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Memorandum

To: Division Chief, Section 7, Section 10, and Habitat Conservation, Region 8
Sacramento, California

From: Field Supervisor, Carlsbad Fish and Wildlife Office
Carlsbad, California

Subject: Reinitiation of Consultation and Amendment to the Biological Opinion Regarding Issuance of an Endangered Species Act Section 10(a)(1)(B) Permit (TE088609-1) for the Western Riverside County Multiple Species Conservation Plan, Riverside County, California

This document amends the U.S. Fish and Wildlife Service's (Service) biological and conference opinion (FWS-WRIV-870.19) dated June 22, 2004 ("2004 biological opinion") (Service 2004), regarding the issuance of an incidental take permit (Permit) for implementation of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP or Plan) pursuant to section 10(a)(1)(B) of the Act. Intra-Service consultation regarding issuance of the Permits was conducted in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*).

This amendment addresses the direct and indirect effects of habitat loss and disturbance associated with urban development and other proposed activities (i.e., Covered Activities) resulting from MSHCP implementation on the designated critical habitat for federally endangered arroyo toad [*Anaxyrus californicus* (= *Bufo microscaphus c.*)], the federally threatened Santa Ana sucker, (*Catostomus santaanae*), federally endangered Quino checkerspot butterfly, (*Euphydryas editha quino*), federally endangered San Diego ambrosia (*Ambrosia pumila*, "ambrosia"), federally threatened spreading navarretia (*Navarretia fossalis*, "navarretia"), and federally threatened thread-leaved brodiaea (*Brodiaea filifolia*, "brodiaea").

A single Permit was issued to 21 permittees; in 2009 two additional permittees were added to the Permit. In 2009, a minor amendment to the Plan was adopted to correct the formula used for reserve assembly accounting (the Rough-Step Formula, MSHCP Section 6.7) and to document the accounting of lands acquired for conservation prior to Plan adoption. The MSHCP permittees are the County of Riverside (County); Riverside County Flood Control District (County Flood Control); Riverside County Parks and Open Space District (County Parks); Riverside County Waste Management District (County Waste); the cities of Banning, Beaumont, Calimesa, Canyon Lake, Corona, Hemet, Lake Elsinore, Menifee, Moreno Valley, Murrieta,

Norco, Perris, Riverside, San Jacinto, Temecula and Wildomar (Cities); Riverside County Transportation Commission (RCTC); California State Parks Department (State Parks); and California Department of Transportation (Caltrans), California Department of Parks and Recreation, and the Western Riverside County Regional Conservation Authority (RCA). The Plan establishes a multi-species conservation program to minimize and mitigate the expected loss of habitat values and the incidental take of certain species. The 2004 biological opinion addressed 14 federally listed animals, 11 federally listed plants, and 121 unlisted plants and animals for a total of 146 Covered Species. Critical habitat designations for four species, the federally threatened coastal California gnatcatcher (*Polioptila californica californica*, “gnatcatcher”), federally endangered least Bell’s vireo (*Vireo bellii pusillus*), Quino checkerspot butterfly, and federally endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*, “SBKR”) were also addressed. The critical habitat designations for gnatcatcher, SBKR and Quino checkerspot butterfly have been revised since the 2004 biological opinion.

Critical habitat has been designated for the federally endangered Munz’s onion (*Allium munzii*), federally endangered Nevin’s barberry (*Berberis nevinii*), the federally endangered mountain yellow-legged frog, (*Rana mucosa*, “MYLF”) and the federally endangered southwestern willow flycatcher, (*Empidonax traillii extimus*, “flycatcher”) on Federal lands in western Riverside County (the Plan Area) since the release of the 2004 biological opinion. The MSHCP Permit does not provide for any covered activity or “take” on Federal lands, therefore implementation of the MSHCP will not affect critical habitat designated for Munz’s onion, brodiaea, Nevin’s barberry, MYLF, or flycatcher.

The revised designation of critical habitat for gnatcatcher was published on December 19, 2007 (72 FR 72010). Gnatcatcher Critical Habitat Unit 10 includes approximately 27,529 acres (ac) the majority of which is under private and Federal (USFS, BLM) ownership. Of this total, 21,776 ac are in the MSHCP Plan Area and approximately 5,757 ac are within southern San Bernardino County adjacent to the Plan Area. Of the 21,776 ac in MSHCP Plan Area designated as gnatcatcher critical habitat, 10,176 ac are owned by the Metropolitan Water District, who is not an MSHCP permittee. An additional 199 ac of private land in the Plan Area were also included in the final designation. These 199 ac are covered under a settlement agreement and Memorandum of Understanding (MOU) signed on February 24, 2004, by the County and several property owners, including Murdock Alberhill, the owner of these 199 ac, which specifically exempts and excludes these landowners’ properties from the MSHCP (County of Riverside 2004). Therefore, the 199 ac owned by Murdock Alberhill are not subject to the requirements of the MSHCP. The remaining 11,401 ac designated in the MSHCP Plan Area are federally owned and managed by the Bureau of Land Management (BLM) or U.S. Forest Service. We concluded in the 2004 biological opinion that the effects of issuing the MSHCP Permit on designated critical habitat for the coastal California gnatcatcher, together with the offsetting land conservation and adaptive management prescriptions, do not appreciably diminish the value of the primary constituent elements essential to the species’ conservation. No further analysis is necessary because the entirety of the 2007 critical habitat designation is within the area that was designated as gnatcatcher critical habitat in 2000 and was addressed in the 2004 biological opinion.

On October 10, 2008, revised final SBKR critical habitat was designated (73 FR 61936). On January 11, 2011, the U.S. District Court, Central District of California, Eastern Division vacated the 2008 designation and reinstated the 2002 SBKR critical habitat designation (67 FR19812) pending the consideration of a second revision of critical habitat for SBKR. Because the 2002 designation was in effect when the MSHCP permit application was made and was addressed in the 2004 biological opinion, no further analysis is necessary. Since the 2004 biological opinion, we have issued one non-jeopardy/no adverse modification biological opinion for SBKR and its critical habitat in the Plan Area. On April 20, 2010, we issued an opinion to the U.S. Army Corps of Engineers for the Eastern Municipal Water District's Hemet-San Jacinto Integrated Recharge and Recovery Program (Service 2010a). This action will result in the loss of approximately 30 ac SBKR critical habitat. However, as stated in our biological opinion (Service 2010) the ecological function and value of critical habitat will remain because habitat will continue to be maintained and rejuvenated over time, and the natural fluvial processes of the stream channel will continue to function, the remaining 479 ac of this critical habitat unit will continue its conservation role for SBKR.

Consultation History

The Plan was completed in June 2003. The 2004 biological opinion addressing issuance of the Permit and the effects of Plan implementation on 146 species and associated designated critical habitat was completed on June 22, 2004. The Permit was issued on the same date.

Final revised critical habitat for Quino checkerspot butterfly was designated June 17, 2009 (74 FR 28776). Final revised critical habitat for navarretia was designated October 7, 2010 (75 FR 62192). Critical habitat for ambrosia was designated on November 30, 2010 (75 FR 74546). Revised critical habitat for the Santa Ana sucker was designated December 14, 2010 (75 FR 77962). The revised final critical habitat rule for brodiaea was published on February 8, 2011 (76 FR 6848). The rule revising critical habitat for arroyo toad was published February 9, 2011 (76 FR 7245).

We reinitiated intra-Service section 7 consultation on March 30, 2011, to address effects to critical habitat for these species resulting from implementation of the Plan consistent with the existing Permit. A draft biological opinion was provided to the RCA on May 27, 2011. The RCA notified us via telephone on August 24, 2011, that they had no comments on the draft biological Opinion. The complete project file for this reinitiated consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Plan Area and project description remain unchanged from that described in the 2004 biological opinion.

Action Area

According to 50 CFR § 402.02 pursuant to section 7 of the Act, the “action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area. As described in the 2004 biological opinion, the action is generally defined as the Plan Area.

Santa Ana Sucker Critical Habitat Subunit 1C on the lower Santa Ana River extends from the Plan Area into Orange County and as such the direct and indirect effects from MSHCP implementation may extend into Orange County. Sucker critical Habitat Subunit 1B is designated in San Bernardino and Riverside counties; however, we do not expect the effects of the action to extend into San Bernardino County because it is upstream of the Plan Area. Arroyo toad critical Habitat Unit 13 is likewise designated in Riverside and San Diego counties. The San Diego County portion is upstream of the Riverside County portion and we do not expect the direct or indirect effects of Plan implementation to affect arroyo toad critical habitat in San Diego County.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions that are contemporaneous with the consultation in progress.

The 2004 biological opinion was completed in June 2004. Since that time, numerous covered activities have been implemented consistent with the Plan including conservation and development. The following significant actions have occurred in the Plan Area since the 2004 biological opinion was issued:

Approximately 40,000 ac have been acquired for conservation and management to fulfill the requirement of obtaining 153,000 ac of new conservation under the Plan. Approximately 60,000 acres have been subjected to commercial or urban development, placement of single family homes or new agricultural activity consistent with the Plan. Major infra-structure projects that have been completed under the Plan include Van Buren Bridge Replacement Project, River Road Bridge Replacement Project, Interstate 10 San Timoteo Creek Bridge Repair and Widening, and Eastbound State Route 91 Lane Addition and State Route 71 Widening.

CRITICAL HABITAT EVALUATIONS

The MSHCP Conservation Area (500,000 ac) will be comprised of approximately 153,000 ac of Additional Reserve Lands (e.g. new conservation lands) and 347,000 ac of existing Public/Quasi-Public lands (PQP Lands) (MSHCP Figure 3-1). The PQP Lands provide habitat to

support the long-term conservation of Covered Species and such lands will be managed consistent with the biological and species-specific conservation goals and objectives identified in the MSHCP. MSHCP Covered Activities are not expected to occur within PQP Lands and the MSHCP does not provide for “take” of Covered Species on PQP lands. In the event that a Permittee elects to use PQP Lands in a way that alters the land use such that it will not contribute to reserve assembly the Permittee must locate and acquire or otherwise encumber replacement acreage at a minimum ratio of 1:1 taking into account direct and indirect effects of PQP Lands in one location with PQP Lands in another location. Procedures for Covered Activities that affect PQP Lands are discussed on page 33 of the 2004 biological opinion. A discussion of PQP Lands and their role in the MSHCP conservation strategy begins on page 47 of the 2004 biological opinion.

The direct and indirect effects of MSHCP implementation are addressed in our 2004 biological opinion beginning on page 69. The assumptions enumerated, beginning on page 74, are still in effect. The status, environmental baseline, and the direct, indirect and cumulative effects of MSHCP implementation are presented in the 2004 biological opinion beginning on page 151. Policies and procedures included in the MSHCP to avoid and minimize take of Covered Species (Conservation Measures) are discussed beginning on page 26 of the 2004 biological opinion. The effects of those Conservation Measures on the Covered Species and their respective habitats are presented beginning on page 114. The information and analysis for each of the species below amends the information and analysis for those same species presented in the 2004 biological opinion beginning on page 151.

Arroyo Toad (*Anaxyrus californicus*)

Status of Critical Habitat

Final critical habitat for the arroyo toad was designated on February 9, 2011 (76 FR 7246). Arroyo toad critical habitat is designated in 21 different units from Santa Barbara County south to San Diego County, including units in Ventura, Los Angeles, San Bernardino, Riverside, and Orange counties. The designation includes a total of 98,366 ac of arroyo toad critical habitat.

Consistent with the recovery plan for the arroyo toad (Service 1999), the critical habitat units are grouped into three recovery units: the northern, southern, and desert recovery units. The northern recovery unit consists of units in Santa Barbara, Ventura, and Los Angeles counties. Critical habitat in the northern recovery unit is primarily restricted to Forest Service lands as most of the habitat off of Forest Service land has been lost due to road construction, dams, agriculture, and urbanization.

The desert recovery unit consists of units in Los Angeles and San Bernardino counties. The final rule describes the desert recovery unit as follows: “Each of these units is isolated from each other and from any other recovery units, making the issues of inbreeding, fragmentation, and random negative impacts of great concern. However, this recovery unit also represents unique

ecological conditions for arroyo toads, such as extremes in aridity, heat, and cold, and likely harbors important genetic diversity” (Service 2011a).

The southern recovery unit consists of units in Orange, western Riverside, and San Diego counties. The final rule describes the southern recovery unit as follows: “These critical habitat units consist of a range of geographic locations from coastal regions to interior mountains. Arroyo toads likely occurred throughout each of these river and creek basins, but are now found only in segments of the rivers and creeks due to loss or change of habitat and nonnative predators. Conserving arroyo toad populations in these river basins is necessary for preserving the species’ full range of genetic and phenotypic variation” (Service 2011a). The Plan Area is within the southern recovery unit for arroyo toad.

The primary constituent elements (PCEs) for arroyo toad critical habitat are defined as follows (Service 2011a):

- 1) Rivers or streams with hydrologic regimes that supply water to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads. Breeding pools must persist a minimum of 2 months for the completion of larval development. However, due to the dynamic nature of southern California riparian systems and flood regimes, the location of suitable breeding pools may vary from year to year. Specifically, the conditions necessary to allow for successful reproduction of arroyo toads are:
 - Breeding pools that are less than 6 inches (in) deep;
 - Areas of flowing water with current velocities less than 1.3 feet (ft) per second; and
 - Surface water that lasts for a minimum of 2 months during the breeding season (a sufficient wet period in the spring months to allow arroyo toad larvae to hatch, mature, and metamorphose).
- 2) Riparian and adjacent upland habitats, particularly low-gradient (typically less than 6 percent) stream segments and alluvial streamside terraces with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles; and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground, to provide foraging and living areas for juvenile and adult arroyo toads.
- 3) A natural flooding regime, or one sufficiently corresponding to natural, that: (A) Is characterized by intermittent or near-perennial flow that contributes to the persistence of shallow pools into at least mid-summer; (B) Maintains areas of open, sparsely vegetated, sandy stream channels and terraces by periodically scouring riparian vegetation; and (C) Also modifies stream channels and terraces and redistributes sand and sediment, such that breeding pools and terrace habitats with scattered vegetation are maintained.

- 4) Stream channels and adjacent upland habitats that allow for movement to breeding pools, foraging areas, overwintering sites, upstream and downstream dispersal, and connectivity to areas that contain suitable habitat.

Environmental Baseline

The Plan Area contains Unit 9, portions of Subunits 10a and 11b, and portions of Unit 13 of designated arroyo toad critical habitat. All of the critical habitat units designated in the Plan Area contain the physical and biological features that are essential to the conservation of the species, including aquatic habitat for breeding and non-breeding activities (PCEs 1, 2, and 3) and upland habitat for foraging and dispersal activities (PCE 4). The Plan Area contains a total of 2,735 ac of arroyo toad critical habitat. A total of 10,021 ac of critical habitat was designated in Units 9 and 13 in the Plan Area.

Arroyo toad critical habitat Unit 9, the San Jacinto River Basin, consists of 2,391 ac located in west-central Riverside County and consists of two Subunits (9a and 9b). This unit supports the most northeastern arroyo toad populations within the non-desert portion of the species' range. This unit also is geographically isolated from other known toad populations to the south in the Santa Margarita Watershed, to the west in the San Juan Watershed, and from residual populations to the north in the Santa Ana Watershed. The arroyo toad populations in this unit are important to maintaining the current geographic extent of the species. Subunit 9a encompasses approximately 6.3 miles (mi) of the San Jacinto River from the Sand Canyon confluence downstream to the Soboba Indian Reservation border. The subunit consists of 72 ac of Federal land (BLM and Forest Service) and 1,154 ac of private land. Subunit 9b extends along approximately 7.4 mi of Bautista Creek from near the eastern edge of section 20 (T6S, R2E) downstream to approximately the middle of section 27 (T5S, R1E), where the stream enters a debris basin. Subunit 9b consists of 705 ac of Federal and State land and 461 ac of private land.

Unit 10, the San Juan Creek Basin, is located in southern Orange and southwestern Riverside counties and consists of two subunits (10a and 10b). According to the final rule, "[Unit 10] supports a large arroyo toad population in the San Juan Creek Basin, and arroyo toad populations in this unit may function as an important linkage between toads in Santiago Creek (Unit 8) to the north and the San Mateo Creek Basin (Unit 11) to the south" (Service 2011a). Only a portion of Subunit 10a is within the Plan Area and that portion is in the Cleveland National Forest.

Unit 11, San Mateo Creek Basin is located in northwestern San Diego, southern Orange, and southwestern Riverside counties, which consists of two subunits. According to the final rule, "[Unit 11] supports large arroyo toad populations in close proximity to the coast. Nearly all of the other near-coastal, historical populations of arroyo toad were extirpated due to extensive urbanization and river channelization along the coastal regions of southern California. Distinctive climatic conditions near the coast may provide different selective pressures on toads in this area, and favor specific genetic characteristics that help maintain the genetic diversity of

the species” (Service 2011a). Only a portion of Subunit 11b is in the Plan Area and that portion is in the Cleveland National Forest.

Unit 13, the Upper Santa Margarita River Basin, consists of 7,863 ac. The unit is located in southern Riverside and northern San Diego counties, and it consists of three subunits (13A, 13B and 13C). Approximately 5,289 ac of Unit 13 are in the Plan Area. The final rule indicates that Unit 13 provides potential links to arroyo toad populations in the lower Santa Margarita River Basin (Unit 12) and other nearby drainages containing suitable habitat.

Subunit 13A extends along approximately 7.3 mi of Arroyo Seco Creek from just south of the San Diego-Riverside County boundary downstream to Vail Lake. The portion of Subunit 13A that is in San Diego County is on Forest Service land. In the Plan Area there are 302 ac of Forest Service land and 899 ac of private land in Subunit 13A. Subunit 13B extends along approximately 16.3 mi of Temecula Creek from Dodge Valley in San Diego County downstream to Vail Lake in Riverside County. In the Plan Area, Subunit 13B encompasses 14 ac of Federal land and 2,297 ac of private land. Subunit 13C extends along approximately 6.5 mi of Wilson Creek from the confluence with Cahuilla Creek downstream to Vail Lake in Riverside County. Subunit 13C is entirely within the Plan Area and consists of 1,977 ac of private land.

Effects on Critical Habitat from Plan Implementation

There are 7,449 ac of critical habitat in Units 9 and 13 in the Plan Area. Approximately 6,587 ac (88 percent) of this acreage is on private land (1,614 ac in Unit 9 and 4,973 ac in Unit 13). The remaining 12 percent (862 ac) will remain in the MSHCP Conservation Area and be unaffected by Plan Implementation. We expect 4,533 ac (68 percent) of the critical habitat designated on private land to be conserved and managed by the permittees as Additional Reserve Lands (ARL).

The arroyo toad is an Additional Survey Needs and Procedures species. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for arroyo toad will be conducted as part of the project review process for public and private projects where suitable habitat is present for the species within the survey area for arroyo toad (i.e., San Jacinto River Basin and the Upper Santa Margarita River Basin). The survey areas correspond with the Critical habitat subunits. There are 1,869 ac of privately owned designated critical habitat in the arroyo toad survey area outside of the area expected to be conserved as ARL. Approximately 428 ac of that area is in Unit 9 and 1,441 ac are in Unit 13.

Under the terms of the Additional Survey Needs and Procedures policy, not more than 10 percent of this area will be lost to Plan Implementation. That impact translates into a potential loss of approximately 187 ac of designated arroyo toad critical habitat or just under 3 percent of the designated critical habitat on private lands in the Plan Area. Approximately 183 ac of designated critical habitat exists outside of the ARL and survey area. We expect this area (less than 3 percent of the designated critical habitat for the arroyo toad in the Plan Area) along with up to 187 ac from the survey area will be affected by the Covered Activities proposed under the Plan. In addition, we anticipate that implementation of the Riparian/Riverine Area and Vernal Pools

policy will assist in minimizing effects to arroyo toad breeding habitat (PCE 1, 2, and 3). We expect that most of the critical habitat that is negatively affected by Plan implementation will be upland habitat (PCE 4).

We anticipate that MSHCP implementation will result in the loss of approximately 370 ac of arroyo toad critical habitat as described in the analysis above. This amounts to 5.5 percent of the area designated on private land and less than 5 percent of the designated critical habitat in the Plan Area.

The intended ecological function of arroyo toad critical habitat Unit 9 is to support the populations in the San Jacinto river basin to maintain the current geographical distribution of the species (Service 2011a). Unit 13 was designated to support arroyo toad populations in the Upper Santa Margarita watershed and provide potential links to arroyo toad populations in the lower Santa Margarita River Basin (Unit 12) and other nearby drainages containing suitable habitat. Both of these functions are essential for the long-term survival and recovery of the species and neither will be impaired by the loss of area anticipated to result from implementation of the MSHCP.

Conclusion

Implementation of the MSHCP is anticipated to provide protection and management for 7,079 ac (95 percent) of critical habitat within the Plan Area. The management and monitoring activities discussed in the 2004 biological opinion are anticipated to maintain the important ecological functions and enhance the distribution and abundance of arroyo toad within these areas of critical habitat thereby minimizing the effects of Plan implementation on arroyo toad designated critical habitat.

Therefore, implementation of the MSHCP will not preclude the ecological function and value of designated critical habitat in the recovery of the arroyo toad. Moreover, the effects MSHCP implementation on designated critical habitat for the arroyo toad, together with the land conservation and adaptive management included in the Plan, do not appreciably diminish the value of the primary constituent elements essential to the species' conservation.

Santa Ana Sucker (*Catostomus santaanae*)

Status of Critical Habitat

Revised critical habitat for the Santa Ana sucker was designated December 14, 2010 (75 FR 77962). Sucker critical habitat is designated in three units on approximately 9,331 acres of habitat in the Santa Ana River in San Bernardino, Riverside, and Orange counties (Unit 1), and the San Gabriel River (Unit 2), and Big Tujunga Creek (Unit 3) in Los Angeles County in southern California. Critical habitat was designated in both occupied and unoccupied areas. Portions of Units 1 and 3, Subunits 1A and 3B respectively, are not occupied and were designated because they provide sources of water and coarse sediment essential to the

conservation of Santa Ana sucker. All occupied units designated as critical habitat contain the PCEs in the appropriate quantity and spatial arrangement essential to the conservation of this species and support multiple life processes for Santa Ana sucker.

The primary constituent elements of critical habitat for the sucker are (Service 2010b):

- 1) A functioning hydrological system within the historical geographic range of Santa Ana sucker that experiences peaks and ebbs in the water volume (either naturally or regulated) that encompasses areas that provide or contain sources of water and coarse sediment necessary to maintain all life stages of the species, including adults, juveniles, larvae, and eggs, in the riverine environment;
- 2) Stream channel substrate consisting of a mosaic of loose sand, gravel, cobble, and boulder substrates in a series of riffles, runs, pools, and shallow sandy stream margins necessary to maintain various life stages of the species, including adults, juveniles, larvae, and eggs, in the riverine environment;
- 3) Water depths greater than 1.2 in and bottom water velocities greater than 0.01 ft per second;
- 4) Clear or only occasionally turbid water;
- 5) Water temperatures less than 86 °F;
- 6) Instream habitat that includes food sources (such as zooplankton, phytoplankton, and aquatic invertebrates), and associated vegetation such as aquatic emergent vegetation and adjacent riparian vegetation to provide:
 - a) Shading to reduce water temperature when ambient temperatures are high,
 - b) shelter during periods of high water velocity, and
 - c) protective cover from predators; and
- 7) Areas within perennial stream courses that may be periodically dewatered, but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.

Environmental Baseline

The Plan Area contains portions of Subunits 1B and 1C, the Santa Ana River and the lower Santa Ana River respectively. Unit 1 was designated “to independently support a population of Santa Ana sucker in a functioning hydrologic system that provides suitable water quality, supply, and coarse sediment” (Service 2010b).

Subunits 1B and 1C provide stream and storm waters (PCE 1) required to transport sediments necessary to maintain appropriate substrate (PCE 2) conditions in occupied portions of the Santa Ana River, and provide habitat for populations of Santa Ana sucker in the Santa Ana River, one of only three areas where it survives.

Subunit 1B includes approximately 22 mi of the mainstem of the Santa Ana River from near Tippecanoe Avenue in San Bernardino County to the Prado Dam and Flood Control Basin in Riverside County. This subunit also includes sections of the Rialto Drain and Sunnyslope Creek. Lands within this subunit are under Federal (U.S. Army Corps of Engineers) (521 ac), State/Local (2,854 ac), and private (1,396 ac) ownership.

The portion of Subunit 1B above La Cadena Drive in San Bernardino is not occupied due a barrier to upstream dispersal. This subunit has been heavily affected by urban development, water diversion, dams, water quality impacts from non-point source and point source pollution (including untreated urban run-off and discharge of treated wastewater), and altered hydrology throughout the watershed.

As reported in the final rule, recent surveys found Santa Ana suckers at various locations in the mainstem of the Santa Ana River between the Rialto Drain and Prado Dam. Santa Ana suckers also occupy the Rialto Drain and Sunnyslope Creek at least during portions of the year. In 2005, the low-flow channel of the Santa Ana River moved away from its confluence with Sunnyslope Creek, and accumulated sediments and vegetation are preventing access to this creek by Santa Ana suckers. In 2011, the Santa Ana Watershed Association cleared exotic vegetation and removed debris from the mouth of Sunnyslope Creek to reestablish the unrestricted flow from Sunnyslope creek to the river. An effort is also underway to remove the predatory fish in Sunnyslope Creek. This creek is the only tributary to the Santa Ana River in this subunit and the Plan Area where sucker spawning has been documented. (Spawning has also been documented in the Rialto Drain, but it is upstream of the Plan Area).

Subunit 1C includes approximately 10.7 mi of the Santa Ana River mainstem from below the Prado Dam outlet in Riverside County to 0.6 mi downstream of the State Route 90 (Imperial Highway) Bridge in Orange County. No tributaries to the Santa Ana River were included in the designation in Subunit 1C. Lands within this subunit are under State/Local (56 ac) and private (711 ac) ownership.

As stated in the final rule suckers have been found in the vicinity of the Gypsum Canyon Bridge, Weir Canyon drop structure, and the Imperial Highway overpass and more recently just below Prado Dam (Service 2010b). Hydrology in this subunit has been altered by the presence and operation of Prado Dam. Flows to Subunit 1C are releases from Prado Dam, resulting in fluctuating water (PCE 1) and sediment (PCE 2) releases. Releases from Prado Dam maintain perennial stream flow in the Santa Ana River, which in turn maintains well defined banks supporting native riparian vegetation (PCE 6) and deep pools (PCE 2).

Effects on Critical Habitat from Plan Implementation

There are 4,107 ac of critical habitat in Subunits 1B and 1C in the Plan Area. Approximately 687 ac (17 percent) of this acreage is on private land (617 ac in Unit 1B and 61 ac in Unit 1C). The remaining 83 percent (3,420 ac) is Federal, State, or local agency land that is identified as PQP in the Plan and will remain in the MSHCP Conservation Area and be unaffected by Plan Implementation. We expect 323 ac (47 percent) of the critical habitat designated on private land to be conserved and managed by the permittees as ARL and 376 ac will be subjected to direct and indirect effects from Plan implementation. Therefore, we anticipate that approximately 91 percent of the Santa Ana sucker critical habitat will be conserved or remain within the Plan Area.

We have no project-specific information regarding the future energy and water delivery systems or the development of residential, commercial, or industrial facilities that may occur within the Plan Area over the life of the permit. However, where these facilities will occur within critical habitat for the Santa Ana sucker, we anticipate that the direct effects of facility construction, operation and maintenance such as ground disturbance and changes to water quality or quantity within the Santa Ana River, as described in the “General Effects” section of the 2004 biological opinion (Service 2004), will be minimized and/or avoided by compliance with the Riparian/Riverine Areas and Vernal Pools policy, the Urban/Wildlands Interface Guidelines, Facilities Siting Criteria, Construction Guidelines and Best Management Practices, where applicable.

Conclusion

The loss or degradation of up to 376 ac (9 percent) of Santa Ana sucker critical habitat together with the offsetting land conservation and adaptive management prescriptions, do not appreciably diminish the ecological function and value of the primary constituent elements essential to the species’ conservation.

Quino Checkerspot Butterfly (*Euphydryas editha quino*)

Status of Critical Habitat

We designated approximately 62,125 ac of final revised critical habitat for Quino checkerspot butterfly in 10 units in San Diego and Riverside counties on June 17, 2009 (74 FR 28776). The 2009 final revised designation reduced the 2002 designation of critical habitat for Quino checkerspot butterfly by approximately 109,479 ac. Both the 2002 and 2009 designations were based on the on the recovery plan (Service 2003), which concluded that habitat areas supporting all occurrence complexes and habitat areas that facilitate landscape connectivity or otherwise play a significant role in maintaining population resilience are essential to the long-term conservation of the subspecies. The reduction in area from the 2002 designation was the result of more specific population distribution information and exclusions under section 4(b)(2) of the Act of areas within approved functioning habitat conservation plans, military lands and tribal trust lands (Service 2009a). Each of the designated critical habitat units supports viable core populations of the subspecies.

The primary constituent elements of critical habitat for Quino checkerspot butterfly are (Service 2009a):

- 1) Open areas within scrublands at least 21.5 square feet (ft²) in size that:
 - a) Contain no woody canopy cover; and
 - b) Contain one or more of the host plants *Plantago erecta*, *Plantago patagonica*, *Antirrhinum coulterianum*, or *Collinsia concolor* used for Quino checkerspot butterfly growth, reproduction, and feeding; or
 - c) Contain one or more of the host plants *Cordylanthus rigidus* or *Castilleja exserta* that are within 328 ft (100 m) of the host plants listed above; or
 - d) Contain flowering plants with a corolla tube less than or equal to 0.43 in used for Quino checkerspot butterfly feeding;
- 2) Open scrubland areas and vegetation within 656 ft of the open canopy areas (described in paragraph 1) above) used for movement and basking; and
- 3) Hilltops or ridges within scrublands, containing an open, woody canopy area at least 21.5 ft² in size used for Quino checkerspot butterfly mating (hilltopping behavior) and are contiguous with (but not otherwise included in) open areas and natural vegetation described in paragraphs 1) and 2) above.

Baseline

The Plan Area contains Units 2 through 7 encompassing 22,024 ac of designated Quino checkerspot butterfly critical habitat. About 57 percent of this area, 12,551 ac, is Federal land (Forest Service or BLM). Approximately 4,012 ac, are privately owned (18 percent). The remaining 5,461 ac, or 25 percent, are owned by local governments, the State of California or the Metropolitan Water District (MWD) and are included in the PQP designation in the MSHCP. All of the designated critical habitat units in the Plan Area are occupied by Quino checkerspot butterfly and contain all 3 of the PSEs. Each of the critical habitat units is also associated with one or more of the Occurrence Complexes described in the recovery plan (Service 2003)

Unit 2, the Skinner/Johnson Unit encompasses approximately 5,313 ac on the Western Riverside Multi-Species Reserve (MSR). Located north of the City of Temecula, in the vicinity of Lake Skinner, the unit is associated with the Skinner/Johnson Core Occurrence Complex. The MSR is included in the MSHCP PQP designation and is owned by the MWD who is not an MSHCP Permittee.

Unit 3, the Sage Unit consists of approximately 123 ac of federally owned land associated with the Sage Core and San Ignacio Non-core Occurrence Complexes. This unit is located northeast

of Temecula, in the vicinity of the community of Sage. Unit 4, the Wilson Valley Unit, consists of approximately 463 ac of federally owned land, associated with the Wilson Valley Core Occurrence Complex. This unit is located north of State Route 79 (SR79), east of Oak Mountain and the City of Temecula in the vicinity of Wilson Valley. Unit 5, the Vail Lake/Oak Mountain Unit consists of approximately 1,788 ac of federally owned land associated with the Vail Lake Core Occurrence Complex and Butterfield/Radec Non-core Occurrence Complex. This unit is located north and south of SR 79, and east of Temecula within the vicinity of Oak Mountain and Vail Lake. Unit 6, the Tule Peak Unit consists of approximately 326 ac of Federal land associated with the Tule Peak/Silverado Core Occurrence Complex. This unit is located south of State Route 371 and the community of Anza, in the vicinity of Tule Peak Road and the southern boundary of the Cahuilla Band of Indians' lands.

Unit 7, the Bautista Unit consists of approximately 13,880 ac located in north of State Route 371 and the community of Anza. This unit contains the Bautista Road Core, Pine Meadow Noncore, Lookout Mountain Non-core and Horse Creek Non-core Occurrence Complexes. Unit 7 consists of 9,932 ac of Federal lands, 102 ac of State land, 46 ac owned by local government and 3,800 ac of private lands. Unit 7 provides habitat connectivity to the higher elevation occurrence complexes. The 148 ac of State and local government owned lands are included in the MSHCP PQP designation. (The acreage figures presented here differ from those in the rule because the Forest Service has purchased 212 ac within the critical habitat designation since the rule was published.).

Effects on Critical Habitat from Plan Implementation

The MSHCP Permit does not provide for any covered activity or “take” on Federal lands; therefore implementation of the MSHCP will not affect the Quino checkerspot butterfly critical habitat designations in Units 3, 4, 5, or 6. The MSHCP also does not provide for “take” of Covered Species on PQP lands. Under the terms of the MSHCP, if a Permittee alters the land use on property identified as PQP such that it no longer contributes to the MSHCP conservation strategy, the Permittee must replace the affected PQP land with at least equivalent acreage that is biologically equivalent or superior to the area affected by the Permittee’s activities (MSHCP Section 3.2.1). The analysis required to make a determination of biologically equivalent or superior preservation will necessarily include the biological elements that make up the PSCs (MSHCP Section 6.5). Therefore, implementation of the MSHCP will not preclude the ecological role of designated critical habitat in the recovery of the Quino checkerspot butterfly in Unit 2.

There are 13,880 ac of designated critical habitat for the Quino checkerspot butterfly in Unit 7, approximately 3,800 ac (27 percent) of this is on private land. The remaining 73 percent (10,080 ac) will remain in the MSHCP Conservation Area and be unaffected by Plan Implementation. We expect 570 ac (14 percent) of the critical habitat designated on private land in Unit 7 to be conserved and managed by the permittees as ARL.

Implementation of the MSHCP is therefore likely to result in the loss of 3,230 ac (23 percent) of primary constituent elements for the Quino checkerspot butterfly out of the 13,880 ac of designated critical habitat for the Quino checkerspot butterfly in Unit 7. Offsetting the loss of 3,230 ac of designated critical habitat for the Quino checkerspot butterfly within the Plan Area, build out of the MSHCP will result in the conservation and management of 52,365 ac of modeled habitat within the anticipated Additional Reserve Lands within the Plan Area. An additional 53,348 ac of modeled habitat for the Quino checkerspot butterfly will remain in PQP Lands within the Plan Area and is expected to be managed for the butterfly. The conservation and management of 105,713 ac of modeled habitat within, between, and adjacent to critical habitat within the Plan Area more than offsets the impacts to critical habitat and the associated loss of 3,230 ac of primary constituent elements. In sum, impacts to critical habitat together with the offsetting land conservation and management prescriptions, do not appreciably diminish the value of the primary constituent elements essential to the species' conservation nor do the effects preclude the ecological role of designated critical habitat Unit 7 in both the survival and recovery of the species.

Conclusion

The effects MSHCP implementation on designated critical habitat for the Quino checkerspot butterfly, together with the land conservation and adaptive management included in the Plan, do not appreciably diminish the ecological value of the primary constituent elements essential to the species' conservation.

Spreading *Navarretia* (*Navarretia fossalis*)

Status of Critical Habitat

We designated approximately 6,720 ac of *navarretia* critical habitat in Los Angeles, Riverside, and San Diego counties on October 7, 2010. All of the designated units and subunits contain the PCEs in the appropriate quantity and spatial arrangement essential to the conservation of *navarretia*. The revised critical habitat units correspond to the management areas described in the 1998 *Recovery Plan for Vernal Pools of Southern California* (Service 1998). Each subunit contains either a core habitat area or a satellite habitat area that provides connectivity between core habitat areas or other satellite habitat areas. The terms 'core' and 'satellite' in this discussion of *navarretia* critical habitat are used in the general descriptive sense described in the rule (Service 2010c), and are not comparable to the use of "Core" as a component of the MSHCP conservation strategy.

The primary constituent elements of critical habitat for *navarretia* are (Service 2010c):

- 1) *Ephemeral wetland habitat*. Vernal pools (up to 10 ac) and seasonally flooded alkali vernal plains that become inundated by winter rains and hold water or have saturated soils for 2 weeks to 6 months during a year with average rainfall [i.e., years where average rainfall amounts for a particular area are reached during the rainy season

(between October and May)]. This period of inundation is long enough to promote germination, flowering, and seed production for spreading navarretia and other native species typical of vernal pool and seasonally flooded alkali vernal plain habitat, but not so long that true wetland species inhabit the areas

- 2) *Intermixed wetland and upland habitats that act as the local watershed.* Areas characterized by mounds, swales, and depressions within a matrix of upland habitat that result in intermittently flowing surface and subsurface water in swales, drainages, and pools described in PCE 1.
- 3) *Soils that support ponding during winter and spring.* Soils found in areas characterized in PCEs 1 and 2 that have a clay component or other property that creates an impermeable surface or subsurface layer. These soil types include, but are not limited to: Cienega- Pismo-Caperton soils in Los Angeles County; Domino, Traver, Waukena, Chino, and Willows soils in Riverside County; and Huerhuero, Placentia, Olivenhain, Stockpen, and Redding soils in San Diego County.

Baseline

Spreading navarretia critical habitat Unit 6, the Riverside Management Area, is located in the Plan Area and consists of three subunits (6A, 6B and 6C) totaling 5,477 ac. Subunit 6A (the San Jacinto River), includes core habitat along the San Jacinto River near the cities of Hemet and Perris. This subunit contains seasonally flooded alkali vernal plains and is loosely bounded by Mystic Lake on the northeast and by the Perris Airport on the southwest. Subunit 6A encompasses approximately 4,312 ac, including 1,504 ac of land owned by the California Department of Fish and Game (CDFG) and 2,808 ac of private land. Subunit 6A is identified in the final rule as core habitat that provides a large area of habitat, supports sizable occurrences of navarretia, and provides potential connectivity between occurrences in Subunits 6B and 6C.

Subunit 6B (Salt Creek Seasonally Flooded Alkali Plain) is located near Hemet and west of the Hemet-Ryan Airport. Subunit 6B consists of 930 ac of private land that encompasses the core habitat along the Upper Salt Creek drainage west of Hemet. Subunit 6B is identified in the final rule as core habitat that provides a large area of habitat, supports sizable occurrences of navarretia, and provides potential connectivity between occurrences in Subunits 6A and 6C. This subunit consists of seasonally flooded alkali vernal plains not subject to U.S. Army Corps of Engineer jurisdiction.

Subunit 6C (Wickerd and Scott Road Pools) is located in the City of Menifee. This subunit contains two large vernal pools and encompasses 235 ac of private land. This subunit was included in the critical habitat designation as satellite habitat to provide potential connectivity among the occurrences of navarretia across the other subunits, including proposed Subunit 6D, which is identified as essential, was excluded from the final rule.

Effects on Critical Habitat from Plan Implementation

There are 5,477 ac of navarretia critical habitat in Unit 6 in the Plan Area. Approximately 4,131 ac (75 percent) of this acreage is on private land, 2,808 ac in Subunit 6A, 930 ac in Subunit 6B, and 235 ac in Subunit 6C. The remaining 25 percent (1,346 ac) will remain in the MSHCP Conservation Area as PQP Lands and be unaffected by Plan implementation. We expect 2,030 ac of Subunit 6A and 652 ac of Subunit 6B to be conserved and managed by the permittees as ARL. Therefore 4,028 ac of designated critical habitat, 73 percent, will be included in the MSHCP Conservation Area.

Spreading navarretia is a Narrow Endemic Plant Species. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys will be conducted as part of the project review process for public and private projects where suitable habitat for navarretia is present within Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 2, 3, 3a, 4, and 9 (navarretia survey area) (MSHCP Figure 6-1, pp. 6-30). Populations detected as a result of survey efforts will be avoided according to the procedures outlined in the Additional Survey Needs and Procedures (section 6.1.3 of the Plan; i.e., 90 percent of portions of property with long-term conservation value will be avoided until the species conservation objectives are met).

There are 1,262 ac of privately owned designated critical habitat in the navarretia survey area and outside of the area expected to be conserved as ARL. Approximately 750 ac of that area is in Subunit 6A, 277 ac of that area is in Subunit 6B and 235 ac are in Subunit 6C. Under the terms of the Narrow Endemic Plants Species Survey policy, not more than 10 percent of those areas will be lost to Plan implementation. That translates into a loss of approximately 75 ac in Subunit 6A, 28 ac in Subunit 6B and 23 ac in Subunit 6C. Because the navarretia is associated with vernal pools, we anticipate that implementation of the Riparian/Riverine Areas and Vernal Pools policy will help maintain the PCEs in some of the designated critical habitat that is outside the MSHCP Conservation Area and the NEPSSA for this species.

We anticipate that MSHCP implementation will result in the loss of approximately 113 ac, as described in the analysis above, (38 ac outside of ARL and survey area and up to 75 ac lost in the survey area), of navarretia critical habitat in Subunit 6A. This amounts to less than 3 percent of the area in the subunit. Subunit 6A was designated to provide a core area with a large contiguous area of navarretia habitat, sizable occurrences of navarretia and the potential for connectivity with Subunits 6B and 6C. The loss of the area anticipated as a result of Plan implementation will not diminish the core habitat function of navarretia Subunit 6A described in the final rule.

We anticipate that MSHCP implementation will result in the loss of approximately 28 ac of navarretia critical habitat in Subunit 6B as described in the analysis above. This amounts to 3 percent of the area in the subunit. Subunit 6B was designated to provide a core area with a large contiguous are of navarretia habitat, sizable occurrences of navarretia and the potential for connectivity with Subunits 6A and 6C. The loss of the area anticipated as a result of Plan

implementation will not diminish the core habitat function of navarretia Subunit 6B described in the final rule.

All of Subunit 6C is within the navarretia survey area. We anticipate that MSHCP implementation will result in the loss of up to 23 ac of navarretia critical habitat in Subunit 6C as described in the analysis above. This impact amounts to 10 percent of the area in the subunit. Subunit 6C was designated as satellite habitat to provide for potential connectivity and support smaller occurrences of the species (Service 2010c). The loss of area anticipated as a result of Plan implementation will not diminish the satellite habitat function of navarretia Subunit 6C described in the final rule.

Conclusion

Implementation of the MSHCP is anticipated to provide protection and management for 4,028 ac (73 percent) of critical habitat within the Plan Area. The management and monitoring activities discussed in the 2004 biological opinion are anticipated to maintain the important ecological functions within these areas of critical habitat thereby minimizing the effects of Plan implementation on designated navarretia critical habitat.

Therefore, implementation of the MSHCP will not preclude the ecological role of designated critical habitat in the recovery of the navarretia. Moreover, the effects MSHCP implementation on designated critical habitat for the navarretia, together with the land conservation and adaptive management included in the Plan, do not appreciably diminish the value of the primary constituent elements essential to the species' conservation.

San Diego Ambrosia (*Ambrosia pumila*)

Status of Critical Habitat

We designated critical habitat for San Diego ambrosia in 6 Units on 783 ac in Riverside and San Diego counties on November 30, 2010. All of the designated units in the Plan Area contain the physical and biological features essential to the conservation of ambrosia sandy loam or clay soils located on an upper terrace of a water source, which provide nutrients, moisture, and potentially periodic flooding presumed necessary for the plant's persistence (PCE 1); and coastal sage scrub vegetation, which allows adequate sunlight and airflow for ambrosia (PCE 2).

The primary constituent elements of critical habitat for ambrosia are (Service 2010d):

- 1) Sandy loam or clay soils (regardless of disturbance status), including (but not limited to) the Placentia (sandy loam), Diablo (clay), and Ramona (sandy loam) soil series that occur near (up to several hundred meters from but not directly adjacent to) a river, creek, or other drainage, or within the watershed of a vernal pool, and that occur on an upper terrace (flat or gently sloping areas of 0 to 42 percent slopes are typical for terraces on which *Ambrosia pumila* occurrences are found).

- 2) Grassland or ruderal habitat types, or openings within coastal sage scrub, on the soil types and topography described in PCE 1, that provide adequate sunlight, and airflow for wind pollination.

Baseline

Units 1 (Santa Ana Watershed) and 3 (Santa Margarita) are in the Plan Area and contain 112 ac and 77 ac respectively. Unit 1 consists of two subunits containing 26 ac of State or local government-owned land, and 85 ac of privately owned land (values do not sum due to rounding). Unit 1 was designated because of its contribution to the genetic diversity of the species and because the populations of ambrosia present are the northernmost occurrences of the species.

The Alberhill Subunit (1A) is north of Lake Elsinore, west of Interstate 15, near the northern base of Alberhill Mountain, and near the intersection of Lake Street and Temescal Canyon Road. Subunit 1A consists of approximately 23 ac of County-owned land, and 18 ac of privately owned land for a total of approximately 41 ac. The 23 ac of County-owned land are managed for conservation by the RCA for MSHCP Covered Species. Six acres of the privately owned lands are covered under a settlement agreement and MOU signed on February 24, 2004, by the County and several property owners, including Murdock Alberhill, the owner of these 6 ac, which specifically exempts and excludes these landowners' properties from the MSHCP (County of Riverside 2004).

The Nichols Road Subunit (1B) is located near the southeastern base of Alberhill Mountain, west of Durant Road and Temescal Creek on the north and south sides of Nichols Road. Subunit 1B consists of approximately 3 ac of State or local government-owned land, and 67 ac of privately owned land for a total of approximately 70 ac.

Unit 3 consists of two subunits containing approximately, 8 ac of State or local government-owned land, and 69 ac of private land. The unit was designated because of its contribution to the genetic diversity of the species. The populations of ambrosia in Unit 3 were not known at the time the MSHCP was developed. The Santa Gertrudis Creek Subunit (3A) is located about 1 mi southwest of Unit 2, along the San Diego Aqueduct, south of the intersection of Chandler and Suzi Roads and north of Santa Gertrudis Creek in Riverside County. Subunit 3A consists of approximately 8 ac of State owned land and 25 ac of privately owned land for a total of approximately 33 ac. The Murrieta Creek Subunit (3B) is located in the City of Temecula near the western end of 1st Street, just west of Murrieta Creek. Subunit 3B consists of approximately 44 ac of privately owned land.

Effects on Critical Habitat from Plan Implementation

There are 183 ac of San Diego ambrosia critical habitat in Units 1 and 3 in the Plan Area. Approximately 148 ac (81 percent) of this acreage is on private land, 79 ac in Unit 1 and 69 ac in Unit 3. The remaining 19 percent (35 ac) will remain in the MSHCP Conservation Area as PQP Lands and be unaffected by Plan implementation. We expect 111 ac to be conserved and

managed by the permittees as ARL (67 ac in Subunit 1B and 44 ac of Subunit 3B). Therefore, 146 ac (80 percent) of the designated critical habitat in the Plan Area, will be included in the MSHCP Conservation Area.

San Diego ambrosia is a Narrow Endemic Plant Species. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys will be conducted as part of the project review process for public and private projects where suitable habitat for ambrosia is present within NEPSSA 1, 2, 3, 3a and 7 (San Diego ambrosia survey area) (MSHCP Figure 6-1, pp. 6-30). Populations detected as a result of survey efforts will be avoided according to the procedures outlined in the Additional Survey Needs and Procedures (section 6.1.3 of the Plan; i.e., 90 percent of portions of property with long-term conservation value will be avoided until the species conservation objectives are met).

There are 15 ac of privately owned designated critical habitat in the ambrosia survey area and outside of the area expected to be conserved as ARL. Approximately 12 ac of that area is in Subunit 1A, 3 ac of that area is in Subunit 1B. Under the terms of the Narrow Endemic Plants Species Survey policy, not more than 10 percent of those areas will be lost to Plan Implementation. That translates into a loss of approximately 1.5 ac in Subunit 1A, and less than half an acre in Subunit 1B. The ambrosia is associated with vernal pools and floodplains; we therefore anticipate that implementation of the Riparian/Riverine Areas and Vernal Pools policy will help maintain the PCEs in some of the designated critical habitat that is outside both the MSHCP Conservation Area and the NEPSSA for this species.

We anticipate that MSHCP implementation will result in the loss of approximately 1 ac of designated critical habitat in Subunit 1A as described in the analysis above. This acreage amounts to 4 percent of the area in the subunit. Subunit 1A was designated because it is part of the northern most extent of the distribution of the species and occurrences present within the subunit contribute to the genetic diversity of the species. San Diego ambrosia is conserved and expected to remain within this subunit on the 23 ac managed by the RCA. The loss of the area anticipated as a result of the Plan will not diminish the ecological function of Subunit 1A.

We anticipate that MSHCP implementation will result in the loss of some small portion of the critical habitat in Subunit 2A. All of Subunit 2A is described for conservation in the ARL. However, Nichols Road is present in the subunit. The widening of this Road is a MSHCP covered activity. We do not expect the widening of Nichols Road to extirpate the occurrences in Subunit 1B. Subunit 1B was designated because it is part of the northern most extent of the distribution of the species and occurrences present within the subunit contribute to the genetic diversity of the species. The loss of the area anticipated as a result of the Plan will not diminish the ecological function of ambrosia in Subunit 2A.

MSHCP implementation may result in the loss of all of ambrosia critical habitat in Subunit 3A. While none of the area is described for conservation as ARL and the area is not within the San Diego ambrosia survey area, this population was discovered during rare plant surveys being conducted by a Participating Special Entity under the MSHCP for a utility line (the Auld-

Morgana Subtransmission Line Project). All of the known occurrences are in the utility right of way and were avoided by the utility project (AMEC 2006), but the population was not conserved and managed. Subunit 3A was designated because occurrences present within the subunit contribute to the genetic diversity of the species. All of Subunit 3B is described for conservation in the ARL. Subunit 3B was designated because occurrences present within the subunit contribute to the genetic diversity of the species. Despite the uncertainty surrounding Subunit 3A, implementation of the Plan will not diminish the ecological function and value of Unit 3.

Conclusion

Implementation of the MSHCP is anticipated to provide protection and management for 152 ac (80 percent) of critical habitat within the Plan Area. The management and monitoring activities discussed in the 2004 biological opinion are anticipated to maintain the important ecological functions within these areas of critical habitat thereby minimizing the effects of Plan implementation on designated navarretia critical habitat.

Therefore, implementation of the MSHCP will not preclude the ecological role of designated critical habitat in the recovery of the ambrosia. Moreover, the effects of MSHCP implementation on designated critical habitat for the ambrosia, together with the land conservation and adaptive management included in the Plan, do not appreciably diminish the value of the primary constituent elements essential to the species' conservation.

Thread-leaved Brodiaea (*Brodiaea filifolia*)

Status of Critical Habitat

Final critical habitat for brodiaea was designated on February 8, 2011 (76 FR 6848). Brodiaea critical habitat includes 2,947 ac in 10 units in Los Angeles, San Bernardino, Riverside, Orange, and San Diego counties. Most of the critical habitat units occur in a geographic area that includes southern Orange (Units 3 and 4), western Riverside (Unit 11), and central and northern San Diego counties (Units 5, 6, 7, and 8). Occurrences in the far northern portion of the range (i.e., Units 1 and 2 in Los Angeles and Riverside counties) and southern portion of the range (i.e., Unit 12 in southern San Diego County) are geographically isolated from the other occurrences. Each of the designated critical habitat units possesses one or more of the following characteristics: 1) it is any area that supports an occurrence in rare or unique habitat within the species' range; 2) it supports a large number of plants (i.e., 3,000 or more individuals); 3) it supports a stable and persistent population (i.e., contains at least 850 individuals and has been observed over multiple years) (Service 2011b).

The PCEs for brodiaea critical habitat are defined in the final rule as follows (Service 2011b):

- 1) PCE 1—Appropriate soil series at a range of elevations and in a variety of plant communities, specifically:
 - a) Clay soil series of various origins (e.g., Alo, Altamont, Auld, Diablo), clay lenses found as unmapped inclusions in other soils series, or loamy soils series underlain by a clay subsoil (e.g., Fallbrook, Huerhuero, Las Flores) occurring between the elevations of 100 and 2,500 ft).
 - b) Soils (e.g., Cieneba-rock outcrop complex, Ramona family-Typic Xerothents soils) altered by hydrothermal activity occurring between the elevations of 1,000 and 2,500 ft.
 - c) Silty loam soil series underlain by a clay subsoil or caliche that are generally poorly drained, moderately to strongly alkaline, granitic in origin (e.g., Domino, Grangeville, Traver, Waukena, Willows) occurring between the elevations of 600 and 1,800 ft.
 - d) Clay loam soil series (e.g., Murrieta) underlain by heavy clay loams or clays derived from olivine basalt lava flows occurring between the elevations of 1,700 and 2,500 ft.
 - e) Sandy loam soils derived from basalt and granodiorite parent materials; deposits of gravel, cobble, and boulders; or hydrologically fractured, weathered granite in intermittent streams and seeps occurring between 1,800 and 2,500 ft.
- 2) PCE 2—Areas with a natural, generally intact surface and subsurface soil structure, not permanently altered by anthropogenic land use activities (e.g., deep, repetitive discing, grading), extending out up to 820 ft from mapped occurrences of *Brodiaea filifolia* to provide for space for individual population growth, and space for pollinators.

Baseline

The Plan Area contains all of Unit 11, which consists of 6 Subunits totaling 1,113 ac. This unit contains 53 ac of Federal land, 366 ac of State land, 33 ac of local government land, and 661 ac of private land. All of the subunits in Unit 11 provide both PCEs.

Subunit 11a, the San Jacinto Wildlife Area Subunit, consists of 366 ac of land owned by CDFG, 17 ac of local government land, and 18 ac of private land. Subunit 11b, the San Jacinto Avenue/Dawson Road Subunit consists of 117 ac of private land near San Jacinto Avenue and Dawson Road in Riverside County. Subunit 11c, the Case Road Subunit, consist of 11 ac of land owned by local government and 169 ac of private land near the City of Perris. Subunit 11d, the Railroad Canyon Subunit, consist of 53 ac of BLM, 1 ac of local government land, and 204 ac of

private land north of Kabian County Park and southwest of Perris. Subunits 11a, 11b, 11c and 11d all contain poorly drained and moderately to strongly alkaline soils (PCE 1C) and were included in the critical habitat designation because they each support one of the four stable, persistent occurrences associated with alkali playa habitat.

Subunit 11e, the Upper Salt Creek (Stowe Pool) Subunit consists of 145 ac of private land in the Upper Salt Creek drainage west of Hemet. Subunit 11f, the Santa Rosa Plateau—Mesa de Colorado Subunit, consists of 5 ac of local government land and 8 ac of private land in southwestern Riverside County. Subunits 11e, and 11f, were included in the critical habitat designation because they each support one the three stable, persistent occurrences associated with vernal pool habitat.

Effects on Critical Habitat from Plan Implementation

There are 1,113 ac of thread-leaved brodiaea critical habitat in Unit 11 in the Plan Area. Approximately 661 ac (59 percent) of this acreage is on private land, 18 ac in Subunit 11a, 117 ac in Subunit 11b, 169 ac in Subunit 11c, 204 ac in Subunit 11d, 145 ac in Subunit 11e, and 8 ac in Subunit 11f. The remaining 41 percent (452 ac) will remain in the MSHCP Conservation Area as PQP Lands and be unaffected by Plan implementation. We expect 409 ac in Unit 11 be conserved and managed by the permittees as ARL (92 ac in Subunit 11b, 101 ac in Subunit 11c, 109 ac in Subunit 11d, and 99 ac in Subunit 11e). Therefore, 861 ac of designated critical habitat (77 percent) will be included in the MSHCP Conservation Area.

The brodiaea is a Criteria Area Survey Species. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys will be conducted as part of the project review process for public and private projects where suitable habitat for thread-leaved brodiaea is present within Criteria Area Species Survey Areas (CASSA) 1, 2, 3, 3a and 4 (Figure 6-2, pp. 6-64). Populations detected as a result of survey efforts will be avoided according to the procedures outlined in the Additional Survey Needs and Procedures (section 6.1.3 of the Plan; i.e., 90 percent of portions of property with long-term conservation value will be avoided until the species conservation objectives are met).

There are 222 ac of privately owned designated critical habitat in the thread-leaved brodiaea survey area and outside of the area expected to be conserved as ARL. Approximately 10 ac of that area is in Subunit 11a, 25 ac of that area is in Subunit 11b, 67 ac of that area is in Subunit 11c, 74 ac of that area is in Subunit 11d, and 46 ac are in Subunit 11e. Under the terms of the Additional Survey Needs and Procedures policy, not more than 10 percent of those areas will be lost to Plan Implementation. That translates into a loss of approximately 1 ac in Subunit 11a, 2 ac in Subunit 11b, 7 ac in Subunit 11c, 7 ac in Subunit 11d, and 4 ac in Subunit 11e. Because brodiaea is associated with vernal pools and flood plains, we anticipate that implementation of the Riparian/Riverine Areas and Vernal Pools policy will help maintain the PCEs in some of the designated critical habitat that is outside the MSHCP Conservation Area and NEPSSA for this species.

We anticipate that MSHCP implementation will result in the loss of approximately 9 ac of brodiaea critical habitat in Subunit 11a as described in the analysis above. (The 8 ac not in ARL and not in the thread-leaved brodiaea survey area and the 1 ac expected to be lost from inside the survey area.) This impact amounts to 2 percent of the area in the subunit. Subunit 11a was designated because it supports one of the four stable, persistent occurrences associated with alkali playa habitat. The loss of the area anticipated as a result of the Plan will not diminish the function of thread-leaved brodiaea Subunit 11a.

We anticipate that MSHCP implementation will result in the loss of approximately 2.5 ac of brodiaea critical habitat in Subunit 11b as described in the analysis above. (The entire area of privately held critical habitat outside of area expected to be conserved as ARL is in the survey area). This impact amounts to 2 percent of the area in the subunit. Subunit 11b was designated because it supports one of the four stable, persistent occurrences associated with alkali playa habitat. The loss of the area anticipated as a result of the Plan will not diminish the ecological function of Subunit 11b.

We anticipate that MSHCP implementation will result in the loss of approximately 8 ac of brodiaea critical habitat in Subunit 11c as described in the analysis above. (The 1 ac not in ARL and not in the thread-leaved brodiaea survey area and the 7 ac expected to be lost from inside the survey area.). This impact amounts to 5 percent of the area in the subunit. Subunit 11c was designated because it supports one of the four stable, persistent occurrences associated with alkali playa habitat. The loss of the area anticipated as a result of the Plan will not diminish the ecological function of Subunit 11c.

We anticipate that MSHCP implementation will result in the loss of approximately 28 ac of thread-leaved brodiaea critical habitat in Subunit 11d as described in the analysis above (21 ac not in ARL or in the survey area plus 7 ac from the survey area). This impact amounts to 11 percent of the area in the subunit. Subunit 11d was designated because it supports one of the four stable, persistent occurrences associated with alkali playa habitat. The loss of the area anticipated as a result of the Plan will not diminish the ecological function of Subunit 11d.

We anticipate that MSHCP implementation will result in the loss of approximately 4.6 ac of brodiaea critical habitat in Subunit 11e as described in the analysis above. (The entire area of privately held critical habitat outside of area expected to be conserved as ARL is in the survey area). This impact amounts to 3 percent of the area in the subunit. Subunit 11e was designated because it supports one of the three stable, persistent occurrences associated with vernal pools. The loss of the area anticipated as a result of the Plan will not diminish the ecological function of Subunit 11e.

We anticipate that MSHCP implementation will result in the loss of approximately 8 ac of brodiaea critical habitat in Subunit 11f as described in the analysis above. This impact amounts to 61 percent of the area in the subunit. However, the rule proposing critical habitat for brodiaea identified 234 ac in Subunit 11b as essential to the survival and recovery of the species. Approximately 221 ac of that area was excluded under section 4(b)(2) of the Act because they

are conserved and managed as part of MSHCP implementation (Service 2009b). Subunit 11f was designated because the area supports one of the three stable, persistent occurrences associated with vernal pools. The 8ac anticipated to be lost under that plan constitute 3 percent of the area identified as essential in the proposed rule. This small impact will not diminish the ecological function of Subunit 11f.

Conclusion

Implementation of the MSHCP is anticipated to provide protection and management for 874 ac (78 percent) of brodiaea critical habitat within the Plan Area. The management and monitoring activities discussed in the 2004 biological opinion are anticipated to maintain the important ecological functions within these areas of critical habitat thereby minimizing the effects of Plan implementation on designated thread-leaved brodiaea critical habitat.

Therefore implementation of the MSHCP will not preclude the ecological role of designated critical habitat in the recovery of the thread-leaved brodiaea. Moreover, the effects MSHCP implementation on designated critical habitat for the thread-leaved brodiaea, together with the land conservation and adaptive management included in the Plan, do not appreciably diminish the value of the primary constituent elements essential to the species' conservation.

CUMULATIVE EFFECTS

The Service must consider both the effects of the proposed action and the cumulative effects of other activities in determining whether the action is likely to result in the destruction or adverse modification of critical habitat. Cumulative effects are defined as the effects of future State, local government, or private actions that are reasonably certain to occur in the action area. Future Federal actions are not considered cumulative to the proposed action because they require separate consultation pursuant to section 7 of the Act.

As stated in the 2004 biological opinion, it is expected that the majority of lawful, non-Federal actions within the MSHCP permit area for the life of the permit will fall under the purview of the proposed permit and are therefore considered as effects of the proposed action rather than cumulative effects. Other actions by non-Federal and non-Permittees are likely to occur over the life of the Permit, however, the scope and effects of such activities are indeterminable at this time. We are unaware of any non-Federal actions in the action area that may affect the arroyo toad, Santa Ana sucker, Quino checkerspot butterfly, ambrosia, navarretia, or brodiaea critical habitats.

CONCLUSION

After reviewing the current status of critical habitat for the arroyo toad, Santa Ana sucker, Quino checkerspot butterfly, San Diego ambrosia, spreading navarretia, and thread-leaved brodiaea, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that implementation of the Plan, consistent with the existing Permit, is not likely to result in the destruction or adverse modification of critical habitat

for the arroyo toad, Santa Ana sucker, Quino checkerspot butterfly, San Diego ambrosia, spreading navarretia, or thread-leaved brodiaea.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or develop information. We have no conservation recommendations in addition to those provided in the 2004 biological opinion.

REINITIATION NOTICE

This concludes reinitiation of formal consultation on implementation of the Plan consistent with existing Permits. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount of extent of incidental take is exceeded; (2) new information reveals that the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount of extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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