarea, approximately 163 gnatcatchers and 476 cactus wren were sighted. In the 1994 spring surveys, 174 gnatcatchers and 190 coastal cactus wren were sighted (R.J. Meade, Pers. Comm).

As stated above, the gnatcatcher is an obligate species of the coastal sage scrub habitat. Gnatcatchers are found more consistently and in higher densities in subassociations of coastal sage scrub generally found near the coast and lower in elevation (NCCP Scientific Review Committee: J. Atwood, J. Rotenberry and D. Murphy, Pers. Comm.). This is particularly noticeable

Colonel Michael R. Robinson

9

in Orange County, where there is a relatively quick transition between the flatter, coastal areas, and the steeper, more mountainous portions of the county in the Santa Ana Mountains. Coastal sage scrub habitat on the northern portion of El Toro Marine Corps Air Base, in the foothills and adjacent lowland areas of the Loma Ridge, the Peters Canyon Regional Park and adjacent habitat, and the Tustin Ranch area provide an example of this observation. These low elevation, generally flatter contain patches of coastal sage scrub which support significant populations of the gnatcatcher and coastal cactus wren (P&D Technologies 1994, R.J. Meade Pers. Com.), which are likely source populations for the steeper, more mountainous areas to the north and east.

Direct and Indirect Effects

As described in the Biological Assessment, the project will result in the permanent, direct loss of 44 acres of coastal sage scrub habitat. In addition it is estimated that indirect effects of construction and operation may extend up to 1,000 feet from the centerline of the ETC. It is estimated that the construction will directly affect approximately one California gnatcatcher. There are no expected indirect effects to gnatcatchers (P&D Technologies 1994).

Technical Assistance

Coastal Cactus Wren

As described in the Biological Assessment, the project will directly affect one coastal cactus wren. There are no expected indirect effects to coastal cactus wrens (P&D Technologies).

Habitat Fragmentation

While the direct and indirect impacts associated with the West Leg ETC do not pose a significant threat to gnatcatcher populations in the Central Subarea, a serious threat to gnatcatcher populations in the Project Area and environs is habitat fragmentation by the ETC, an effect which tends to disrupt various ecosystem processes.

As discussed previously, habitat destruction and fragmentation are the most significant threats to gnatcatchers (and coastal cactus wrens). As noted by Noss (1992) and Soule et al. (1992), "In the coastal sage of Southern California, a classic sequence of habitat destruction and fragmentation has occurred, involving a reduction in total habitat area and apportionment of the remaining area into small isolated pieces. These pieces, mostly canyons, then continue to lose native vegetation as human activities fragment them internally and nibble at their edges." The NCCP Conservation Guidelines notes that "...threats to coastal sage scrub habitat are more than losses of total habitat area alone. Threats also include losses of distinct subtypes of sage scrub and losses of the special conditions needed to maintain the broad suite of coastal sage scrub-resident species" (CDFG 1993). Habitat fragments have little long-term value for conservation, as smaller habitat areas contain fewer species. Also, smaller habitat patches with proportionally larger perimeters are more vulnerable to deleterious edge effects, although such effects have not yet been documented in coastal sage scrub (Atwood 1990). Fragmentation of coastal sage scrub habitat would affect gnatcatchers and other obligate species by isolating populations and preventing dispersal.

In the County of Orange, relatively large, contiguous patches of coastal sage scrub still exist. This is due to a combination of a unique and

Colonel Michael R. Robinson

10

proactive approach to land-use planning, which requires dedication of open space in return for development rights, and geography. In the Central subarea, open space dedication has been concentrated in the higher elevation areas adjacent to the Cleveland National Forest, such as the Limestone Regional Park, and large canyon areas, such as Weir Canyon Wilderness Area. These dedicated open space lands contain a significant amount of coastal sage scrub. Development has tended to be more focused in the flatter, lower elevation areas, such as the coast and the inland valley area. The more steep foothill and mountain areas have been traditionally less attractive for development.

The alignment of the West Leg, from its terminus south of Interstate 5 to its interchange and merging with the North Leg ETC, primarily affects existing agricultural land, except as the West Leg approaches the North/East Leg interchange, in the general vicinity east of Peters Canyon Regional Park. Jamboree Road occurs adjacent to and just west of the West Leg ETC and runs parallel to it along its entire length. Jamboree Road presents somewhat of an existing barrier between coastal sage scrub patches in the Peters Canyon/Tustin Ranch area and the Loma Ridge. In addition, the coastal sage scrub habitat matrix in the Peters Canyon and Tustin Ranch areas are almost completely surrounded by disturbed or developed lands in the urban plains of Tustin and Irvine, except along the very western edge of the Loma Ridge, where there is an existing corridor of habitat from Peters Canyon Regional Park to Loma Ridge. The West Leg would bisect this existing corridor of habitat, and would effectively broaden the existing barrier posed by Jamboree Road and existing and future development. As described above, these lower elevation, flatter areas contain significant populations of gnatcatchers (and cactus wren). The West Leg ETC would further isolate the existing coastal sage scrub patches currently found in the Peters Canyon Reservoir Regional Park extending south to the Tustin Ranch area, away from the generally contiguous coastal sage scrub patches along the Loma Ridge and adjacent lowland areas.

Fragmentation of coastal sage scrub would impact gnatcatchers, and other obligate species, by isolating populations and preventing dispersal. The Peters Canyon population of gnatcatchers is connected via an existing corridor with the Loma Ridge populations to the east, and with the Santiago Hills, Irvine and Santiago Oaks Regional Parks populations via an existing corridor to the north. Fragmentation of habitat by the West Leg ETC is expected to inhibit, to some degree, juvenile dispersal of gnatcatchers and thus affect immigration between these subpopulations.

Little is known about juvenile gnatcatcher dispersal, or to what extent large roadways act as barriers to the gnatcatchers. Recent information suggests that 96% of juvenile gnatcatchers disperse within 1.5 miles of their natal territory; 80% disperse within 1.25 miles of their natal territory (G. Braden, USFWS, Pers. Comm). The maximum dispersal distance has been estimated from between 6.3 miles and 13 miles (P.J. Mock, as reported by Noss 1992). Gnatcatchers have been observed flying high over roadways; it may be that they fly high to get a view of where they want to go, and if they see coastal sage scrub, they may move there (Bontrager, Pers. Comm). Since gnatcatchers probably prefer to utilize natural habitats to disperse (Noss 1992), the ETC may act as a barrier, especially in those areas where coastal sage scrub or other native habitat cannot be seen across the corridor. The ETC would be a significant barrier to terrestrial wildlife species, such as the coyote and other large predators and their prey, which would ultimately affect the coastal sage scrub ecosystem, and therefore the gnatcatcher and cactus wren.

Colonel Michael R. Robinson

11

In summary, the Service finds that fragmentation of coastal sage scrub habitat by the West Leg ETC poses a threat to the long-term viability of the gnatcatcher and likely other coastal sage scrub-associated species. The habitat patches remaining on the west side of the ETC, including the Peters Canyon Regional Park and the Tustin Ranch areas, would be isolated to some degree from habitat to the east of the corridor.

As noted earlier, another negative result of fragmentation is edge effects. The 5.3-mile long West Leg of the ETC will create artificial edges along its length where it bifurcates natural, undisturbed habitat. The remaining habitat adjoining the ETC will have deteriorated value for wildlife to some distance away from the road due to the adverse affects of noise, air pollution and other factors. The ETC will also be a cause of mortality to a variety of species that move across the landscape.

The artificial edge created by the construction of the ETC could result in increased habitat disruption in areas that were previously inaccessible, and in increased rate of weedy plants (Noss 1992). This effect should be minimized by the revegetation of appropriate graded slopes along the corridor in the vicinity of the Loma Ridge and the Peter's Canyon Regional Park with coastal sage scrub plant species, as proposed as part of the project's mitigation package (USACOE 1994). Coastal sage scrub habitat patches to the west of and isolated by the corridor will also be exposed to the edge effects of future urban development spreading eastward from the Tustin and Irvine urban plains.

Brood parasitism by the brown-headed cowbird (Molothrus ater), could be exacerbated by increased edge effect, likely affecting the reproductive potential of the gnatcatcher. Cowbird parasitism and the direct and indirect impacts of a variety of projects currently limit the distribution and potential expansion of gnatcatchers in Orange County, and in California as a whole. A composite of the best scientific information available suggests that cowbird abatement program proposed as part of the project should alleviate or offset the depression of gnatcatcher productivity that might otherwise result from the direct or indirect effects of the project. Specifically, management programs including cowbird abatement and predator surveillance have been extraordinarily successful in bringing about rapid and statistically significant increases in southern California populations of the least Bell's vireo (Vireo bellii pusillus), a Federally-listed endangered species (Salata 1987; Hays 1989; The Nature Conservancy 1993). More importantly, the available data reveal that 40% of the 10 gnatcatcher nests monitored in the Coyote Hills in Fullerton, California were parasitized by cowbirds (UNOCAL 1993) as were 31% (54) of 176 gnatcatcher nests monitored in Riverside County study sites during the 1992-1993 breeding seasons (G. Braden, Pers. Comm.). It is critical that the reproductive capability of the gnatcatcher and coastal cactus wren be maximized to the extent possible in the short-term and in perpetuity to conserve and recover the local populations of these species. The cowbird management measures proposed as part of the Project (USACOE 1994), will contribute to the elimination of a significant threat to gnatcatcher reproductive capability.

Impacts to Central and Coastal NCCP Reserve Design

The impact of fragmentation of coastal sage scrub and its resident species, including the gnatcatcher, must be analyzed with respect to the County of Orange's NCCP planning efforts in the Central Subregion. As discussed earlier, the listing of the gnatcatcher as threatened was followed by the issuance of a special rule, which, in general, would allow land-use activities associated with a NCCP plan to not be considered a violation of

Colonel Michael R. Robinson

12

section 9 of the Act. Orange County is enrolled in the NCCP Program and is currently preparing a NCCP for the Central and Coastal Subregions (as well as for the Southern Subregion); a draft reserve design for the Central and Coastal Subregional NCCP plan has been prepared (County of Orange 1994a).

The NCCP program is intended to establish and manage a viable, permanent system of coastal sage scrub reserves complete with its matrix of other habitats, as well as identify areas that would be appropriate for development within the Central Subregion. The potential for establishment of a viable reserve system in the Central Subregion is the critical element in determining the impact of the ETC on the gnatcatcher; the ETC is a critical factor affecting/influencing reserve design and viability in this area. If it can be found that a viable coastal sage scrub reserve system can be established in the Central Subregion that includes the ETC project and its accompanying mitigation measures, the ETC, (assuming these are adequate means to minimize and mitigate impacts) would likely not impair the overall utility of the habitat in the Central Subregion as essential gnatcatcher population centers.

Central Subregional NCCP Reserve Design

In general, the Central Subregional Reserve Design incorporates already committed open space and areas of open space contemplated in conjunction with the approval of certain development projects in other areas. This open space system would also be augmented by adding reserve areas known to contain significant populations of gnatcatchers and cactus wren, and to provide linkages of natural habitat. The Central Subregion draft Reserve Design incorporates over 21,000 acres of coastal sage scrub and its matrix of other associated habitats, including lands necessary for connectivity (R.J. Meade, Pers. Comm.). Existing, planned and/or proposed regional open space lands in the Central Subregion, as identified in the Biological Assessment, includes a total of 8,379 acres of coastal sage scrub in Weir Canyon Wilderness Park, Santiago Oaks Regional Park, Irvine Regional Park, Open Space Area 31 in Gypsum Canyon, Peter's Canyon Regional Park, the Loma Ridge Open Space system, miscellaneous open space associated with the East Orange General Plan, Limestone Canyon Regional Park, and Whiting Ranch Wilderness Park. Significant areas which were added as reserve unit areas as part of the NCCP planning process include: a significant expansion to incorporate coastal sage scrub and significant gnatcatcher and coastal cactus wren populations south of the existing Loma Ridge Open Space system, including Upper Rattlesnake Canyon, Hicks Canyon, lower Foothills of Bee/Round Canyons - a NCCP reserve unit totalling 2,441 acres in size, with connections to the Limestone Canyon Regional Park NCCP reserve unit, totalling 10,934 acres; and a major expansion of natural habitat around the Weir Canyon Wilderness Area - a NCCP reserve unit totalling 3,923 acres, which would connect with a significant amount of coastal sage scrub habitat in a habitat matrix in the Weir, Gypsum and Coal Canyon areas across the ETC - a NCCP reserve unit totaling about 2,579 acres (R.J. Meade Pers. Comm.). The NCCP Reserve Design also includes a NCCP Reserve Unit that expands the existing Peters Canyon Regional Park to include 490 acres; the Tustin Ranch area, approximately 200 acres in size, is not included in the draft Reserve Design.

Connectivity

Connectivity between habitat reserve areas is essential for maintenance of the viability of the wide range of species inhabiting coastal sage scrub, including the gnatcatcher, over the long-term. As discussed above, while it is not clear to what extent major highways act as barriers to gnatcatcher movement, the ETC would be a significant barrier to terrestrial species, such as the coyote, mountain lion and other large predators and

Colonel Michael R. Robinson

13

their prey. The presence of a full compliment of resident species is important to the health and viability of a naturally functioning ecosystem. Since coastal sage scrub habitat patches will be bifurcated by the West Leg of the ETC, connectivity between NCCP reserve units must be provided through wildlife crossings and culverts.

The West Leg of the ETC includes one bridge that would act as a wildlife crossing, along with four large culverts that will enhance wildlife crossing of the corridor. The bridge/wildlife crossing is located at West Leg ETC Station Number 2701, and is approximately 17 feet high, 100 feet wide at the bottom and 240 feet wide at the top, with a traverse of 200 feet. In addition, the West Leg would include 3 culverts at least 54" in diameter and one culvert at least 96" in diameter. The exact locations and specifications of these crossings are described in USACOE 1994. The undercrossing would be located just south of the Loma Ridge NCCP Reserve Unit. The land in the general vicinity of this crossing is mostly agricultural, with patches of coastal sage scrub on the western side. While the undercrossing would not directly connect reserve units, the crossing and the four culverts would all generally connect the west slope of the Loma Ridge NCCP Reserve Unit with the Peters Canyon Reservoir Regional Park area, as enlarged by the NCCP Reserve Unit. While deer or mountain lions will likely not utilize the crossing in the future because of the proximity of anticipated future development, coyotes and other small mammals would be expected to utilize this crossing. The four culverts could also be used by small mammals and provide additional potential for wildlife to traverse the West Leg of the corridor. Coyotes have been known to use culverts with a diameter of 54 inches or greater. However, how effective this bridge undercrossing and culverts will be for wildlife crossing will depend largely upon the extent of development that could occur in the vicinity of the crossing along both sides of the ETC and between the West Leg ETC and the Peters Canyon Reserve Unit. The NCCP Reserve Design Map shows that this area is already mostly disturbed or developed. If this area is not intensely urbanized, coyotes and other small mammals would probably still utilize the bridge/undercrossing to access Peters Canyon or the Loma Ridge NCCP Reserve Units. The revegetation of the crossing area should help to attract wildlife to utilize the crossing. From the Loma Ridge NCCP Reserve Unit, animals would be able to cross the East Leg of the ETC through another wildlife crossing, The Haul Road crossing, into the Limestone Canyon Regional Park, as expanded, NCCP Reserve Unit.

In the short-term, connectivity to coastal sage scrub patches in the Santiago Hills area north of Peters Canyon Regional Park would remain, however, this area is not included as part of the NCCP Reserve Design; therefore long-term connectivity to habitat north of Peters Canyon Regional Park is not assured.

Impacts to Central Subregional NCCP Draft Reserve Design

The West Leg of the ETC bifurcates the Draft NCCP Reserve Design along the west slope of the Loma Ridge. The only NCCP reserve unit included west of the West Leg is the Peters Canyon Regional Park, as expanded by the NCCP Draft Reserve Design. This Reserve Unit totals about 490 acres (R.J. Meade Pers. Com). This reserve unit is already somewhat isolated by Jamborree Road and existing disturbed and/or developed lands. The Tustin Ranch area (about 200 acres), which supports a significant population of gnatcatchers but is totally surrounded by disturbed and/or developed lands, is not included in the Draft Reserve Design. The Peters Canyon Reserve Unit would be further isolated by the West Leg from the rest of the NCCP reserve units, except for the bridge undercrossing that will be constructed, as

Colonel Michael R. Robinson

14

described above. If the bridge is utilized by wildlife, especially small mammals and coyotes, the ecosystem functions in this small reserve unit could be maintained, at least in the short-term. As stated above, the degree of use of this crossing will depend upon the degree to which the area between the Peters Canyon reserve unit and the West Leg, a narrow strip of land, would be developed.

Not enough is known about the coastal sage scrub ecosystem to determine what the optimal size of a reserve system should be to ensure long-term viability of this habitat (CDFG 1993). Therefore the long-term viability of the Peters Canyon NCCP reserve unit is unknown. This reserve unit is already almost surrounded by disturbed and or developed lands, which reduces its long-term value for ecosystem function. Given the substantial acreage included in the Central Subregional Reserve Design, which includes almost 22,000 acres in mostly large blocks of habitat, especially in the Loma Ridge (about 2,400 acres) and Limestone Canyon Reserve Units (about 10,934 acres), as well as Weir Canyon Wilderness (about 3,923 acres) and the Windy Ridge Reserve Units (about 2,579 acres), and assuming that the current version of the Draft Reserve Design will not change substantially in these areas, and will be approved and implemented, along with the necessary management activities, the Peters Canyon Regional Park Reserve Unit (about 490 acres) is probably not essential to the long-term maintenance of the coastal sage scrub ecosystem in the Central Subarea.

However, the Peters Canyon NCCP Reserve Unit will be of critical importance as a peripheral reserve. Peripheral reserves that are partially isolated are valuable because they serve to isolate portions of the reserve system from catastrophic events, such as wildfires, that may devastate the larger, contiguous reserve area; residual populations of species that are somewhat isolated from the larger core population are also isolated from a catastrophic event. Therefore, these populations act as residua to repopulate areas affected by catastrophes. The importance of this was illustrated recently in the San Joaquin Hill wildfires in the fall of 1993. As described in the Biological Opinion for the San Joaquin Hills Transportation Corridor, unburned portions of the San Joaquin Hills and adjacent areas are expected to act as residua for the gnatcatcher and cactus to repopulate the burned areas as they begin to recover (USFWS 1994). If the Tustin Ranch area is developed, and not incorporated into the NCCP reserve design, the Peters Canyon Reserve Unit could become an important refugia for the existing gnatcatcher population at Tustin Ranch.

As discussed in the Biological Opinion for the Eastern Transportation Corridor (North and East Legs), the Draft Central Subregional Reserve Design provides substantial acreage both east and west of the North and East Legs of the ETC, and utilizes four wildlife crossings to maintain connectivity between significant reserve units. The Draft Reserve Design, together with these crossings, is intended to allow for the movement of small and large mammals, including predators and their prey base among the Cleveland National Forest, and Reserve Units on both sides of the ETC. In the Biological Opinion for the North and East Legs of the ETC, the Service found that the maintenance/management of the Loma Ridge/Limestone Canyon NCCP reserve units is likely essential to maintenance of gnatcatcher population in the Central Subregion over the long-term (USFWS 1994).

The County of Orange has determined, in consultation with County's NCCP consultant, Dr. Rob Schonholtz, that the ETC would not preclude or prevent the preparation of an effective subregional NCCP program (County of Orange 1994b).

Colonel Michael R. Robinson

15

In summary, the Service concludes that the proposed project will not jeopardize the overall survival and recovery of the gnatcatcher or the maintenance of viable populations of the species within the Northern Orange County Santa Ana Mountains and project "Action Area", primarily because of the habitat reserves proposed as part of the draft Central Subregional NCCP Reserve Design, and the substantial impact avoidance and compensation measures incorporated into the project description. Further, given these impact avoidance and compensation measures and the best scientific information, the Service concludes that the project-related bifurcation, fragmentation and the removal of coastal sage scrub habitat, likely will not impact the overall utility of the Northern Orange County Santa Ana Mountains as important, and probably essential, coastal cactus wren and gnatcatcher habitats and population centers. This conclusion is based upon the best available information, including the draft Subregional Reserve Design for the Central and Coastal NCCP Subregions, presented to the Service on April 22, 1994. If these conditions change or if subsequent information is received that determines that the NCCP reserve design is not valid, then this conclusion would also be invalidated.

Technical Assistance

Coastal Cactus Wren

The proposed project effects described above for the gnatcatcher are similar to those likely to affect the coastal cactus wren.

Consistency with NCCP Guidelines

In addition to reviewing the project for its impacts to the NCCP Planning Process ongoing in Orange County, the Service has reviewed the ETC project for consistency with the NCCP Process and Conservation Guidelines. The project applicant, TCA, has enrolled the ETC in the Central and Coastal NCCP Planning Effort, and is participating in the NCCP planning process. In general, the Service concludes that the ETC is generally consistent with the Guidelines and with the Central and Coastal Subregional NCCP. Specifically, the Service concludes that project-related impacts:

- 1) will not foreclose future conservation planning efforts until such time as an NCCP has been completed and long-term enhancement and management programs are formulated. The Central and Coastal Subregional NCCP is being prepared concurrent with plans for the ETC. The NCCP plan is currently in the design phase, which includes the ETC alignment and associated mitigation measures. As discussed in the biological opinion for the East and North Legs of the ETC, the alignment was shifted approximately 500 feet east, in order to reduce impacts to the Central Subregion NCCP reserve design, and to lessen impacts to significant populations of gnatcatchers and coastal cactus wrens. The wildlife crossings provided on all three legs of the ETC will maintain connectivity between NCCP Reserve Units. The project, including the proposed mitigation package, will provide funding necessary to assist in providing for the perpetual enhancement and management of coastal sage scrub habitat within the Central Subregion.
- 2) will not result in an interim loss equal to, or exceeding, 5% of the coastal sage scrub in any one subregion. The loss of coastal sage scrub by the West Leg ETC project would represent approximately 0.2 percent of the coastal sage scrub within the Central Subarea (P&D Technologies 1994).
- 3) are, to the maximum extent practicable, limited to areas with smaller populations of target species. While the ETC has been in the planning process for a number of years, it is also being planned concurrent with the

Colonel Michael R. Robinson

16

Central and Coastal Subregional NCCP. Areas of major biological importance, such as the Weir Wilderness Park and the Lomas Ridge/Siphon Ridge areas have been avoided to the maximum extent possible by project design and alignment changes. NCCP target species are generally present along the alignments of the West, North, and East Legs of the project. However, out of an estimated eight populations of California gnatcatcher that are concentrated in the subregion (i.e. Weir/Santiago Regional Park, Peters Canyon, Irvine Park, Loma Ridge, Rattlesnake Reservoir, Siphon Reservoir, Aqua Chignon Wash and scattered locations in Limestone Regional Park), the project avoids all, except for a portion of the Siphon Reservoir population. The West Leg directly impacts only one gnatcatcher, and one cactus wren.

4) do not, to the maximum extent practicable, disproportionately affect specific subunits of the environmental gradient in each subregion (as defined by vegetation subcommunity, latitude, elevation, distance from coast, slope, aspect or soil type. The ETC, as an essentially linear project, traverses a variety of vegetation communities, elevations, slopes, aspects and soil types (P&D Technologies 1992).

5) do not compromise the NCCP effort to protect, prior to completion of a subregional plan, areas of higher long-term conservation value as defined by the extent of coastal sage scrub habitat, proximity of that habitat to other habitat, the value of the habitat as landscape linkages or corridors, or the presence of sensitive species. While the Service only recently received some of the Central Subregional NCCP data from the County of Orange, and has not been able to determine the long-term conservation value of lands within the Central subregion, the Central Subregional draft reserve design has attempted to identify and include in the NCCP reserve, those areas that would appear to be of high value for long-term conservation (notable exceptions to this are the Tustin Ranch area and portions of the East Orange Planning Area). In addition, by incorporating wildlife crossings in strategic locations along the three legs of the ETC, the ETC project provides for the connectivity essential to maintaining the long-term health and viability of the NCCP reserves. The revegetation and preservation measures which are proposed as a part of the project promote coastal sage scrub and biological values to help maintain and potentially enhance target species and their occupation of the southern foothills of the Santa Ana Mountains. The program will help facilitate gnatcatcher movement among Peters Canyon, Loma Ridge, Rattlesnake Canyon, Hicks Canyon and Siphon Ridge as well to the east at Aqua Chignon Wash.

6) do not compromise the NCCP effort to direct development pressure to areas that have lower conservation value. Much of the coastal sage scrub habitat in the North Orange County Santa Ana Foothills is in committed open space or existing conservation areas, as augmented by the Central Subarea NCCP reserve design. The ETC will not necessarily direct development pressure towards (or away from) areas of higher long-term conservation value. Subregional planners have the task of identifying areas of long-term conservation value (the Reserve system) to steer development pressure into areas of lower conservation value within the North Orange County Santa Ana Foothills and federal "Action Area" through the continued NCCP effort.

7) do not compromise the NCCP effort to ensure that all interim habitat losses are adequately mitigated and that said mitigation contributes to the interim subregional mitigation program that will be subsumed in the long-term subregional NCCP. As is indicated above, the project, including the proposed compensation measures, will enhance the NCCP's goal to provide for the perpetual enhancement and management of coastal sage scrub, gnatcatcher and coastal cactus wren conservation areas within the Central subregion.

Colonel Michael R. Robinson

17

In addition, the Service concludes that the management and restoration measures that have been developed for this project constitute special mitigation measures, as required for the NCCP Program (CDFG 1993). The Conservation Guidelines emphasize the importance of management and restoration research to subregional NCCP planning and further state that such efforts are "essential to the adaptive management of coastal sage scrub habitat". It is further recognized that such efforts "undertaken as mitigation during the interim program will add to the overall ability of these conservation tools to be employed more successfully in the future" (CDFG 1993).

In summary, the Service concludes that the loss of the habitat within the project footprint and the overall direct and indirect effects of the project will not result in the extirpation of the Northern Orange County Santa Ana Mountains populations of the gnatcatcher. Given the commitment of the U.S. Army Corps of Engineers and the applicant to provide the resources to conduct and fund the restoration, enhancement and management activities for coastal sage scrub habitat in the Central Subregion, and the perpetual management activities proposed, the Service concludes that project related impacts likely will not jeopardize the survival or recovery of the gnatcatcher.

Cumulative Impacts

Cumulative effects are those impacts of future State, local government, and private actions affecting endangered and threatened species that are reasonably certain to occur in the project "Action Area". Future federal actions will be subject to the consultation requirements established in Section 7 of the Endangered Species Act (Act) and, therefore, are not considered cumulative to the proposed action.

The majority of activities anticipated to affect this species within the foreseeable future are local projects with no direct Federal involvement. A large number of projects that lack a Federal nexus also have occurred or are proposed within the current range of the gnatcatcher. These projects could result, overtime, in significant cumulative effects to the gnatcatcher. However, private projects with no Federal nexus are subject to certain other regulatory constraints of the Act. For example, Section 4 of the Act requires the Service to list species that are threatened or endangered, and section 9 of the Act prohibits the unlawful "take" [e.g., harm, harass] of listed species "by any 'person', including private individuals and entities."

Anticipated prohibitions against "take" and a desire to engage in proactive planning have prompted efforts by local governments and large land owners to develop Habitat Conservation Plans (HCPs), pursuant to authorization for incidental take under section 10 of the Act. In addition and as discussed within this document, The Resources Agency, the Department of Fish and Game, together with local governments, landowners and environmental groups and in cooperation with the Service, are together developing a Natural Communities Conservation Plans that would cover most of Orange County, including the project area. The efforts of all parties, working cooperatively with the agencies, and combined with current federal protection for the gnatcatcher that limits loss of coastal sage scrub habitat to no more than 5% during the planning stages are intended to provide mitigation for project-related impacts to the gnatcatcher, coastal cactus wren, orange-throated whiptail, and the entire suite of sensitive species resident in coastal sage scrub in the future. However, in the absence of NCCPs/HCPs incorporating substantive impact avoidance and compensation measures, the Service believes that habitat destruction,

Colonel Michael R. Robinson

18

cowbird parasitism, and indirect impacts resulting from a variety of individual projects will effect the distribution and potential expansion of gnatcatchers throughout their historic range.

Nearly all of the land in the "Action Area" and in the Central Subregion that is not developed is within jurisdictions that have enrolled in the NCCP Program. As a result, all such lands are subject to the requirements of the the special rule, the Conservation Guidelines and other requirements of the NCCP process. This ensures that future land uses in this Subregion will be evaluated as to their impacts to the subregional planning effort, and will be required to provide mitigation to ensure protection of the gnatcatcher and other target species in enrolled areas.

In the event that it is determined that any future proposed development in the "Action Area" would have adverse impacts on gnatcatchers, cactus wrens or other coastal sage scrub sensitive species covered in the NCCP plans, appropriate and adequate mitigation measures would be developed in concert with representatives from the Service and Department of Fish and Game to ensure the protection of those species. For any property in the "Action Area" that is not covered by a jurisdictional enrollment in the NCCP, that property would still be subject to the requirements of CEQA and the Endangered Species Act. The following quotation from the NCCP Process Guidelines addresses this specific issue:

CEQA has a mandatory finding of significance wherever:

'(a) The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal,....'"(CEQA Guidelines, section 15065)

By that standard, most coastal sage scrub habitat in the NCCP Program area is sensitive and could trigger a CEQA finding of significance. Accordingly, the presence of coastal sage scrub would be disclosed and potential impacts to the gnatcatcher would be revealed.

The EIS for the East and North Legs of the ETC states that potential growth inducing impacts generated by the North and East Legs of the ETC are most likely to affect nearby developed and undeveloped lands located in portions of north and central Orange County. These areas of potential impact include areas within the City of Anaheim's and Orange's sphere of influence (i.e. Blind and Fremont Canyons). The ETC would have no growth inducing impacts along the West Leg, as growth here is already planned as part of the City of Irvine General Plan.

As stated earlier, the NCCP Draft Reserve Design incorporates the Peters Canyon Regional Park and the entire frontal slope area of the Loma Ridge and adjacent lowlands into NCCP reserve units. The NCCP plans for both the Central and Coastal Subregions will address impacts to coastal sage scrub habitat and the three target species. In addition, all future development in the Central and Coastal Subregions will be required to proceed through full environmental review prior to development, consistent with the NCCP Process Guidelines (CDFG 1993).

The Service concludes, given all relevant information and analysis, that the West Leg ETC, together with other proposed and future projects would have cumulatively significant impacts to the gnatcatcher; the West Leg ETC is not anticipated to induce growth in the project "Action Area". However,

Colonel Michael R. Robinson

19

all future development and growth in the Central and Coastal Subregions, whether planned or unplanned, will be evaluated to determine its effects on the gnatcatcher, will be required to mitigate these impacts, and will be constrained by the protective mandates of the Act, the NCCP Program, and/or CEQA.

Technical Assistance

Coastal Cactus Wren

Effects to the coastal cactus wren resulting from the above cumulative, growth inducing actions are similar to those described for the gnatcatcher.

Incidental Take

Sections 4(d) and 9 of the Act prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR section 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR section 17.3). Under the terms of Section 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking, provided that such taking is in compliance with the reasonable and prudent measures, and terms and conditions that implement them, as set forth below.

The Service hereby incorporates by reference the mitigation measures from the U.S. Army Corps of Engineers "Description of Proposed Action" into this incidental take statement as part of these "Terms and Conditions". The "Terms and Conditions" reflect the mitigation measures as proposed, with modifications where necessary as determined by the Service. Where these "Terms and Conditions" vary from or contradict mitigation measures proposed under "Description of Proposed Action", specifications in these terms and conditions shall apply.

The U.S. Army Corps of Engineers has a continuing duty to regulate the activity that is covered by this incidental take statement. If the U.S. Army Corps of Engineers fails to require the applicant adhere to the "Terms and Conditions" of the incidental take statement through enforceable terms that are added to the permits, the protective coverage of section 7(o)(2) of the Act may lapse. This incidental take authorization is null and void if the above project description changes, if any mitigation or conservation measure in the EIS, Technical Report, Biological Assessment, or supplemental documentation is not fully carried out or executed, or if any Terms and Conditions or Reasonable and Prudent Measures as defined or described below are not met by the U.S. Army Corps of Engineers, Transportation Corridor Agencies or their designated agents or successors, if the draft NCCP Reserve Design presented to the Service on April 22, 1994 is significantly modified, or if subsequent information received by the Service determines that the April 22, 1994 draft NCCP Reserve Design, incorporating the ETC alignment does not represent a viable reserve system for maintenance of the coastal sage scrub ecosystem.

It is not possible to precisely predict the amount of incidental take that would be associated with ETC construction, for several reasons:

Colonel Michael R. Robinson

20

- The number and location of birds will vary from season to season;
- The precise effects on breeding territories near the edge of the grading area are not known; and
- The precise effects of noise and other disturbance on breeding territories outside the area of direct effect, but within the area affected by noise from the Corridor, can only be estimated.

However, given the information in the Biological Assessment, the Service anticipates that the following take could occur as a result of the proposed action:

1. One (1) gnatcatcher may be accidentally injured or killed during project construction or operation activities.
2. An unknown number of gnatcatcher eggs may be destroyed during project construction or operation activities.
3. An unknown number of gnatcatcher fledglings may be destroyed during project activities.

The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the more restrictive provisions of the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The Service is developing a program to address incidental take under the Migratory Bird Treaty Act.

If, during the course of the action, the amount or extent of the incidental take limit is reached, the U.S. Army Corps of Engineers shall immediately notify the Service in writing. If the incidental take limit is exceeded, the U.S. Army Corps of Engineers or its agents must cease the activity resulting in take and reinstate consultation with the Service immediately to avoid further violation of Section 9 of the Act. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR 402.14(i). The U.S. Army Corps of Engineers and its agents should provide an explanation of the causes of the taking.

Reasonable and Prudent Measures

The Service believes that the following Reasonable and Prudent Measures are necessary and appropriate to minimize incidental take:

1. The U.S. Army Corps of Engineers or its agents shall provide mitigation as described, implied, or suggested in the EIR, Technical Report, Biological Assessment and all other relevant letters and documents to minimize incidental take and to compensate for unavoidable impacts to the species.
2. The U.S. Army Corps of Engineers and its agents shall minimize to the extent possible the killing, harming or harassing of gnatcatchers and removal of coastal sage scrub habitat in conjunction with construction or other site development activities.
3. The U.S. Army Corps of Engineers or its agents shall obtain all applicable state and Federal permits to take the gnatcatcher and

Colonel Michael R. Robinson

21

remove coastal sage scrub habitat. The incidental take authorization in this Biological Opinion is summarily revoked in the absence of such permits.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Act and to meet the conditions of the conservation plan and conservation agreement, the U.S. Army Corps of Engineers and its agents (e.g., Caltrans, the Transportation Corridor Agencies) are responsible for compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. To this end, the U.S. Army Corps of Engineers or its agents shall, at a minimum, provide mitigation as described, implied, or suggested in the EIR, Technical Report, Biological Assessment and other relevant letters and documents to minimize incidental take. In part:

- FWS-21
1. The U.S. Army Corps of Engineers or its agents shall preserve an estimated 20 acres of coastal sage scrub at Siphon Ridge. This preservation program shall be coordinated with the Preservation/Restoration Program associated with the North and East Leg ETC biological opinion;
 - 22 2. The U.S. Army Corps of Engineers or its agents shall contribute \$500,000 to a conservation fund established by the Service. Payment shall be made to the Fish and Wildlife Foundation. The conservation fund is to be used to support the Natural Communities Conservation Planning Efforts, including but not limited to management, restoration and enhancement of lands preserved through the Central and Coastal Subregional NCCP Planning effort. The West Leg installment shall be paid after the three installments for the North and East Leg, (totaling \$1,515,000), have been paid;
 - 23 3. The U.S. Army Corps of Engineers or its agents shall ensure the operation of five cowbird traps near the Peters Canyon Regional Park/Loma Ridge along the West Leg in perpetuity. Funds shall be provided sufficient to conduct trapping annually or to establish an endowment sufficient to provide trapping in perpetuity. Cowbird trapping shall begin during the spring of 1995 and shall continue for a minimum of five months each calendar year, unless the Service and the U.S. Army Corps of Engineers or its agents unanimously agree that a lesser effort is justified during a given calendar year. The design, placement and operation of the traps shall be directed and approved by the Service. A report detailing cowbird management activities shall be provided to the Service within two months of the conclusion of trapping efforts during each and every calendar year. Upon request of the U.S. Army Corps of Engineers or its agents, the Service shall attempt to locate a suitable public or nonprofit foundation or organization that is willing to provide, under contract, the services necessary to meet this mitigation requirement. In any case the U.S. Army Corps of Engineers or its agents shall be responsible for obtaining permission from the Landowner to operate traps on their property;
 - 19 4. The U.S. Army Corps of Engineers or its agents shall restore/revegetate coastal sage scrub habitat adjacent to the corridor on appropriate graded slopes that are adjacent to permanent open space (Loma Ridge Open Space Unit, Peters Canyon Regional Park), outside proposed developed areas. The revegetation effort will be considered acceptable if:

CT

Colonel Michael R. Robinson

22

- a. the habitat is occupied by breeding pairs of gnatcatchers, or;
- b. the Service and the U.S. Army Corps of Engineers or its agents unanimously agree that the habitat has the structure and composition of naturally-occurring gnatcatcher habitat or fully functional coastal sage scrub, or;
- c. the U.S. Army Corps of Engineers or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago;

20
5. The U.S. Army Corps of Engineers or its agents shall provide 1 bridge structure at Station 2701 and 4 culverts at least 54" in diameter along the West Leg, at the dimensions and locations specified in USACOE 1994 to enhance wildlife crossing;

24
6. The U.S. Army Corps of Engineers or its agents shall revegetate the area disturbed by construction of the bridge/wildlife crossing at Station 2701 with habitat indigenous to the area. The revegetation plan will be approved by the Service prior to the construction of the crossings. The revegetation effort will be considered acceptable if:

- a. the habitat is occupied by breeding pairs of gnatcatchers, or;
- b. the Service and the U.S. Army Corps of Engineers or its agents unanimously agree that the habitat has the structure and composition of naturally-occurring habitat or fully functional coastal sage scrub, or;
- c. the U.S. Army Corps of Engineers or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago.

25
7. The U.S. Army Corps of Engineers or its agents shall obtain a wildlife conservation easements for the movement corridor under the wildlife crossing at Station 2701;

26
8. The U.S. Army Corps of Engineers or its agents shall replace or restore all coastal sage scrub habitat outside of the approved construction footprint, at a ratio of five acres replaced for each acre lost, that is destroyed or significantly modified as a result of the construction, implementation, or operation of the proposed project. The revegetation effort will be considered acceptable if:

- a. the habitat is occupied by breeding pairs of gnatcatchers, or;
- b. the Service and the U.S. Army Corps of Engineers or its agents unanimously agree that the habitat has the structure and composition of naturally-occurring gnatcatcher habitat or fully functional coastal sage scrub, or;
- c. the U.S. Army Corps of Engineers or its agents can demonstrate, to the satisfaction of the Service, that the habitat is insignificantly different (statistically) from naturally-occurring gnatcatcher habitats or fully functional coastal sage scrub in the Lomas de Santiago;

Colonel Michael R. Robinson

23

- 27 9. The U.S. Army Corps of Engineers or its agents shall implement all mitigation measures that are implied or identified in the Technical Studies, Biological Assessment or EIR pertaining to water quality or erosion to prevent the dissemination or the concentration of pollutants in the project area or environs;
- 28 10. The U.S. Army Corps of Engineers or its agents shall mitigate light and glare impacts as identified in the EIR or Biological Assessment;
- 29 11. The U.S. Army Corps of Engineers or its agents shall provide a minimum of seven, and if feasible, 14 days prior notice to the Service before commencing grading activities. Grubbing or other land clearing activities shall not occur unless and until construction of the West Leg ETC is ready to begin in earnest. The U.S. Army Corps of Engineers shall, to the extent possible, minimize the take of gnatcatchers by employing whatever means or measures that are necessary to prevent to the harm and death of individual birds during grubbing, clearing, and other construction activities. At a minimum, the following construction monitoring measures shall be implemented to minimize impacts to gnatcatchers and coastal sage scrub habitat:
- a) Construction shall be monitored by a biologist to minimize construction impacts on natural resources outside the actual construction zone. The monitor shall observe the contractor's work to ensure that work does not take place in high value natural areas outside the clearing limits as staked in the field;
 - b) The contractor shall review the rough grading plans and staking to ensure that the grading is within the project footprint as described for the Biological Opinion;
 - c) Construction monitoring activities shall include the prevention of harm, harassment, injury, or death of wildlife by means of the education of contractor and construction crews. In addition, the monitor shall work to prevent violation of existing laws, such as the Migratory Bird Treaty, Clean Water Act, and Fish and Game Code. If any violations or potential violations of these and other laws are noted, the monitor will advise the TCA accordingly. If necessary, work will be stopped, and the monitor shall advise the U.S. Army Corps of Engineers, TCA, Service, and the Department of Fish and Game and other appropriate resource agencies to resolve the situation;
 - d) Monitoring of coastal sage scrub habitat within or immediately adjacent to active or future project construction areas shall occur throughout the construction period, in order for the monitor to be aware of gnatcatcher and coastal cactus wren locations;
 - e) Continuous monitoring of gnatcatchers and coastal cactus wrens in active territories shall be conducted during any construction operations that occur within 100 feet of occupied habitat. The purpose of this monitoring will be either to verify that the construction does not significantly adversely affect the gnatcatcher activity or to determine whether "take" occurs, whichever the case may be. If this monitoring indicates that unauthorized take of gnatcatchers and coastal

Colonel Michael R. Robinson

24

cactus wrens may occur, construction will cease pending coordination with the Service.

- 30
12. The U.S. Army Corps of Engineers or its agents shall obtain necessary local, State and Federal permits to take, harm, or destroy the gnatcatcher and coastal sage scrub habitats. The authorizations granted herein, including the incidental take authorization, are null and void absent such permits. In particular, the U.S. Army Corps of Engineers shall comply with all pertinent provisions of the Migratory Bird Treaty Act, as determined by the Service (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended).
- 31
13. The U.S. Army Corps of Engineers, as the Federal action agency, shall retain ultimate responsibility for the implementation of all preceding terms and conditions in the event of financial or institutional incapacity of TCA to perform them.

Disposition of Sick, Injured, or Dead Individuals

The Service's Carlsbad Office must be notified within three working days should any listed species be found dead or injured in or adjacent to the project area. Notification must include the date, time, and location of the carcass, cause of death or injury, and any other pertinent information. If necessary, the Service will provide a protocol for the handling of dead or injured, listed animals. In the event that the U.S. Army Corps of Engineers or its agents suspect that a species has been taken in contravention of any federal, State, or local law, all relevant information shall be reported within 24 hours to the Service's Carlsbad Enhancement Office at (619) 431-9440 or to the Service Division of Law Enforcement, Torrance, California at (310) 297-0062.

Conservation Recommendations

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibility for these species.

1. The U.S. Army Corps of Engineers and Service should analyze and consider the goals and progress of the proposed NCCP and other conservation planning efforts to insure consistency with Biological Opinions issued in conjunction with Federal projects or projects that are Federally-funded or permitted. This analysis should be extended to a consideration of the success of proposed avoidance and mitigation measures associated with this project and other projects throughout the range of the gnatcatcher.
2. The Service, in consultation with other Federal agencies and working group or recovery team members, should assess the efficacy of various measures for mitigating project-related direct or indirect impacts to gnatcatchers and their habitat. Thus far, it is apparent that successful creation or restoration of coastal sage scrub habitat has been achieved by relatively few revegetation specialists. Because the creation or restoration of coastal sage scrub habitat is often an

Colonel Michael R. Robinson

25

essential component of effective mitigation for impacts to said habitat, revegetation methodologies and related data bases warrant close scrutiny and constant refinements.

Conclusion

This concludes the conference on the U.S. Army Corps of Engineers/Eastern Transportation Corridor West Leg Project. As found at 50 CFR 402.16, reinitiation of formal consultation is required if the action is significantly modified from that described above or if new information becomes available on listed species or impacts to listed species. Specifically, if the draft Central and Coastal Subregional NCCP reserve design changes substantially (as determined by the Service), or if analysis of the forthcoming data from the County of Orange refutes the determinations made by the Service at this time, reinitiation of formal consultation will be required. Additionally, should the coastal cactus wren, for which the Service provided technical assistance in this opinion, be proposed for listing by the Service, formal consultation should be initiated immediately.

If you have any questions on this biological opinion, please call me at (619) 431-9440 or Tara Wood of my staff, at (916) 978-4613.

Sincerely,



Gail C. Kobetich
Field Supervisor

cc: Steve Letterly, TCA

Colonel Michael R. Robinson

26

LITERATURE CITED AND REFERENCES

- American Ornithologists' Union. 1957. Checklist of North American Birds, 5th Edition. American Ornithologists' Union, Washington, D.C.
- American Ornithologists' Union. 1983. Checklist of North American Birds, Sixth Edition. American Ornithologists' Union. Printed by Allen Press, Lawrence, Kansas. 877 pages.
- American Ornithologists' Union. 1989. Thirty-seventh supplement to the American Ornithologists' Union checklist of North American birds. Auk 106 (3): 532-538
- Anderson, E.R. 1991. Habitat Preferences of the California Gnatcatcher in San Diego County. Unpublished M.A. thesis, San Diego State University.
- Atwood, J. 1980. The United States distribution of the California black-tailed gnatcatcher. Western Birds 11: 65-78.
- Atwood, J. 1988. Speciation and geographic variation in black-tailed gnatcatchers. Ornithological Monographs No. 42. American Ornithologists' Union, Washington, D.C.
- Atwood, J. 1990. Status review of the California gnatcatcher (Polioptila californica). Manomet Bird Observatory, Manomet, Massachusetts.
- Atwood, J. 1991. Subspecies limits and geographic patterns of morphological variation in California gnatcatchers (Polioptila californica). Bulletin Southern California Academy of Sciences 90 (3) 118-133.
- Axelrod, D. 1978. The origin of coastal sage vegetation, Alta and Baja California. American Journal of Botany 65 (10): 1117-1131.
- Barbour, M. and J. Major 1977. Terrestrial Vegetation of California. John Wiley and sons, New York.
- Benson, L. 1969. The Native Cacti of California. Stanford University Press, Stanford, California.
- Braden, G. U.S. Fish and Wildlife Service, Carlsbad, California. Personal communications pertaining to the incidence of cowbird parasitism at Riverside County study areas, California; 1992 and 1993.
- Braden, G. U.S. Fish and Wildlife Service, Carlsbad, California. Personal communications regarding gnatcatcher fledgling dispersal. 1994.
- Bontrager, D. 1994. First annual progress report, 1993 California gnatcatcher research activity in the superpark Area of Orange County, California. Unpublished report prepared for the U.S. Fish and Wildlife Service, OMA, Fairfax, Virginia. January, 1994.
- Bontrager, D. Personal communications regarding roads as barriers to gnatcatcher movement. 1994.
- Bowler, P. 1990. Coastal sage scrub restoration - I: The challenge of mitigation. Restoration and Management Notes 8(2): 78-82.

Colonel Michael R. Robinson

27

- California Department of Fish and Game. 1993a. Southern California coastal sage scrub Natural Community Conservation Planning Process Guidelines. Amended November, 1993.
- County of Orange. 1994a. County of Orange Coastal and Central NCCP/HCP Preliminary Habitat Reserve Design.
- County of Orange. 1994b. Letter regarding consistency of the ETC with the County's NCCP Process. On file, USFWS Carlsbad Field Office.
- Dawson, W. 1923. The Birds of California. Volume 1. South Moulton Company, San Diego.
- Dunn, J., E. Blom, G. Watson, and J. O'Neill. 1987. Cactus wren account. Pp. 318-319 in Field Guide to the Birds of North America (S.L. Scott, ed.). National Geographic Society, Washington, D.C.
- Federal Highway Administration. 1994a. Eastern Transportation Corridor Final Environmental Impact Statement. March 1994.
- Federal Highway Administration. 1994b. Letter providing supplemental information developed for the mitigation package for the Eastern Transportation Corridor. June 2, 1994.
- Federal Highway Administration. 1994c. Letter providing supplemental information developed for the mitigation package for the Eastern Transportation Corridor. July 1, 1994.
- Fleisman, E. and D.D. Murphy. 1993. A review of the biology of coastal sage scrub. Draft outline in Southern California Coastal Sage Scrub Natural Communities Conservation Plan, Scientific Review Panel Conservation Guidelines and Documentation. Unpublished report. California Department of Fish and Game, Sacramento.
- Freudenberger, D.O., B.E. Fish, and J.E. Keelye, 1987. Distribution and stability of grasslands in the Los Angeles Basin. Bulletin of the Southern California Academy of Sciences 86:13-26.
- Garrett, K. 1992. Correspondence to the U.S. Fish and Wildlife Service Dated February 3, 1992. Natural History Museum of Los Angeles County, Los Angeles, California.
- Garret, K. and J. Dunn. 1981. The Birds of Southern California: Status and Distribution. Los Angeles Audubon Society; 407 pages.
- Gary, J.T. 1983. Competition for light and a dynamic boundary between chaparral and coastal sage scrub. Madrono 30:43-49.
- Grinnell, J. 1915. A distributional list of the birds of California. Pacific Coast Avifauna No. 11.
- Grinnell, J. and A. Miller 1944. The distribution of the birds of California. Pacific Coast Avifauna 27.
- Hays, L. 1989. The status and management of the Least Bell's Vireo within the Prado Basin, California, 1986-1989. Unpublished report, California State University, Long Beach Foundation, Long Beach, California; Dr. Charles T. Collins, Project Director.

Colonel Michael R. Robinson

28

- Hillyard, D. and M. Black. 1987. Coastal sage scrub revegetation at Crystal Cove State Park, Orange County, California: 1987 update. Proceedings of the Second Native Plant Revegetation Symposium. Society for Ecological Restoration and Management. Madison, Wisconsin.
- Keeley, J.E. and S.C. Keeley. 1984. Postfire recovery of California coastal sage scrub. *America Midland Naturalist* 111:105-117.
- Keeley, J.E., B.A. Morton, A. Pedrosa, and P. Trooter. 1985. Roll of allelopathy, heat, and charred wood in the germination of chaparral herbs and suffrutescents. *Journal of Ecology* 73:445-458.
- Keeley, S.C. and J.E. Keeley. 1982. The role of allelopathy, heat, and charred wood in the germination of chaparral herbs. pp. 128-134 in C.E. Conrad and W.C. Oechel, technical coordinators. Proceedings of the symposium on dynamics and management of Mediterranean-type ecosystems. Pacific Southwest Forest and Range Experimental Station General Technical Report PSW-58, Berkeley, California.
- Keeley, S.C., J.E. Keeley, S.M. Hutchinson, and A.W. Johnson, 1981. Postfire succession of the herbaceous flora in southern California chaparral. *Ecology* 62:1608-1621.
- Kinsinger, Debra. 1993. U.S. Fish and Wildlife Service, Carlsbad, California. Personal communications regarding multi-agency revegetation and erosion-prevention efforts in the San Joaquin Hills and environs subsequent to the October, 1993, Laguna Beach fire.
- Kirkpatrick, J. and C. Hutchinson. 1977. The community composition of California coastal sage scrub. *Vegetation* 35: 21-33.
- Kirkpatrick, J. and C. Hutchinson. 1980. The environmental relationships of Californian coastal sage scrub and some of its component communities and species. *Journal of Biogeography* 7: 23-28.
- Klopatek, J., R. Oson, C. Emerson, and J. Jones. 1979. Land use conflicts with natural vegetation in the United States. *Environmental Conservation*: 6: 191-199.
- LSA. 1993. (LSA Associates, Inc.). A review of coastal sage scrub restoration projects in Orange and San Diego Counties. Report prepared for the Transportation Corridor Agencies; 7 pages.
- MacMillen, R., E. Wohler, and J. Norman. 1991. Status report on a population of the California gnatcatcher inhabiting the Open Space Reserve on the campus of the University of California, Irvine. department of Ecology and Evolutionary Biology, University of California, Irvine. 6 pages.
- Meade, R.J. Personal communication pertaining to County of Orange Central Subregional Reserve Design issues.
- Munz, P.A. 1974. A flora of southern California. University of California Press, Berkeley.
- NCCP Scientific Review Committee. 1994. Personal communication, J. Atwood, J. Rotenberry, D. Murphy, regarding draft Central NCCP reserve design issues and impacts by the Eastern Transportation Corridor. July 1994.

Colonel Michael R. Robinson

29

Noss, R.F. 1992. Edge effects, roads, and connectivity. Draft sections, in Scientific Review Panel Conservation Guidelines and Documentation, August 1993.

Ogden Environmental and Energy Services Company, Inc. 1992. Population viability analysis for the California gnatcatcher within the MSCP study area. Unpublished draft report prepared for the Clean Water Program, City of San Diego.

O'Leary, J. 1990. Californian coastal sage scrub: general characteristics and considerations for biological conservation. Pages 24-41 in "Endangered plant communities of southern California", A. Schoenherr (ed.). Southern California Botanists Special Publication Number 3.

O'Leary, J., D. Murphy and P. Brussard. 1992. An NCCP special report: the coastal sage scrub community conservation planning region. Special Report No. 2.

F&D Technologies. 1992. Environmental Impact Report for the Eastern Transportation Corridor TCA and Biological Resources Analysis Technical Report. Prepared for the Foothill/Eastern Transportation Corridor Agencies and Federal Highway Administration. May 1992.

F&D Technologies. 1994. Biological Assessment for the West Leg of the Eastern Transportation Corridor. Prepared for: Foothill/Eastern Transportation Corridor Agencies and Federal Highway Administration and the California Department of Transportation. February 1994.

Rea, A.M. 1986. Geographic variation in Campylorhynchus brunneicapillum: NW, peninsular and insular races in Phillips, A.R. The Known Birds of North and Middle America, Part I. Denver, Colorado (privately published).

Rea, A., and K. Weaver. 1990. The taxonomy, distribution, and status of coastal California cactus wrens. Western Birds 21: 81-126.

Salata, L.R. 1987. Status of the least Bell's vireo at Camp Pendleton, California in 1987. Unpublished report, Sweetwater Environmental Biologists, Spring Valley, California.

Salata, L.R. 1992. A status review of the coastal cactus wren. Unpublished draft report. U.S. Fish and Wildlife Service, Carlsbad, California.

Soule, M.E., D.T. Bolger, A.C. Alberts, J. Wright, M. Sourice, and S. Hill. 1988. Reconstructed dynamics of chaparral-requiring birds in urban habitat lands. Conservation Biology 2: 75-92.

Terrill, S.B. 1988. Cactus wren. Pp. 344-345 in The Audubon Society Master Guide to Birding (J. Farrand, Jr., ed.). Alfred A. Knopf, New York.

The Nature Conservancy. 1993. The status and management of the Least Bell's Vireo in the Prado Basin, California, 1986-1992. Unpublished report prepared for the Orange County Water District, Corps of Engineers, California Department of Fish and Game, and U.S. Fish and Wildlife Service.

Appendix H. USFWS Species List

This page intentionally left blank



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Carlsbad Fish and Wildlife Office
2177 SALK AVENUE - SUITE 250
CARLSBAD, CA 92008

PHONE: (760)431-9440 FAX: (760)431-5901

URL: www.fws.gov/carlsbad/

Consultation Code: 08ECAR00-2015-SLI-0174

February 02, 2015

Event Code: 08ECAR00-2015-E-00374

Project Name: SR-241/SR-91 Express Lanes Connector

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: SR-241/SR-91 Express Lanes Connector

Official Species List

Provided by:

Carlsbad Fish and Wildlife Office
2177 SALK AVENUE - SUITE 250
CARLSBAD, CA 92008
(760) 431-9440
<http://www.fws.gov/carlsbad/>

Consultation Code: 08ECAR00-2015-SLI-0174

Event Code: 08ECAR00-2015-E-00374

Project Type: Transportation

Project Name: SR-241/SR-91 Express Lanes Connector

Project Description: Transportation Corridor Agencies (TCA) in corporation with California Department of Transportation propose to construct new direct connectors between SR-241 toll lanes and SR-91 Express lanes. Project is located in Orange County California.

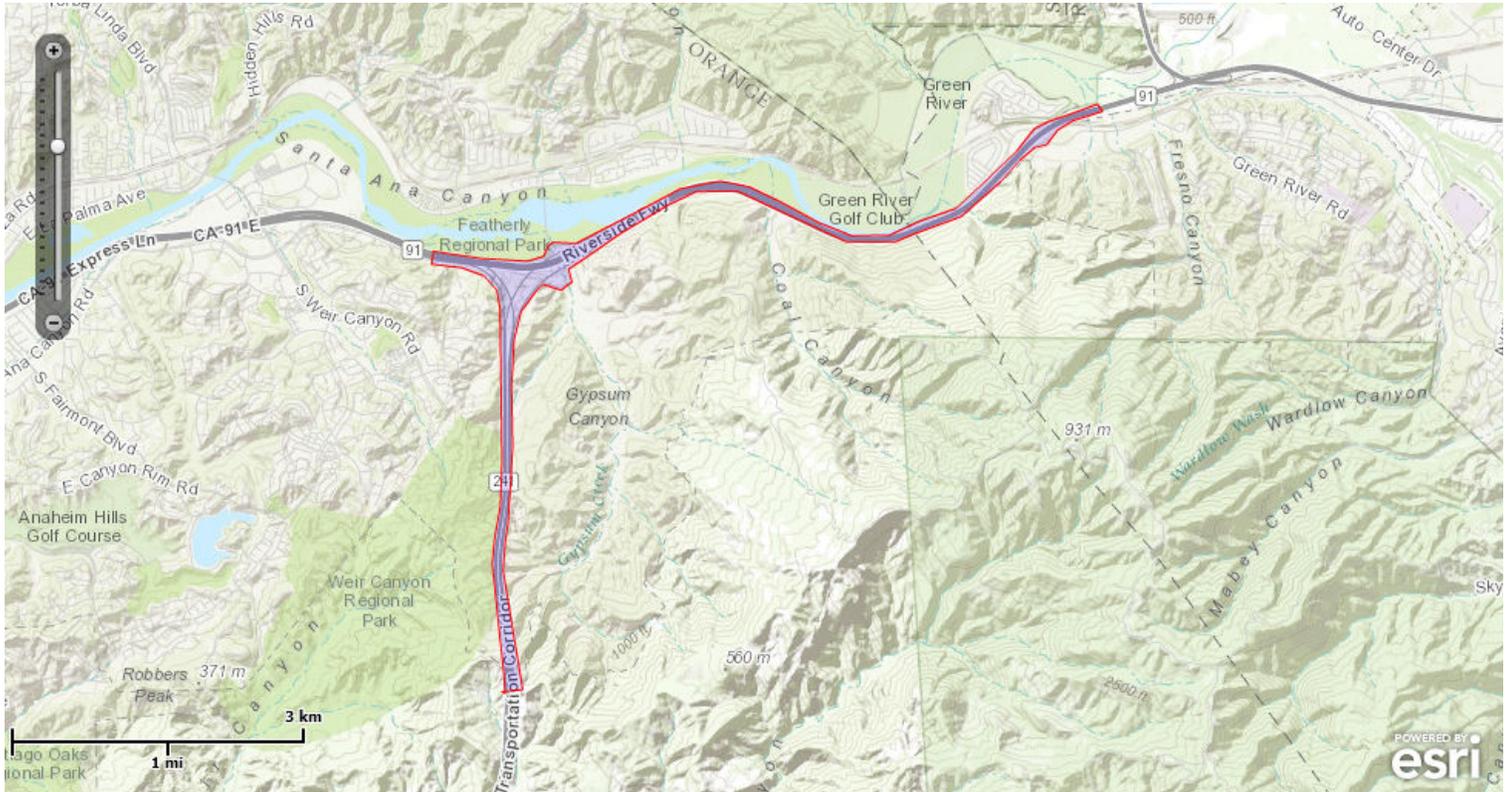
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: SR-241/SR-91 Express Lanes Connector

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-117.71730679 33.82693942, -117.717303 33.8268166, -117.7176056 33.8269075, -117.71730679 33.82693942)), ((-117.71730679 33.82693942, -117.7173459 33.828207, -117.7182042 33.8348377, -117.7186763 33.8387944, -117.7184188 33.8411827, -117.7177751 33.8441768, -117.7176056 33.848224, -117.717818 33.8623887, -117.7181613 33.8640992, -117.7196204 33.8654533, -117.7221095 33.8662017, -117.7254569 33.8665224, -117.7252402 33.8677339, -117.7234421 33.8674845, -117.7198157 33.8670569, -117.7147281 33.8668075, -117.7129256 33.8672707, -117.7124536 33.8682328, -117.7118957 33.8685535, -117.7093637 33.8684466, -117.7028835 33.871226, -117.6977336 33.8735064, -117.6932704 33.874219, -117.6900089 33.8736846, -117.6867902 33.8724018, -117.6822841 33.8703708, -117.6785934 33.8691593, -117.6743877 33.8692305, -117.6710403 33.8705133, -117.6670062 33.8716892, -117.6642596 33.8737915, -117.6602256 33.8769982, -117.6582086 33.8791003, -117.6566636 33.8797417, -117.654475 33.8803473, -117.6512134 33.8813449, -117.6506555 33.8806698, -117.65396 33.8798147, -117.6556337 33.8789543, -117.6568782 33.8776057, -117.6582086 33.8773189, -117.6598823 33.8761449, -117.6619851



United States Department of Interior
Fish and Wildlife Service

Project name: SR-241/SR-91 Express Lanes Connector

33.8741852, -117.6664054 33.8709427, -117.6713836 33.8694105, -117.6737869 33.8685909, -
117.67928 33.8686266, -117.6913821 33.8732944, -117.693485 33.8732926, -117.696017
33.8732231, -117.699064 33.8720117, -117.7043855 33.869357, -117.7080762 33.867219, -
117.7101791 33.8660413, -117.7097928 33.8648654, -117.7110374 33.8641188, -117.7130544
33.8646533, -117.713741 33.8640814, -117.7154577 33.8621571, -117.7162301 33.8595912, -
117.7164447 33.8563304, -117.7165305 33.8554751, -117.7164018 33.8496319, -117.7169168
33.842555, -117.7172172 33.8409866, -117.7174747 33.8382063, -117.715286 33.8271553, -
117.71730679 33.82693942)))

Project Counties: Orange, CA | Riverside, CA



United States Department of Interior
Fish and Wildlife Service

Project name: SR-241/SR-91 Express Lanes Connector

Endangered Species Act Species List

There are a total of 11 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
arroyo toad (<i>Anaxyrus californicus</i>) Population: Entire	Endangered	Final designated	
Birds			
Coastal California gnatcatcher (<i>Polioptila californica californica</i>) Population: Entire	Threatened	Final designated	
Least Bell's vireo (<i>Vireo bellii pusillus</i>) Population: Entire	Endangered	Final designated	
Southwestern Willow flycatcher (<i>Empidonax traillii extimus</i>) Population: Entire	Endangered	Final designated	
Crustaceans			
Riverside fairy shrimp (<i>Streptocephalus woottoni</i>) Population: Entire	Endangered	Final designated	
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	Endangered	Final designated	



United States Department of Interior
Fish and Wildlife Service

Project name: SR-241/SR-91 Express Lanes Connector

Fishes			
Santa Ana sucker (<i>Catostomus santaanae</i>) Population: 3 CA river basins	Threatened	Final designated	
Flowering Plants			
Braunton's milk-vetch (<i>Astragalus brauntonii</i>)	Endangered	Final designated	
Thread-Leaved brodiaea (<i>Brodiaea filifolia</i>)	Threatened	Final designated	
Insects			
Delhi Sands flower-loving fly (<i>Rhaphiomidas terminatus abdominalis</i>) Population: Entire	Endangered		
Quino Checkerspot butterfly (<i>Euphydryas editha quino</i> (= <i>e. e. wrighti</i>)) Population: Entire	Endangered	Final designated	



United States Department of Interior
Fish and Wildlife Service

Project name: SR-241/SR-91 Express Lanes Connector

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Coastal California gnatcatcher (<i>Polioptila californica californica</i>) Population: Entire	Final designated

Appendix I. Representative Site Photographs

This page intentionally left blank



View to the east of the WB SR-91 connector to SR-241 (left bridge) and the SR-241 connector to the EB SR-91 (right bridge).



View to the west of SR-91 and the EB SR-91 connector to the SB SR-241 (bridge). The WB SR-91 connector to SB SR-241 is on the left.

Appendix I
Sheet 1 of 2

SR-241/SR-91 Express Lanes Connector Project
Representative Site Photographs



View to the north of WB SR-91 connector to SR-241.



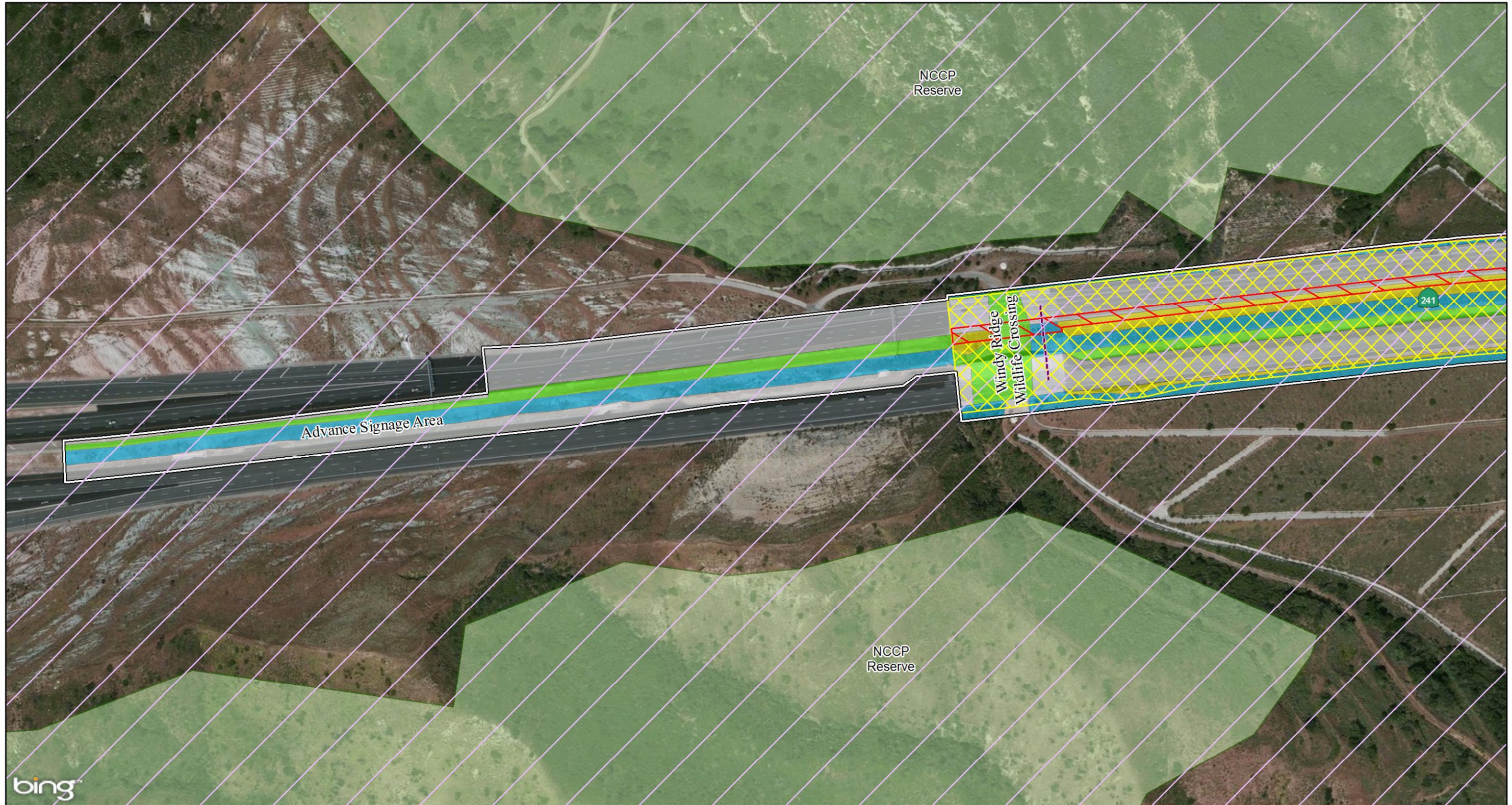
View to the south of the SR-241 taken from south of the SR-241/SR-91 interchange. The median had nesting California gnatcatchers in 2011 and is the location of Drainage 2 (right).

Appendix I
Sheet 2 of 2

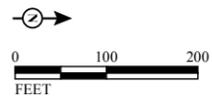
SR-241/SR-91 Express Lanes Connector Project
Representative Site Photographs

Appendix J. Project Impacts to Biological Resources Map

This page intentionally left blank



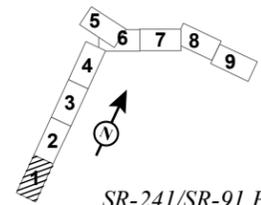
bing™



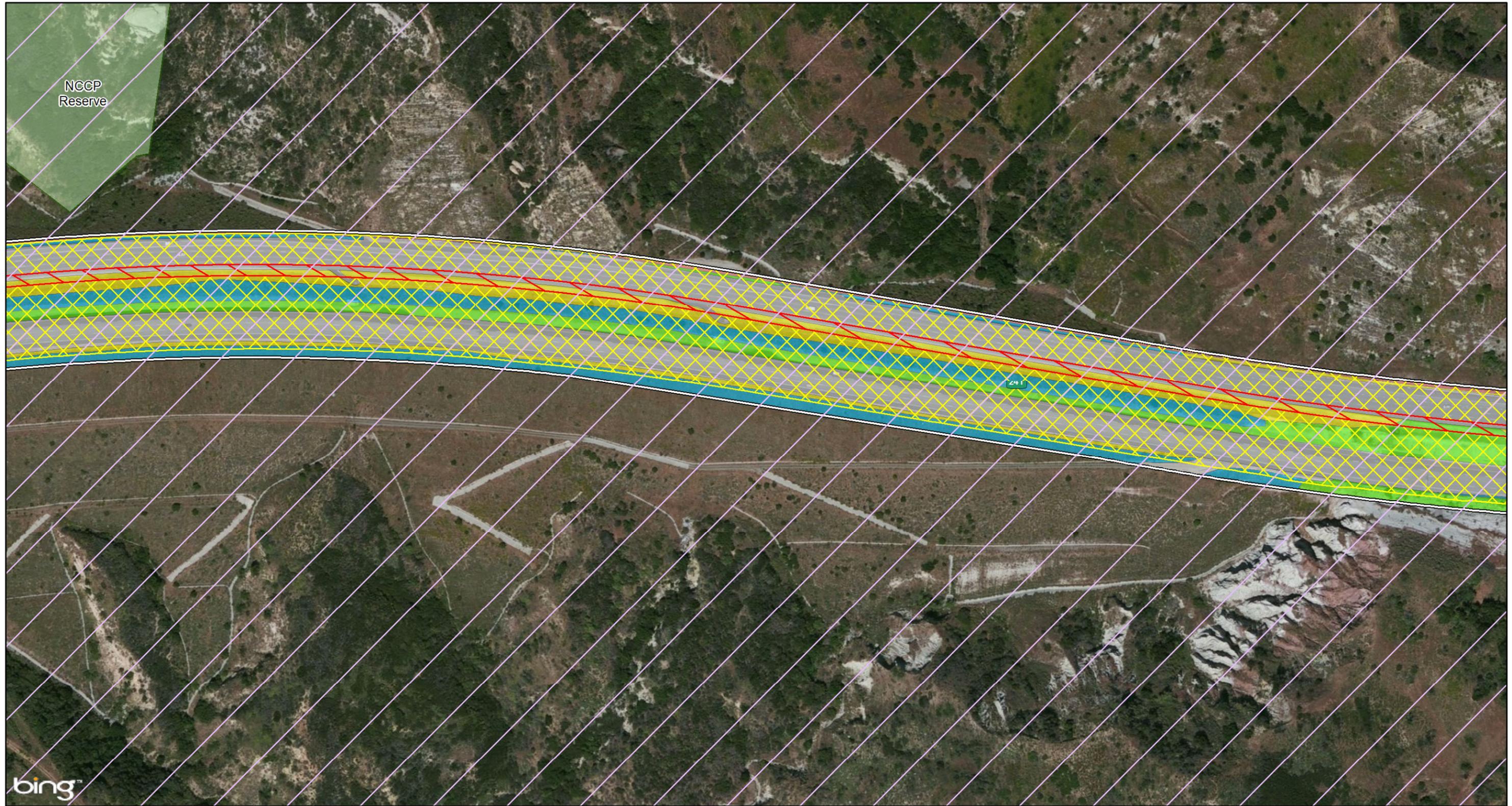
SOURCE: Eagle Aerial (2011); USFWS (2011); RBF (12/2014)
 I:\RBF1101\GIS\Impacts_Bio_Map.mxd (10/22/2015)

- | | | | | |
|--------------------------|---------------------|------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------|
| Biological Study Area | Developed | Drainage Feature (with ID#) | Potential Bat Roosting Sites | Coastal Cactus Wren Nest Remnants |
| Plant Communities | Nonnative Grassland | CDFW Jurisdiction | California Black Walnut Observed | CAGN Designated Critical Habitat |
| Bare Ground | Oak Woodland | USACE Jurisdiction | Coast Live Oak Tree | Braunton's Milk-vetch Designated Critical Habitat |
| Chaparral | Ruderal | Potential Jurisdictional Nonwetland Waters | Western Sycamore Tree | Santa Ana Sucker Designated Critical Habitat |
| Coastal Sage Scrub | Permanent Impacts | Potential Nonjurisdictional Nonwetland Waters | Coulter's Matilija Poppy Observed | NCCP Plan Area |
| | Temporary Impacts | Approved Nonjurisdictional Nonwetland Waters | CAGN Use Area Observed | NCCP Reserve |
| | | Potential Jurisdictional Nonwetland Waters Drainage Impact Areas | Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting | NCCP Existing Use Area |

Note: There are no biological resource impacts in the Advance Signage area along SR-91.



SR-241/SR-91 Express Lanes Connector
 Project Impacts to Biological Resources



bing™

- Biological Study Area
- Plant Communities
- Bare Ground
- Chaparral
- Coastal Sage Scrub

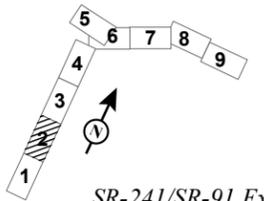
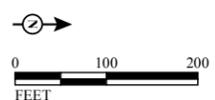
- Developed
- Nonnative Grassland
- Oak Woodland
- Ruderal
- Permanent Impacts
- Temporary Impacts

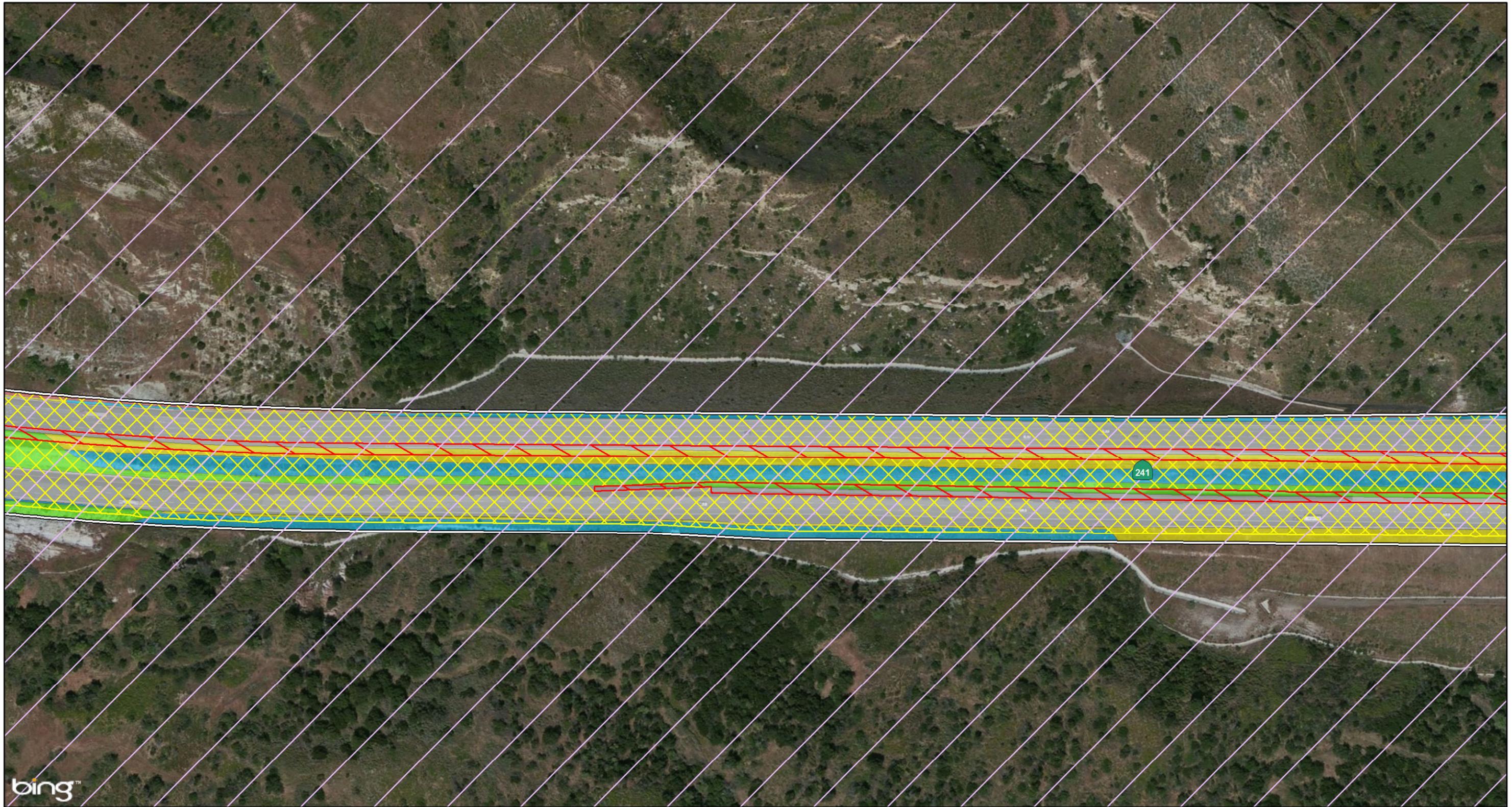
- Drainage Feature (with ID#)
- CDFW Jurisdiction
- USACE Jurisdiction
- Potential Jurisdictional Nonwetland Waters
- Potential Nonjurisdictional Nonwetland Waters
- Approved Nonjurisdictional Nonwetland Waters
- Potential Jurisdictional Nonwetland Waters Drainage Impact Areas

- Potential Bat Roosting Sites
- California Black Walnut Observed
- Coast Live Oak Tree
- Western Sycamore Tree
- Coulter's Matilija Poppy Observed
- CAGN Use Area Observed
- Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting

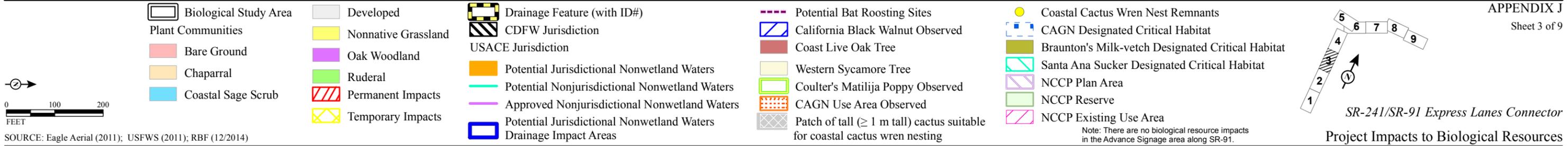
- Coastal Cactus Wren Nest Remnants
- CAGN Designated Critical Habitat
- Braunton's Milk-vetch Designated Critical Habitat
- Santa Ana Sucker Designated Critical Habitat
- NCCP Plan Area
- NCCP Reserve
- NCCP Existing Use Area

Note: There are no biological resource impacts in the Advance Signage area along SR-91.

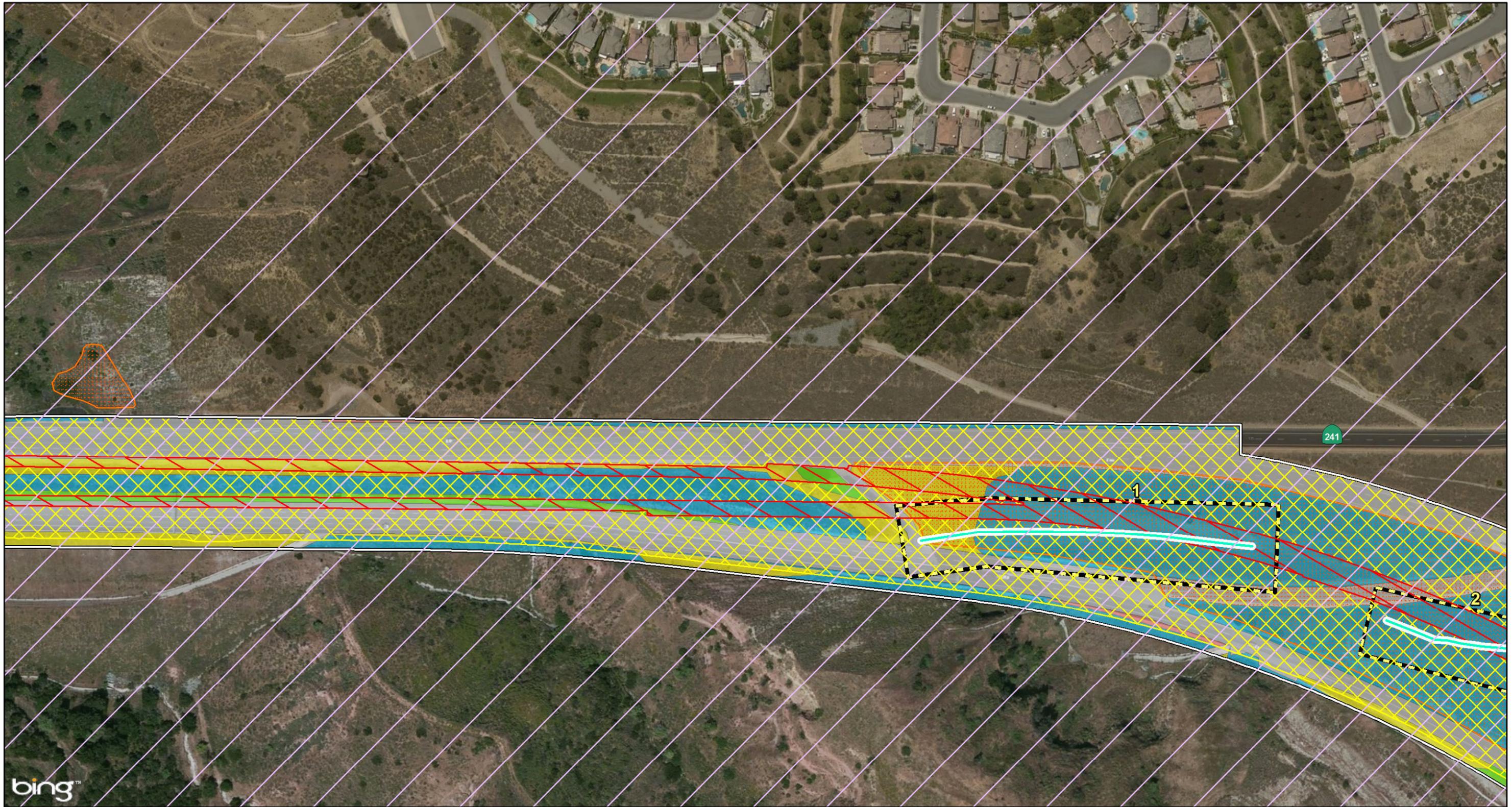




bing™



SOURCE: Eagle Aerial (2011); USFWS (2011); RBF (12/2014)
I:\RBF1101\GIS\Impacts_Bio_Map.mxd (10/22/2015)



bing™

- Biological Study Area
- Plant Communities
- Bare Ground
- Chaparral
- Coastal Sage Scrub

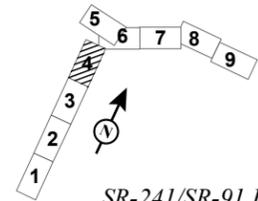
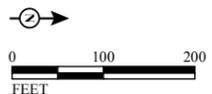
- Developed
- Nonnative Grassland
- Oak Woodland
- Ruderal
- Permanent Impacts
- Temporary Impacts

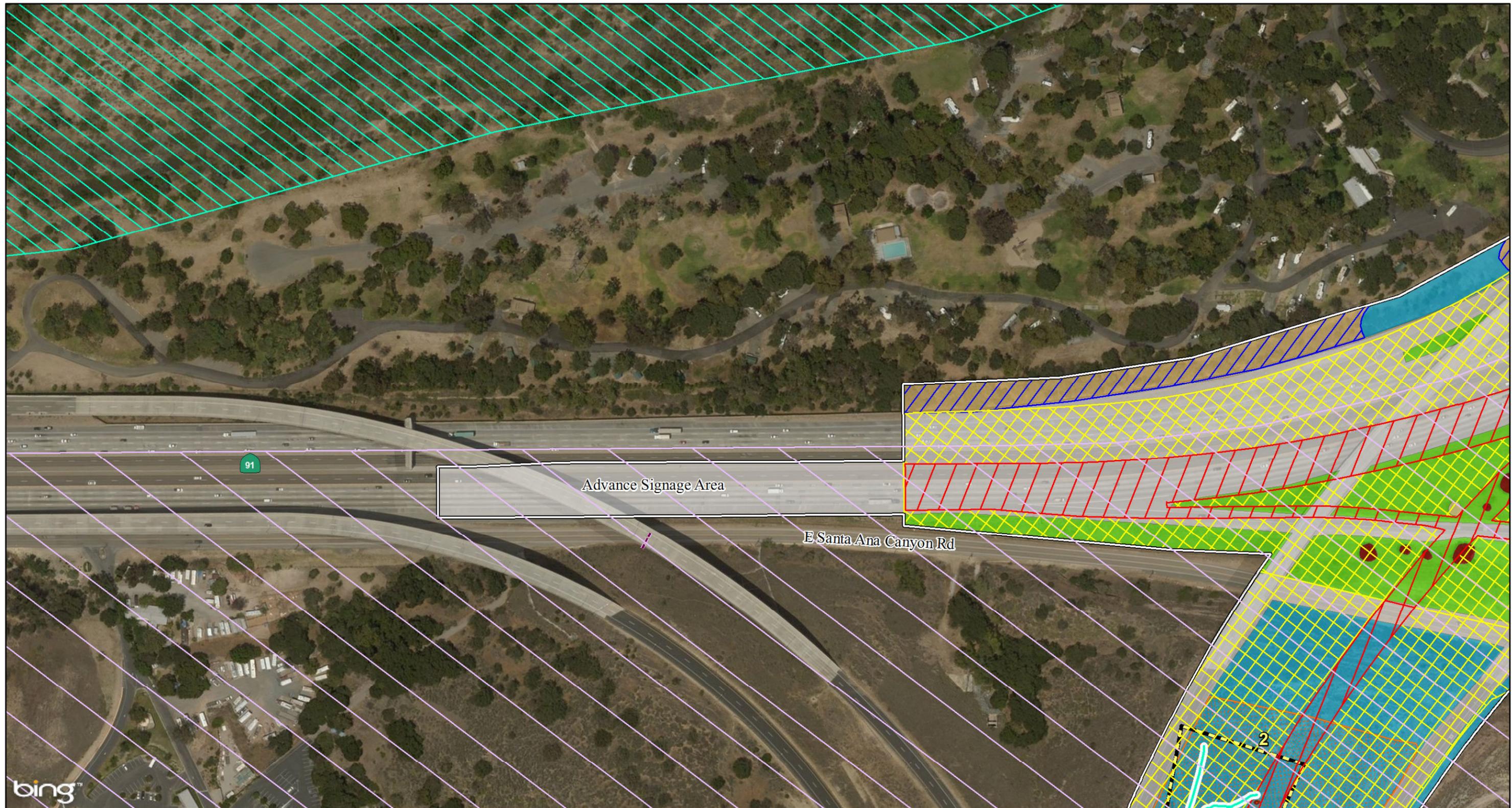
- Drainage Feature (with ID#)
- CDFW Jurisdiction
- USACE Jurisdiction
- Potential Jurisdictional Nonwetland Waters
- Potential Nonjurisdictional Nonwetland Waters
- Approved Nonjurisdictional Nonwetland Waters
- Potential Jurisdictional Nonwetland Waters
- Drainage Impact Areas

- Potential Bat Roosting Sites
- California Black Walnut Observed
- Coast Live Oak Tree
- Western Sycamore Tree
- Coulter's Matilija Poppy Observed
- CAGN Use Area Observed
- Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting

- Coastal Cactus Wren Nest Remnants
- CAGN Designated Critical Habitat
- Braunton's Milk-vetch Designated Critical Habitat
- Santa Ana Sucker Designated Critical Habitat
- NCCP Plan Area
- NCCP Reserve
- NCCP Existing Use Area

Note: There are no biological resource impacts in the Advance Signage area along SR-91.





- Biological Study Area
- Plant Communities**
- Bare Ground
- Chaparral
- Coastal Sage Scrub

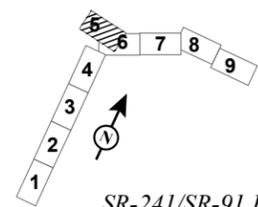
- Developed
- Nonnative Grassland
- Oak Woodland
- Ruderal
- Permanent Impacts
- Temporary Impacts

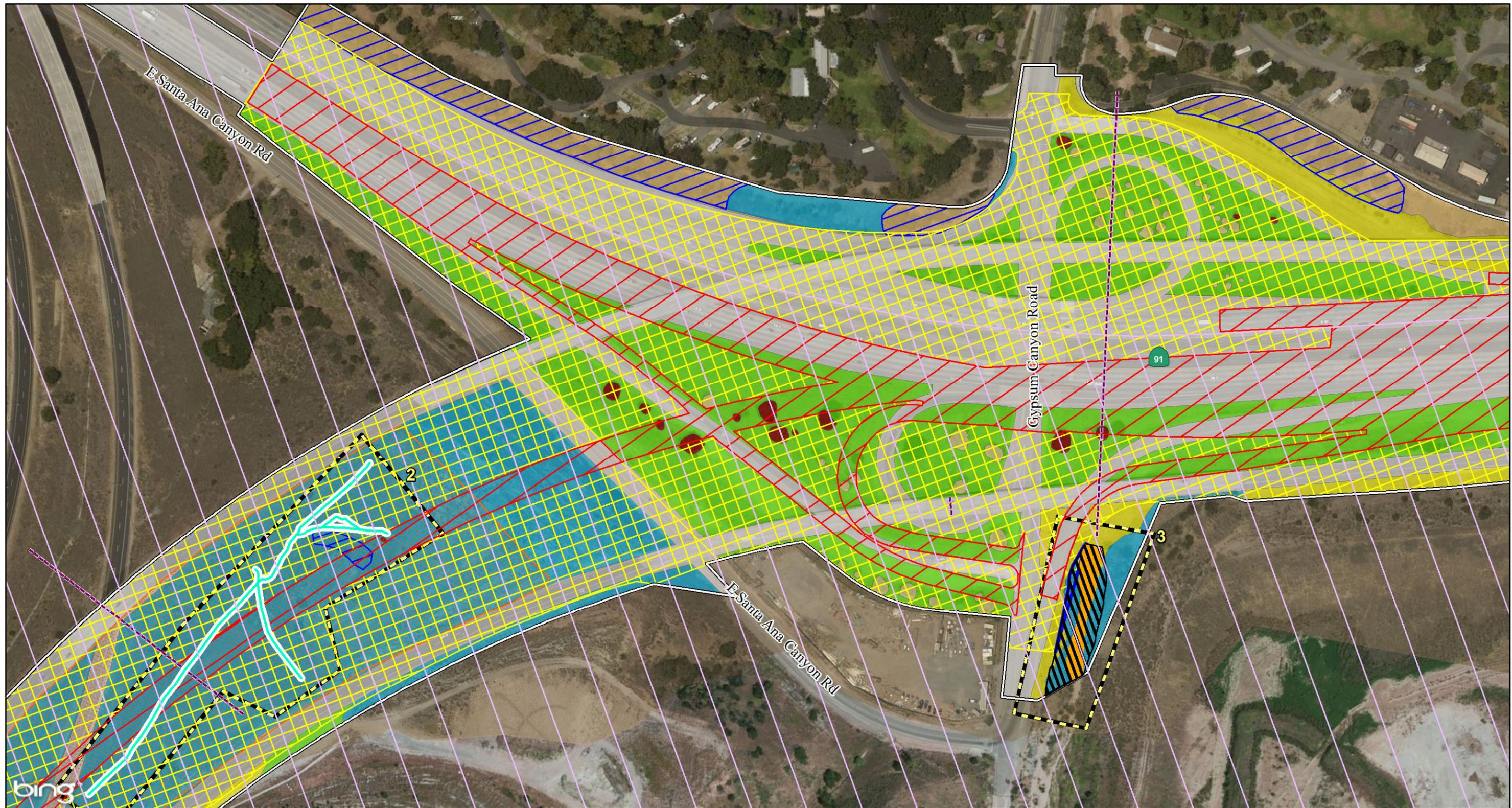
- Drainage Feature (with ID#)
- CDFW Jurisdiction
- USACE Jurisdiction**
- Potential Jurisdictional Nonwetland Waters
- Potential Nonjurisdictional Nonwetland Waters
- Approved Nonjurisdictional Nonwetland Waters
- Potential Jurisdictional Nonwetland Waters Drainage Impact Areas

- Potential Bat Roosting Sites
- California Black Walnut Observed
- Coast Live Oak Tree
- Western Sycamore Tree
- Coulter's Matilija Poppy Observed
- CAGN Use Area Observed
- Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting

- Coastal Cactus Wren Nest Remnants
- CAGN Designated Critical Habitat
- Braunton's Milk-vetch Designated Critical Habitat
- Santa Ana Sucker Designated Critical Habitat
- NCCP Plan Area
- NCCP Reserve
- NCCP Existing Use Area

Note: There are no biological resource impacts in the Advance Signage area along SR-91.





- Biological Study Area
- Plant Communities
- Bare Ground
- Chaparral
- Coastal Sage Scrub

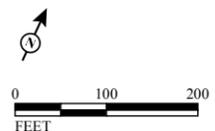
- Developed
- Nonnative Grassland
- Oak Woodland
- Ruderal
- Permanent Impacts
- Temporary Impacts

- Drainage Feature (with ID#)
- CDFW Jurisdiction
- USACE Jurisdiction
- Potential Jurisdictional Nonwetland Waters
- Potential Nonjurisdictional Nonwetland Waters
- Approved Nonjurisdictional Nonwetland Waters
- Potential Jurisdictional Nonwetland Waters Drainage Impact Areas

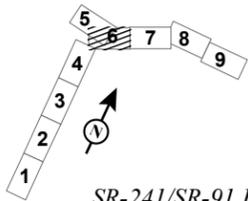
- Potential Bat Roosting Sites
- California Black Walnut Observed
- Coast Live Oak Tree
- Western Sycamore Tree
- Coulter's Matilija Poppy Observed
- CAGN Use Area Observed
- Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting

- Coastal Cactus Wren Nest Remnants
- CAGN Designated Critical Habitat
- Braunton's Milk-vetch Designated Critical Habitat
- Santa Ana Sucker Designated Critical Habitat
- NCCP Plan Area
- NCCP Reserve
- NCCP Existing Use Area

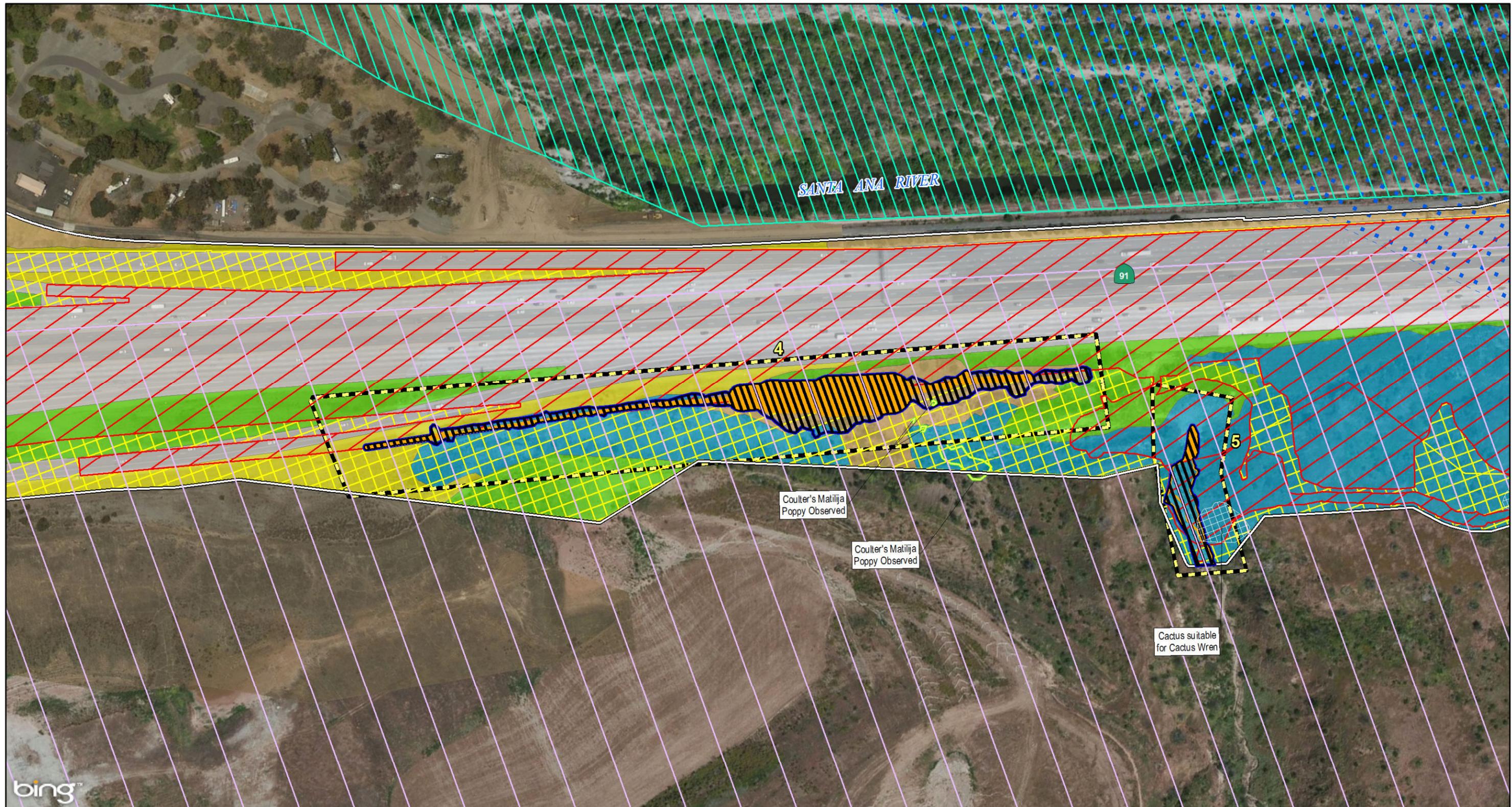
Note: There are no biological resource impacts in the Advance Signage area along SR-91.



SOURCE: Eagle Aerial (2011); USFWS (2011); RBF (12/2014)
 I:\RBF1101\GIS\Impacts_Bio_Map.mxd (10/22/2015)



SR-241/SR-91 Express Lanes Connector
 Project Impacts to Biological Resources



bing™

- Biological Study Area
- Plant Communities**
- Bare Ground
- Chaparral
- Coastal Sage Scrub

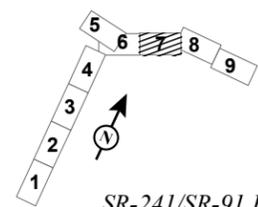
- Developed
- Nonnative Grassland
- Oak Woodland
- Ruderal
- Permanent Impacts
- Temporary Impacts

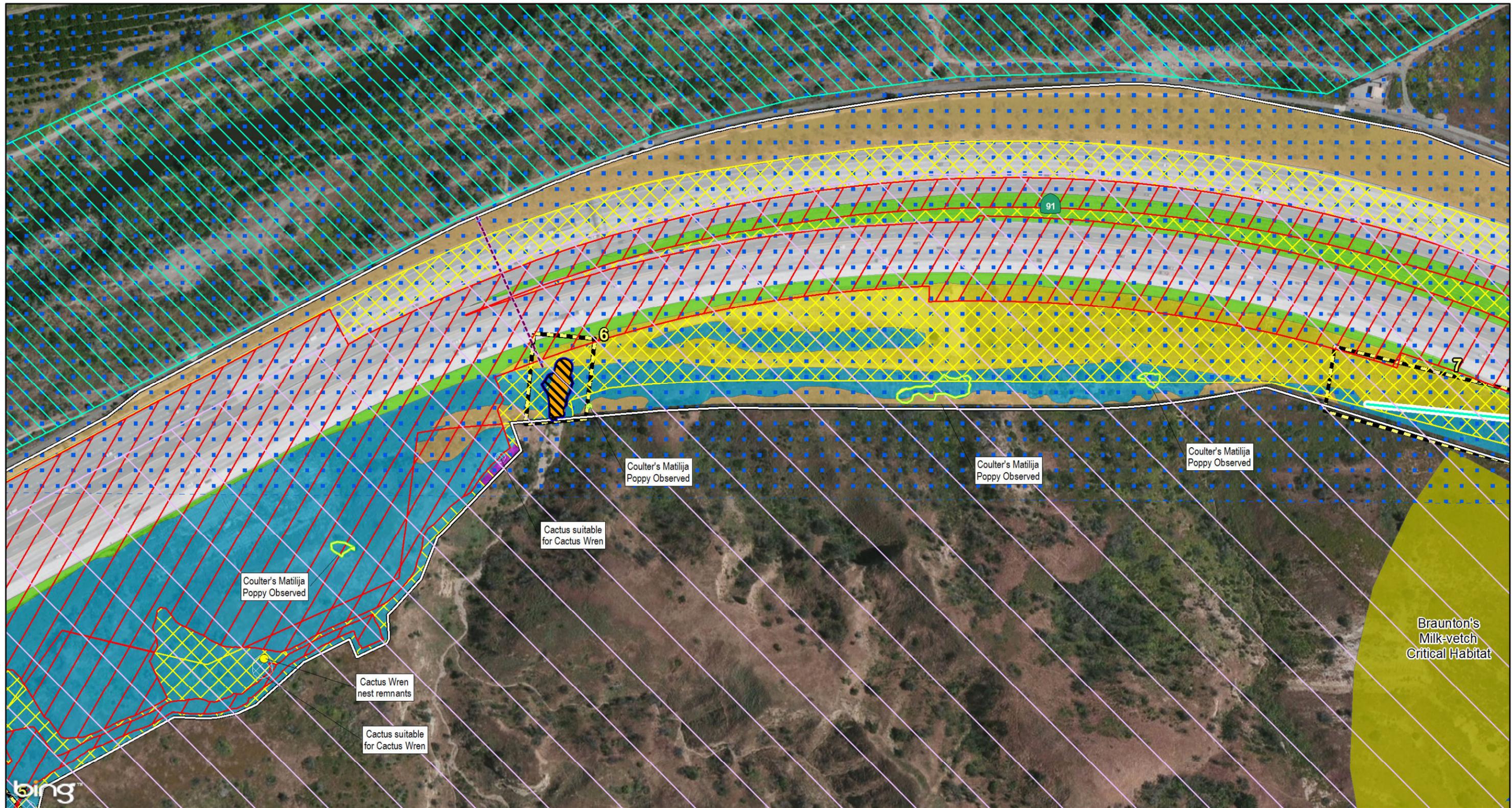
- Drainage Feature (with ID#)
- CDFW Jurisdiction
- USACE Jurisdiction**
- Potential Jurisdictional Nonwetland Waters
- Potential Nonjurisdictional Nonwetland Waters
- Approved Nonjurisdictional Nonwetland Waters
- Potential Jurisdictional Nonwetland Waters Drainage Impact Areas

- Potential Bat Roosting Sites
- California Black Walnut Observed
- Coast Live Oak Tree
- Western Sycamore Tree
- Coulter's Matilija Poppy Observed
- CAGN Use Area Observed
- Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting

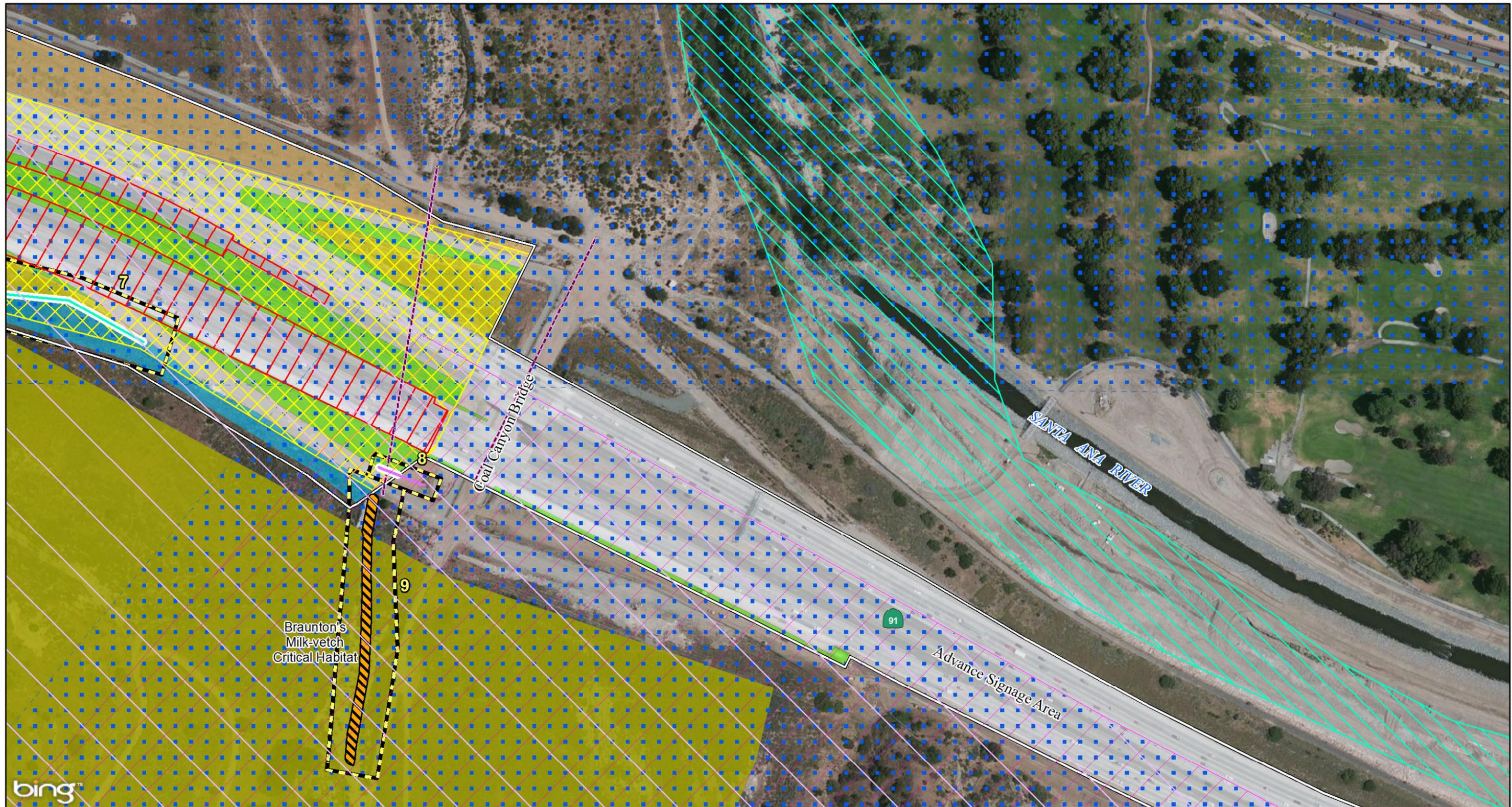
- Coastal Cactus Wren Nest Remnants
- CAGN Designated Critical Habitat
- Braunton's Milk-vetch Designated Critical Habitat
- Santa Ana Sucker Designated Critical Habitat
- NCCP Plan Area
- NCCP Reserve
- NCCP Existing Use Area

Note: There are no biological resource impacts in the Advance Signage area along SR-91.



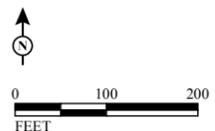


	Biological Study Area Plant Communities Bare Ground Chaparral Coastal Sage Scrub	Developed Nonnative Grassland Oak Woodland Ruderal Permanent Impacts Temporary Impacts	Drainage Feature (with ID#) CDFW Jurisdiction USACE Jurisdiction Potential Jurisdictional Nonwetland Waters Potential Nonjurisdictional Nonwetland Waters Approved Nonjurisdictional Nonwetland Waters Potential Jurisdictional Nonwetland Waters Drainage Impact Areas	Potential Bat Roosting Sites California Black Walnut Observed Coast Live Oak Tree Western Sycamore Tree Coulter's Matilija Poppy Observed CAGN Use Area Observed Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting	Coastal Cactus Wren Nest Remnants CAGN Designated Critical Habitat Braunton's Milk-vetch Designated Critical Habitat Santa Ana Sucker Designated Critical Habitat NCCP Plan Area NCCP Reserve NCCP Existing Use Area <p>Note: There are no biological resource impacts in the Advance Signage area along SR-91.</p>	<p>APPENDIX J Sheet 8 of 9</p> <p>SR-241/SR-91 Express Lanes Connector Project Impacts to Biological Resources</p>
--	----------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------

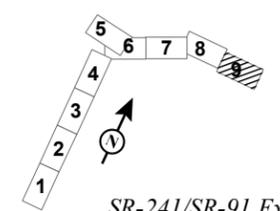


bing™

- | | | | | |
|-----------------------|---------------------|------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------|
| Biological Study Area | Developed | Drainage Feature (with ID#) | Potential Bat Roosting Sites | Coastal Cactus Wren Nest Remnants |
| Plant Communities | Nonnative Grassland | CDFW Jurisdiction | California Black Walnut Observed | CAGN Designated Critical Habitat |
| Bare Ground | Oak Woodland | USACE Jurisdiction | Coast Live Oak Tree | Braunton's Milk-vetch Designated Critical Habitat |
| Chaparral | Ruderal | Potential Jurisdictional Nonwetland Waters | Western Sycamore Tree | Santa Ana Sucker Designated Critical Habitat |
| Coastal Sage Scrub | Permanent Impacts | Potential Nonjurisdictional Nonwetland Waters | Coulter's Matilija Poppy Observed | NCCP Plan Area |
| | Temporary Impacts | Approved Nonjurisdictional Nonwetland Waters | CAGN Use Area Observed | NCCP Reserve |
| | | Potential Jurisdictional Nonwetland Waters Drainage Impact Areas | Patch of tall (≥ 1 m tall) cactus suitable for coastal cactus wren nesting | NCCP Existing Use Area |



SOURCE: Eagle Aerial (2011); USFWS (2011); RBF (12/2014)
 I:\RBF1101\GIS\Impacts_Bio_Map.mxd (10/22/2015)



APPENDIX J
 Sheet 9 of 9

SR-241/SR-91 Express Lanes Connector
 Project Impacts to Biological Resources

Note: There are no biological resource impacts in the Advance Signage area along SR-91.