

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AF97

Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat pursuant to the Endangered Species Act of 1973, as amended (Act), for the San Diego fairy shrimp (*Branchinecta sandiegonensis*). The San Diego fairy shrimp is listed as an endangered species under the Act. A total of approximately 1,629 hectares (4,025 acres) of land falls within the boundaries of designated critical habitat. Critical habitat for the San Diego fairy shrimp is located in San Diego and Orange Counties, California.

Section 7 of the Act requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to destroy or adversely modify designated critical habitat. As required by section 4 of the Act, we considered economic and other relevant impacts prior to making a final decision on what areas to designate as critical habitat.

DATES: This final rule is effective November 22, 2000.

ADDRESSES: The complete administrative record for this rule is on file at the Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California 92008. The complete file for this rule is available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ken Berg, Field Supervisor, Carlsbad Fish and Wildlife Office, at the above address (telephone 760/431-9440; facsimile 760/431-5902).

SUPPLEMENTARY INFORMATION:**Background**

The San Diego fairy shrimp (*Branchinecta sandiegonensis*) is a small aquatic crustacean (Order: Anostraca), restricted to vernal pools (pools that have water in them for only a portion of any given year) in coastal southern California and south to northwestern Baja California, Mexico. It is a habitat specialist found in small,

shallow vernal pools and ephemeral (lasting a short time) basins that range in depth from approximately 5 to 30 centimeters (2 to 12 inches (in)) (Simovich and Fugate 1992; Hathaway and Simovich 1996). Water chemistry is also an important factor in determining fairy shrimp distribution (Belk 1977; Gonzales *et al.* 1996), hence, no individuals have been found in riverine or marine waters. All known localities are below 701 meters (m) (2,300 feet (ft)) and are within 64 kilometers (km) (40 miles (mi)) of the Pacific Ocean.

San Diego fairy shrimp is one of several *Branchinecta* species that occur in southern California (Simovich and Fugate 1992). Other species of *Branchinecta* in southern California include the non-listed versatile fairy shrimp (*B. lindahli*) and the federally threatened vernal pool fairy shrimp (*B. lynchi*). Male San Diego fairy shrimp are distinguished from males of other species of *Branchinecta* by differences found at the distal (located far from the point of attachment) tip of the second antennae. Females are distinguishable from females of other species of *Branchinecta* by the shape and length of the brood sac, the length of the ovary, and by the presence of paired dorsolateral (located on the sides, toward the back) spines on five of the abdominal segments (Fugate 1993).

Mature individuals lack a carapace (hard outer covering of the head and thorax) and have a delicate elongate body, large stalked compound eyes, and 11 pairs of swimming legs. They swim or glide gracefully upside down by means of complex wave-like beating movements of the legs that pass from front to back. Adult male San Diego fairy shrimp range in size from 9 to 16 millimeters (mm) (0.35 to 0.63 in); adult females are 8 to 14 mm (0.31 to 0.55 in.) long. The second pair of antennae in males are greatly enlarged and specialized for clasping the females during copulation, while the second pair of antennae in the females are cylindrical and elongate. The females carry their eggs in an oval or elongate ventral brood sac (Eriksen and Belk 1999). Little data is available for what fairy shrimp feed on, although algae, bacteria, protozoa, rotifers, and bits of organic matter are thought to be a large part of their diet (Pennak 1989; Eng *et al.* 1990).

Adult San Diego fairy shrimp are usually observed from January to March; however, in years with early or late rainfall, the hatching period may be extended. The species hatches and matures within 7 days to 2 weeks depending on water temperature (Hathaway and Simovich 1996;

Simovich and Hathaway 1997). San Diego fairy shrimp disappear after about a month, but animals will continue to hatch if subsequent rains result in additional water or refilling of the vernal pools (Branchiopod Research Group 1996). The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The "resting eggs," or "cysts," are capable of withstanding temperature extremes and prolonged drying. When the pools refill in the same or subsequent rainy seasons, some but not all of the eggs may hatch. Fairy shrimp egg banks in the soil may be composed of the eggs from several years of breeding (Donald 1983; Simovich and Hathaway 1997). Simovich and Hathaway (1997) found that vernal pools and ephemeral wetlands that support anostracans (*i.e.*, San Diego fairy shrimp), and occur in areas with variable weather conditions or filling periods (such as southern California), may hatch only a fraction of the total cyst (organisms in a resting stage) bank in any given year. Thus, reproductive success is spread over several seasons.

Vernal pools have a discontinuous occurrence in several regions of California (Keeler-Wolf *et al.* 1995), from as far north as the Modoc Plateau in Modoc County, south to the international border in San Diego County. Vernal pools form in regions with Mediterranean climates, where shallow depressions fill with water during fall and winter rains and then evaporate in the spring (Collie and Lathrop 1976; Holland 1976, 1988; Holland and Jain 1977, 1988; Thorne 1984; Zedler 1987; Simovich and Hathaway 1997). In years of high precipitation, overbank flooding from intermittent streams may augment the amount of water in some vernal pools (Hanes *et al.* 1990). Vernal pool studies conducted in the Sacramento Valley indicate that the contribution of subsurface or overland flows is significant only in years of high precipitation when pools are already saturated (Hanes and Stromberg 1996). Downward percolation of water in vernal pool basins is prevented by the presence of an impervious subsurface layer, such as a claypan, hardpan, or volcanic stratum (Holland 1976, 1988).

Researchers have found that vernal pools located in San Diego County are associated with five soil series types, Huerhehuero, Olivenhain, Placentia, Redding, and Stockpen (Bauder and McMillan 1991). These soil types have a nearly impermeable surface or subsurface soil layer with a flat or gently sloping topography (Service 1998). Due to local topography and geology, the

pools are usually clustered into pool complexes (Bauder 1986; Holland and Jain 1977). Pools within a complex are typically separated by distances on the order of meters, and may form dense, interconnected mosaics of small pools or a more sparse scattering of larger pools.

Vernal pool systems are often characterized by different landscape features including mima mound (miniature mounds) micro-topography, varied pool basin size and depth, and vernal swales (low tract of marshy land). Vernal pool complexes that support one to many distinct vernal pools are often interconnected by a shared watershed.

San Diego County supports the largest number of remaining vernal pools occupied by the San Diego fairy shrimp. Scientists estimated that, historically, vernal pool soils covered approximately 208 hectares (ha) (520 acres (ac)) of San Diego County (Bauder and McMillan 1991). Based on available information at the time of listing, we estimate that fewer than 82 ha (202 ac) of occupied vernal pool habitat (based on vernal pool basins and not their associated watersheds) remain in the county, of which an estimated 70 percent occurs on military lands (Bauder and Weir 1991). Keeler-Wolf *et al.* (1995) concluded that the greatest recent losses of vernal pool habitat in San Diego County have occurred in Mira Mesa, Rancho Penasquitos, and Kearny Mesa, which accounted for 73 percent of all the pools destroyed in the region during the 7-year period between 1979 and 1986. Other substantial losses have occurred in the Otay Mesa area, where over 40 percent of the vernal pools were destroyed between 1979 to 1990. Similar to San Diego County, vernal pool habitat was once extensive on the coastal plain of Los Angeles and Orange counties (Mattoni and Longcore 1997). Unfortunately, there has been a near-total loss of vernal pool habitat in these areas (Ferren and Pritchett 1988; Keeler-Wolf *et al.* 1995).

Urban and water development, flood control, highway and utility projects, as well as conversion of wildlands to agricultural use, have eliminated vernal pools and/or their watersheds in southern California (Jones and Stokes Associates 1987). Changes in hydrologic pattern, overgrazing, and off-road vehicle use also imperil this aquatic habitat and San Diego fairy shrimp. The flora and fauna in vernal pools or swales can change if the hydrologic regime is altered (Bauder 1986). Human activities that reduce the extent of the watershed or that alter runoff patterns (*i.e.*, amounts and seasonal distribution of water) may eliminate San Diego fairy

shrimp, reduce their population sizes or reproductive success, or shift the location of sites inhabited by this species. The California Department of Fish and Game's Natural Diversity Data Base ranks the vernal pool habitat type in priority class G1-S1, which denotes communities in the State of California that occur over fewer than 809 ha (2,000 ac) globally.

Previous Federal Action

David Hogan, formerly of the San Diego Biodiversity Project in Julian, California; Dr. Denton Belk of Our Lady of the Lake University in San Antonio, Texas; and the Biodiversity Legal Foundation petitioned us to list the San Diego fairy shrimp as an endangered species, in a letter dated March 16, 1992. We received the petition on March 24, 1992. On August 4, 1994, we published a proposed rule in the **Federal Register** (59 FR 39874) to list the San Diego fairy shrimp as an endangered species. The proposed rule was the first Federal action on the San Diego fairy shrimp, and also constituted the 12-month petition finding, as required by section 4(b)(3)(B) of the Act. On February 3, 1997, we published a final rule determining the San Diego fairy shrimp to be an endangered species (62 FR 4925).

At the time of listing, we concluded that designation of critical habitat for the San Diego fairy shrimp was not prudent because such designation would not benefit the species. We were also concerned that critical habitat designation would likely increase the degree of threat from vandalism or other human-induced impacts. We were aware of several instances of apparently intentional habitat destruction that had occurred during the listing process. However, we have determined that the threats to this species, and its habitat, from specific instances of habitat destruction do not outweigh the broader educational and any potential regulatory and other possible benefits that designation of critical habitat would provide for this species. A designation of critical habitat will provide educational benefits by formally identifying those areas essential to the conservation of the species, and the areas likely to be the focus of our recovery efforts for the San Diego fairy shrimp. Therefore, we conclude that the benefits of designating critical habitat on lands essential for the conservation of the San Diego fairy shrimp will not increase incidences of vandalism above current levels for this species.

On October 14, 1998, the Southwest Center for Biological Diversity filed a lawsuit in Federal District Court for the

Southern District of California for our failure to designate critical habitat for the San Diego fairy shrimp. On September 16, 1999, the court ordered that "On or before February 29, 2000, the Service shall submit for publication in the **Federal Register**, a proposal to withdraw the existing not prudent critical habitat determination together with a new proposed critical habitat determination for the San Diego fairy shrimp" (*Southwest Center for Biodiversity v. United States Department of the Interior et al.*, CV 98-1866) (S.D. Cal.).

On March 8, 2000, we published a proposed rule to designate critical habitat for the San Diego fairy shrimp (65 FR 12181). We proposed critical habitat within approximately 14,771 ha (36,501 ac) within Orange and San Diego counties, California. The public comment period was open for 60 days. On August 21, 2000, we published a notice of availability for the draft economic analysis and reopening of the comment period for the proposed rule for the San Diego fairy shrimp critical habitat (65 FR 50672). The second comment period closed on September 5, 2000.

Critical Habitat

Critical habitat is defined in section 3 of the Act as—(i) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection and; (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures that are necessary to bring an endangered species or a threatened species to the point at which listing under the Act is no longer necessary.

In order to be included in a critical habitat designation, the habitat must first be "essential to the conservation of the species." Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas that provide essential life cycle needs of the species (*i.e.*, areas on which are found the primary constituent elements, as defined at 50 CFR 424.12(b)).

Section 4 requires that we designate critical habitat at the time of listing and based on what we know at the time of the designation. When we designate critical habitat at the time of listing or

under short court-ordered deadlines, we will often not have sufficient information to identify all areas of critical habitat. We are required, nevertheless, to make a decision and thus must base our designations on what, at the time of designation, we know to be critical habitat.

Within the geographic area occupied by the species, we will designate only areas currently known to be essential. Essential areas should already have the features and habitat characteristics that are necessary to sustain the species. We will not speculate about what areas might be found to be essential if better information became available, or what areas may become essential over time. If the information available at the time of designation does not show that an area provides essential life cycle needs of the species, then the area should not be included in the critical habitat designation. Within the geographic area occupied by the species, we will not designate areas that do not now have the primary constituent elements, as defined at 50 CFR 424.12(b), that provide essential life cycle needs of the species.

Our regulations state that, "The Secretary shall designate as critical habitat areas outside the geographic area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species." (50 CFR 424.12(e)). Accordingly, when the best available scientific and commercial data do not demonstrate that the conservation needs of the species require designation of critical habitat outside of occupied areas, we will not designate critical habitat in areas outside the geographic area occupied by the species.

The Service's Policy on Information Standards Under the Endangered Species Act, published in the **Federal Register** on July 1, 1994 (Vol. 59, p. 34271), provides criteria, establishes procedures, and provides guidance to ensure that decisions made by the Service represent the best scientific and commercial data available. It requires Service biologists, to the extent consistent with the Act and with the use of the best scientific and commercial data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, a primary source of information should be the listing package for the species. Additional information may be obtained from a recovery plan, articles in peer-reviewed journals, conservation plans developed by states and counties,

scientific status surveys and studies, and biological assessments or other unpublished materials (*i.e.* gray literature).

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species. For these reasons, all should understand that critical habitat designations do *not* signal that habitat outside the designation is unimportant or may not be required for recovery. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under Section 7(a)(1) and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard and the Section 9 take prohibition, as determined on the basis of the best available information at the time of the action. We specifically anticipate that federally funded or assisted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

Methods

In determining areas that are essential to conserve the San Diego fairy shrimp, we used the best scientific and commercial data available. This included data from research and survey observations published in peer-reviewed articles, recovery criteria outlined in the Recovery Plan for Vernal Pools of Southern California (Recovery Plan) (Service 1998), regional Geographic Information System (GIS) vegetation and species coverages (including vegetation layers for Orange and San Diego Counties), data collected on the U.S. Marine Corps (Marine Corps) Air Station, Miramar (Miramar) and Marine Corps Station, Camp Pendleton (Camp Pendleton), data collected from reports submitted by biologists holding section 10(a)(1)(A) recovery permits, and comments received on the proposed rule and economic analysis.

Primary Constituent Elements

In accordance with sections 3(5)(A)(i) and 4(b)(2) of the Act, and regulations

at 50 CFR 424.12, in determining which areas to propose as critical habitat, we are required to base critical habitat determinations on the best scientific and commercial data available. We consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species, and that may require special management considerations or protection. These include, but are not limited to: space for individual and population growth, and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter; sites for breeding and reproduction; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The primary constituent elements for the San Diego fairy shrimp are those habitat components that are essential for the primary biological needs of foraging, sheltering, reproduction, and dispersal. The primary constituent elements are found in those areas that support vernal pools or other ephemeral depressional wetlands. Primary constituent elements include the vernal pool basins and associated watersheds, and include, but are not limited to: small to large vernal pools with shallow to moderate depths that hold water for sufficient lengths of time necessary for San Diego fairy shrimp incubation and reproduction, but not necessarily every year; associated watershed(s) and hydrology for vernal pool basins and their related vernal pool complexes; ephemeral depressional wetlands, flat or gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat. The associated watersheds are essential in maintaining the hydrology of vernal pools necessary to support San Diego fairy shrimp. The long-term conservation of vernal pools that are essential for the recovery of the San Diego fairy shrimp include the protection and management of their associated watersheds. Primary constituent elements or components thereof are found in all the areas designated for critical habitat.

Criteria Used To Identify Critical Habitat

In an effort to map areas essential to the conservation of the species, we used data on known San Diego fairy shrimp locations, and those vernal pools and vernal pool complexes that were identified in the Recovery Plan as essential for the stabilization and reclassification of the species. The long-

term conservation of the San Diego fairy shrimp depends upon the protection and management of vernal pools within each management area to retain local genetic differentiation, reduce the risk of losing individual species or pool types, buffer environmental variation, and provide for the opportunity for re-establishment of new populations (Service 1998). We then evaluated those areas based on the hydrology, watershed and topographic features. Based on this evaluation, a 250 m (820 ft) Universal Transverse Mercator (UTM) (North American Datum 1927 (NAD 27)) grid was overlaid on top of those vernal pool complexes and their associated essential watersheds. In those cases where occupied vernal pools were not identified in the Recovery Plan, we relied on recent scientific data to update the map coverage.

In defining critical habitat boundaries, we made an effort to avoid developed areas, such as towns and other similar lands, that are unlikely to contribute to San Diego fairy shrimp conservation. However, the minimum mapping unit

that we used did not allow us to exclude all developed areas, such as towns, or housing developments, or other lands unlikely to contain the primary constituent elements essential for conservation of the San Diego fairy shrimp. Existing features and structures within the boundaries of the mapped units, such as buildings, roads, aqueducts, railroads, airports, other paved areas, lawns, landscaped areas, and other urban areas, will not contain one or more of the primary constituent elements. Federal actions limited to those areas, therefore, would not trigger a section 7 consultation, unless they affect the species and/or primary constituent elements in adjacent critical habitat. Within the area designated as critical habitat, only an estimated 18 ha (45 ac) is of unknown occupancy. The remaining complexes of vernal pools and their associated watersheds within the designated critical habitat area are within the geographical area occupied by San Diego fairy shrimp.

In summary, in determining areas that are essential to conserve San Diego fairy

shrimp, we used the best scientific information available to us. The critical habitat areas described below constitute our best assessment of areas needed for the species' conservation and recovery.

Critical Habitat Designation

The approximate area of critical habitat by county and land ownership is shown in Table 1. Critical habitat includes San Diego fairy shrimp habitat throughout the species' range in the United States (*i.e.*, Orange and San Diego Counties, California). Lands designated are under private, State, and Federal ownership, with Federal lands including lands managed by the U.S. Department of Defense (DOD) and the Service. Lands designated as critical habitat have been divided into five Critical Habitat Units. A brief description of each unit and the reasons for designating it as critical habitat are presented below. The units are generally based on geographical location of the vernal pools, soil types, and local variation of topographic position (*i.e.*, coastal mesas, inland valley).

TABLE 1.—APPROXIMATE AREA ENCOMPASSING DESIGNATED CRITICAL HABITAT IN HECTARES (HA) (ACRES (AC)) BY COUNTY AND LAND OWNERSHIP

County	Federal land ¹	Local/state land	Private land	Total
Orange	N/A	25 ha (62 ac)	N/A	25 ha (62 ac)
San Diego	88 ha (218 ac)	154 ha (379 ac)	1,362 ha (3,366 ac)	1,604 ha (3,963 ac)
Total	88 ha (218 ac)	179 ha (441 ac)	1,362 ha (3,366 ac)	1,629 ha (4,025 ac)

¹ Includes Department of Defense and U.S. Fish and Wildlife Service lands.

Unit 1: Orange County (Fairview Regional Park)

Unit 1 encompasses approximately 25 ha (62 ac) in Orange County within the Los Angeles Basin-Orange Management Area as outlined in the Recovery Plan. The Fairview Regional Park vernal pool complex is occupied by the species and is designated as critical habitat. This unit provides the northern extent of this species' distribution and represents the historic distribution of coastal terrace vernal pools in this area. This northernmost unit is essential to the conservation of the San Diego fairy shrimp by maintaining the ecological distribution of this species, retaining the genetic diversity of this population, and to provide a buffer against catastrophic events.

Unit 2: San Diego: North Coastal Mesa

Unit 2 encompasses approximately 79 ha (195 ac) in San Diego County within the San Diego. It includes a small

portion of Camp Pendleton and an area within the City of Carlsbad as outlined in the Recovery Plan. The area designated on Camp Pendleton includes lands leased by the California State Department of Parks and Recreation and private interests from Camp Pendleton. Within the jurisdiction of the City of Carlsbad, one vernal pool complex located in the vicinity of Palomar Airport and one complex at Poinsettia Lane train station are designated as critical habitat. These vernal pool complexes represent vernal pool habitat associated with coastal terraces found north of the San Dieguito River. Given the rarity of San Diego fairy shrimp and the limited amount of vernal pool habitat, this unit is essential to the conservation of this species because of the broad array of vernal pool complexes that are represented. This unit supports recovery criteria by maintaining a diversity of vernal pools that support the genetic diversity and

population stability of the San Diego fairy shrimp.

Unit 3: San Diego: Inland Valley

Unit 3 encompasses 1,231 ha (3,042 ac) in San Diego County within the San Diego: Inland Valley Management Area as outlined in the Recovery Plan. Lands designated contain vernal pool complexes within the jurisdiction of the City of San Marcos and the community of Ramona. In the community of Ramona, one of the complexes is within the County's Ramona Airport boundaries. These vernal pool complexes are generally isolated from maritime influence (greater than 10 km (6 mi) from the coast) and are representative of vernal pools associated with alluvial or volcanic type soils. Approximately 18 ha (45 ac) of this unit are currently of unknown occupancy. This unit provides for the conservation of the San Diego fairy shrimp by protecting vernal pools within the

geographical range, maintaining the diversity of vernal pool habitats, and retaining the genetic diversity of these populations.

Unit 4: San Diego: Central Coastal Mesa

Unit 4 encompasses 225 ha (556 ac) in San Diego County within the San Diego: Central Coastal Mesa Management Area as outlined in the Recovery Plan. Lands designated contain vernal pool complexes within the jurisdiction of the City of San Diego, State of California, Service, and private interests. These vernal pool complexes are associated with coastal terraces and mesas found south of the San Dieguito River to the San Diego Bay. This unit protects a diversity of vernal pools that support the San Diego fairy shrimp. Protection of this broad representation of vernal pools furthers the recovery of this species by maintaining genetic diversity and stabilizing populations.

Unit 5: San Diego: Southern Coastal Mesa

Unit 5 encompasses 69 ha (170 ac) in San Diego County within the San Diego: Southern Coastal Mesa Management Area as outlined in the Recovery Plan. Lands designated include vernal pool complexes within the jurisdiction of the Service, City of San Diego, City of Chula Vista, County of San Diego, U.S. Immigration and Naturalization Service (INS), and private interests. These vernal pool complexes are associated with coastal mesas from the Sweetwater River south to the international border with Mexico. This southernmost unit is essential to the conservation of the San Diego fairy shrimp by maintaining the ecological distribution of this species, retaining the genetic diversity of this population, and to provide a buffer against catastrophic events.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of a threatened or endangered species, or result in the destruction or adverse modification of critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Individuals, organizations, States, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal

funding. In 50 CFR 402.02, "jeopardize the continued existence" (of a species) is defined as engaging in an activity likely to result in an appreciable reduction in the likelihood of survival and recovery of a listed species. "Destruction or adverse modification" (of critical habitat) is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for the survival and recovery of the listed species for which critical habitat was designated. Thus, the definitions of "jeopardy" to the species and "adverse modification" of critical habitat are nearly identical.

Section 7(a) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat, if any is designated or proposed. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. Conference reports provide conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The conservation recommendations in a conference report are advisory. If a species is listed or critical habitat is designated, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Through this consultation, we would ensure that the permitted actions do not adversely modify critical habitat.

When we issue a biological opinion concluding that a project is likely to result in the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. Reasonable and prudent alternatives are defined at 50 CFR 402.02 as alternative actions identified during consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Director believes would avoid resulting

in the destruction or adverse modification of critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where critical habitat is subsequently designated, and the Federal agency has retained discretionary involvement or control over the action or such discretionary involvement or control is authorized by law. Consequently, some Federal agencies may request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions may affect designated critical habitat and they have retained discretionary involvement in the action. Further, some Federal agencies may have conferred with us on proposed critical habitat. We may adopt the formal conference report as the biological opinion when critical habitat is designated, if no significant new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)).

Activities on Federal lands that may affect the San Diego fairy shrimp or its critical habitat will require section 7 consultation. Activities on private or State lands requiring a permit from a Federal agency, such as a permit from the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act, or some other Federal action, including funding (e.g., Federal Highway Administration, Federal Aviation Administration, or Federal Emergency Management Agency) will also continue to be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat and actions on non-Federal lands that are not federally funded, authorized, or permitted do not require section 7 consultation.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may adversely modify such habitat, or that may be affected by such designation.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and require that a section 7 consultation be conducted include, but are not limited to:

(1) Any activity that results in discharge of dredged or fill material, excavation, or mechanized land clearing of ephemeral and/or vernal pool basins (e.g., road and fence construction and maintenance, right-of-way designation, airport improvement activities, and regulation of agricultural activities);

(2) Any activity that alters the watershed, water quality, or water quantity to an extent that water quality becomes unsuitable to support San Diego fairy shrimp, or any activity that significantly affects the natural hydrologic function of the vernal pool system; and

(3) Activities that could lead to the introduction of exotic species into San Diego fairy shrimp habitat.

Activities that may destroy or adversely modify critical habitat include those that alter the primary constituent elements to an extent that the value of critical habitat for both the survival and recovery of the San Diego fairy shrimp is appreciably reduced. We note that such activities may also jeopardize the continued existence of the species.

To properly portray the effects of critical habitat designation, we must first compare the section 7 requirements for actions that may affect critical habitat with the requirements for actions that may affect a listed species. Section 7 prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat. Actions likely to "jeopardize the continued existence" of a species are those that would appreciably reduce the likelihood of the species' survival and recovery. Actions likely to "destroy or adversely modify" critical habitat are those that would appreciably reduce the value of critical habitat for the survival and recovery of the listed species.

Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Given the similarity of these definitions, actions likely to destroy or adversely modify critical habitat would almost always result in jeopardy to the species concerned, particularly when the area of the proposed action is occupied by the species concerned. In those cases, critical habitat provides little additional protection to a species, and the ramifications of its designation are few or none. However, if occupied habitat becomes unoccupied in the future, there is a potential benefit from critical habitat in such areas.

If you have questions regarding whether specific activities will constitute destruction or adverse

modification of critical habitat, contact the Field Supervisor, Carlsbad Fish and Wildlife Office (see **ADDRESSES** section). Requests for copies of the regulations on listed wildlife, and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Branch of Endangered Species, 911 N.E. 11th Ave, Portland, Oregon 97232 (telephone 503/231-2063; facsimile 503/231-6243).

All lands designated as critical habitat are within the geographical area occupied by the species and are likely to be used by the San Diego fairy shrimp. Federal agencies already consult with us on activities in areas currently occupied by the species, or if the species may be affected by the action to ensure that their actions do not jeopardize the continued existence of the species. Thus, we do not anticipate additional regulatory protection will result from critical habitat designation.

Exclusions Under Section 3(5)(A) Definition

Special management or protection is a term that originates in the definition of critical habitat in section 3 of the Act that refers to areas within the current range of the species. For areas in the current range of the species, we first determine whether the area contains the physical and biological features essential to the conservation of the species and the area has or needs special management or protection. Additional special management is not required if adequate management or protection is already in place. Adequate special management or protection is provided by a legally operative plan/agreement that addresses the maintenance and improvement of the primary constituent elements important to the species and manages for the long-term conservation of the species. We use the following three criteria to determine if a plan provides adequate special management or protection: (1) A current plan/agreement must be complete and provide sufficient conservation benefit to the species, (2) the plan must provide assurances that the conservation management strategies will be implemented, and (3) the plan must provide assurances that the conservation management strategies will be effective, *i.e.*, provide for periodic monitoring and revisions as necessary. If all of these criteria are met, then the lands covered under the plan would no longer meet the definition of critical habitat.

The Sikes Act Improvements Act of 1997 (Sikes Act) requires each military installation that includes land and water suitable for the conservation and

management of natural resources to complete, by November 17, 2001, an Integrated Natural Resources Management Plan (INRMP). An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found there. Each INRMP includes an assessment of the ecological needs on the installation, including needs to provide for the conservation of listed species; a statement of goals and priorities; a detailed description of management actions to be implemented to provide for these ecological needs; and a monitoring and adaptive management plan. We consult with the military on the development and implementation of INRMPs for installations with listed species. We believe bases that have completed and approved INRMPs that address the needs of the species generally do not meet the definition of critical habitat discussed above, as they require no additional special management or protection.

We evaluated Department of Defense (DOD) Integrated Natural Resource Management Plans (INRMPs) for DOD land that was within the proposed critical habitat to determine whether any INRMPs met the special management criteria. To date, Marine Corps Air Base, Miramar is the only DOD installation that has completed a final INRMP that provides for sufficient conservation management and protection for the San Diego fairy shrimp. We reviewed this plan and determined that it addresses and meets the three criteria. Therefore, lands on Marine Corps Air Base, Miramar no longer meet the definition of critical habitat, and they have been excluded from the final designation of critical habitat for the San Diego fairy shrimp.

Exclusions Under Section 4(b)(2)

Subsection 4(b)(2) of the Act allows us to exclude areas from critical habitat designation where the benefits of exclusion outweigh the benefits of designation, provided the exclusion will not result in the extinction of the species. For the following reasons, we believe that in most instances the benefits of excluding HCPs from critical habitat designations will outweigh the benefits of including them.

(1) Benefits of Inclusion

The benefits of including HCP lands in critical habitat are normally small. The principal benefit of any designated critical habitat is that activities in such habitat that may affect it require consultation under section 7 of the Act. Such consultation would ensure that

adequate protection is provided to avoid adverse modification of critical habitat. Where HCPs are in place, our experience indicates that this benefit is small or non-existent. Currently approved and permitted HCPs are already designed to ensure the long-term survival of covered species within the plan area. Where we have an approved HCP, lands that we ordinarily would define as critical habitat for the covered species will normally be protected in reserves and other conservation lands by the terms of the HCPs and their implementation agreements. These HCPs and implementation agreements include management measures and protections for conservation lands that are crafted to protect, restore, and enhance their value as habitat for covered species.

In addition, an HCP application must itself be consulted upon. While this consultation will not look specifically at the issue of adverse modification of critical habitat, it will look at the very similar concept of jeopardy to the listed species in the plan area. Since HCPs, particularly large regional HCPs, address land use within the plan boundaries, habitat issues within the plan boundaries will have been thoroughly addressed in the HCP and the consultation on the HCP. Our experience is also that, under most circumstances, consultations under the jeopardy standard will reach the same result as consultations under the adverse modification standard. Implementing regulations (50 CFR Part 402) define "jeopardize the continued existence of" and "destruction or adverse modification of" in virtually identical terms. Jeopardize the continued existence of means to engage in an action "that reasonably would be expected * * * to reduce appreciably the likelihood of both the survival and recovery of a listed species." Destruction or adverse modification means an "alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species." Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species, in the case of critical habitat by reducing the value of the habitat so designated. Thus, actions satisfying the standard for adverse modification are nearly always found to also jeopardize the species concerned, and the existence of a critical habitat designation does not materially affect the outcome of consultation. Additional measures to protect the habitat from adverse modification are not likely to be required.

Further, HCPs typically provide for greater conservation benefits to a covered species than section 7 consultations because HCPs assure the long term protection and management of a covered species and its habitat, and funding for such management through the standards found in the 5-Point Policy for HCPs (64 FR 35242) and the HCP No Surprises regulation (63 FR 8859). Such assurances are typically not provided by section 7 consultations which, in contrast to HCPs, often do not commit the project proponent to long term special management or protections. Thus, a consultation typically does not accord the lands it covers the extensive benefits an HCP provides.

The development and implementation of HCPs provide other important conservation benefits, including the development of biological information to guide conservation efforts and assist in species recovery and the creation of innovative solutions to conserve species while allowing for development. The educational benefits of critical habitat, including informing the public of areas that are important for the long-term survival and conservation of the species, are essentially the same as those that would occur from the public notice and comment procedures required to establish an HCP, as well as the public participation that occurs in the development of many regional HCPs. For these reasons, then, we believe that designation of critical habitat has little benefit in areas covered by HCPs.

(2) Benefits of Exclusion

The benefits of excluding HCPs from being designated as critical habitat may be more significant. During two public comment periods on our critical habitat policy, we received several comments about the additional regulatory and economic burden of designating critical habitat. These include the need for additional consultation with the Service and the need for additional surveys and information gathering to complete these consultations. HCP applicants have also stated that they are concerned that third parties may challenge HCPs on the basis that they result in adverse modification or destruction of critical habitat, should critical habitat be designated within the HCP boundaries.

The benefits of excluding HCPs include relieving landowners, communities and counties of any additional minor regulatory review that might be imposed by critical habitat. Many HCPs, particularly large regional HCPs, take many years to develop and, upon completion, become regional conservation plans that are consistent with the recovery of covered species.

Many of these regional plans benefit many species, both listed and unlisted. Imposing an additional regulatory review after HCP completion may jeopardize conservation efforts and partnerships in many areas and could be viewed as a disincentive to those developing HCPs. Excluding HCPs provides us with an opportunity to streamline regulatory compliance and confirms regulatory assurances for HCP participants.

A related benefit of excluding HCPs is that it would encourage the continued development of partnerships with HCP participants, including states, local governments, conservation organizations, and private landowners, that together can implement conservation actions we would be unable to accomplish alone. By excluding areas covered by HCPs from critical habitat designation, we preserve these partnerships, and, we believe, set the stage for more effective conservation actions in the future.

In general, then, we believe the benefits of critical habitat designation to be small in areas covered by approved HCPs. We also believe that the benefits of excluding HCPs from designation are significant. Weighing the small benefits of inclusion against the benefits of exclusion, including the benefits of relieving property owners of an additional layer of approvals and regulation, together with the encouragement of conservation partnerships, would generally result in HCPs being excluded from critical habitat designation under Section 4(b)(2) of the Act.

Not all HCPs are alike with regard to species coverage and design. Within this general analytical framework, we need to evaluate completed and legally operative HCPs in the range of the San Diego fairy shrimp to determine whether the benefits of excluding these particular areas outweigh the benefits of including them.

Several habitat conservation planning efforts have been completed within the range of the San Diego fairy shrimp. Principal among these is the San Diego Multiple Species Conservation Program (MSCP) and its subarea plans. The MSCP provides conservation measures for the San Diego fairy shrimp even though take authorization, should any be needed, is designed to come from a subsequent permitting process (typically through a section 7 consultation with the Corps). The MSCP will result in the avoidance of the majority of fairy shrimp habitat within the planning area. The MSCP provides that fairy shrimp habitat should be completely avoided to the maximum extent practicable

pursuant to the Clean Water Act Section 404(b)(1) guidelines. Unavoidable impacts to vernal pool habitats are to be minimized and mitigated to achieve no net loss of wetland function and value and to provide additional protective measures. Moreover, the MSCP provides for adaptive management and monitoring to ensure the long-term viability of the vernal pool habitat. The benefits of excluding lands covered by these HCPs would be significant in preserving positive relationships with our conservation partners, lessening potential additional regulatory review and potential economic burdens, reinforcing the regulatory assurances provided for in the implementation agreements for the approved HCPs, and providing for more established and cooperative partnerships for future conservation efforts. In the economic analysis completed for the San Diego fairy shrimp critical habitat designation, we concluded that some development companies may be affected by any modifications to projects or incremental delays in the implementation of projects due to consultations that occur as a result of critical habitat designation for the San Diego fairy shrimp. In addition, we concluded that landowners may incur costs to determine whether their land contains the primary constituent elements for the San Diego fairy shrimp, and may experience temporary changes in property values as markets respond to the uncertainty associated with critical habitat designation. Thus, we determined that the benefits of excluding critical habitat within the San Diego MSCP outweigh the benefits of designation. Consequently, these lands have not been designated as critical habitat for the San Diego fairy shrimp.

In summary, the benefits of including the MSCP in critical habitat for the San Diego fairy shrimp include increased educational benefits and minor additional management protections and measures. The benefits of excluding MSCP from being designated as critical habitat for the San Diego fairy shrimp include the additional conservation measures for the San Diego fairy shrimp and other listed species, preservation of partnerships that may lead to future conservation, and the avoidance of the minor regulatory and economic burdens associated with the designation of critical habitat. The benefits of excluding these areas from critical habitat designation outweigh the benefits of including these areas. Furthermore, we have determined that these exclusions will not result in the extinction of the species. We have already completed section 7

consultation on the impacts of these HCPs on the species. We have determined that they will not jeopardize the continued existence of the species, meaning that they will not appreciably reduce the survival and recovery of the species.

Another HCP effort is the Natural Community Conservation Planning (NCCP) program in Orange and San Diego Counties. The NCCP/HCP effort in Orange County Central/Coastal is designed to provide the same level of protection for San Diego fairy shrimp as the San Diego MSCP. However, unlike the San Diego MSCP, the vernal pool complex at Fairview Regional Park within Orange County occurs within a city which is not a participating jurisdiction under the plan. The benefits from designating this area as critical habitat are not outweighed by the benefits of the HCP. Therefore, the Fairview Regional Park vernal pool complex is included as critical habitat.

We anticipate that future HCPs in the range of the San Diego fairy shrimp will include it as a covered species and provide for its long-term conservation. We expect that HCPs undertaken by local jurisdictions (e.g., counties, cities) and other parties will identify, protect, and provide appropriate management for those specific lands within the boundaries of the plans that are essential for the long-term conservation of the species. Section 10(a)(1)(B) of the Act states that HCPs must meet issuance criteria, including minimizing and mitigation for any take of the listed species covered by the permit to the maximum extent practicable, and that the taking must not appreciably reduce the likelihood of the survival and recovery of the species in the wild. We fully expect that our future analysis of HCPs and section 10(a)(1)(B) permits under section 7 will show that covered activities carried out in accordance with the provisions of the HCPs and section 10(a)(1)(B) permits will not result in the destruction or adverse modification of critical habitat designated for the San Diego fairy shrimp.

In the event that future HCPs covering the San Diego fairy shrimp are developed within the boundaries of designated critical habitat, we will work with applicants to ensure that the HCPs provide for protection and management of habitat areas essential for the conservation of this species. This will be accomplished by either directing development and habitat modification to nonessential areas, or appropriately modifying activities within essential habitat areas so that such activities will not adversely modify the primary constituent elements. The HCP

development process provides an opportunity for more intensive data collection and analysis regarding the use of particular habitat areas by the San Diego fairy shrimp. The process also enables us to conduct detailed evaluations of the importance of such lands to the long-term survival of the species in the context of constructing a biologically configured system of interlinked habitat blocks.

We will provide technical assistance and work closely with applicants throughout the development of future HCPs to identify lands essential for the long-term conservation of the San Diego fairy shrimp and appropriate management for those lands. The take minimization and mitigation measures provided under these HCPs are expected to protect the essential habitat lands designated as critical habitat in this rule. If an HCP that addresses the San Diego fairy shrimp as a covered species is ultimately approved, we will reassess the critical habitat boundaries in light of the HCP. We will seek to undertake this review when the HCP is approved, but funding constraints may influence the timing of such a review.

In contrast to Marine Corps Air Base Miramar, Marine Corps Base Camp Pendleton (Camp Pendleton) has not yet completed their INRMP. Camp Pendleton has several substantial vernal pool complexes that support the San Diego fairy shrimp. In light of these factors, we proposed 4,902 ha (12,114 ac) of the approximately 50,000 ha (125,000 acre) base as critical habitat for the San Diego fairy shrimp. Out of the 46 training or joint use areas on Camp Pendleton, the proposal included all of five such areas, which were concentrated on the coastal portion of the Base. In addition, the proposal included habitat found elsewhere on the base.

The INRMP for Camp Pendleton will be completed by the statutory deadline of November 17, 2001. We will consult with the Marines under section 7 of the Act on the development and implementation of the INRMP. We fully expect that, once the INRMP is completed and approved, areas of the base included in the proposed critical habitat designation will not meet the definition of critical habitat, as they will require no additional special management or protection.

Today, as the INRMP has not yet been completed and approved, these lands on the base meet the definition of critical habitat. Nevertheless, we have determined that it is appropriate to exclude Camp Pendleton from this critical habitat designation under section 4(b)(2). The main benefit of this

exclusion is ensuring that the mission-critical military training activities can continue without interruption at Camp Pendleton while the INRMP is being completed. On March 30, 2000, at the request of the Marines, we initiated formal consultation with Camp Pendleton on their uplands activities. These activities include military training, maintenance, fire management, real estate, and recreation programs. Upon completion, this consultation will address the 93 percent of the Base not included in our 1995 opinion concerning the Base's programmatic conservation plan for riparian and estuarine/beach ecosystems (U.S. Fish and Wildlife Service 1995). Because of the immense complexity of dealing with a multitude of hard-to-define upland activities and numerous federally listed plants and animals, we expect completion of the consultation and issuance of our biological opinion to take several months to a year.

The proposed critical habitat designation included about 4,902 ha (12,114 ac), or about 10 percent of the Base. If critical habitat is designated on Camp Pendleton for the San Diego fairy shrimp, the Marines would be compelled by their interpretation of the Endangered Species Act to significantly curtail necessary training within the area designated as critical habitat, to the detriment of mission-critical training capability, until the consultation is concluded, up to a year from now. As a result, the Base's utility as a Marine training site would be limited. The Marines have no alternative site suitable for the kinds of training that occur on the Base.

In contrast, the benefits of designating critical habitat on the base now are small. The primary benefit of designation is the prohibition on destruction or adverse modification of critical habitat under section 7 of the Act. However, we believe that section 7 consultation on any proposed action on the base that would result in an adverse modification conclusion would also result in a jeopardy conclusion, and we are now engaged in formal consultation with the Marines on their activities in vernal pool habitat on the Camp Pendleton. In addition, the Marines have a statutory obligation under the Sikes Act to complete an INRMP for Camp Pendleton about 13 months from now; as noted above, we expect that, when completed and adopted, this INRMP will provide equal or greater protection to San Diego fairy shrimp habitat on the base than a critical habitat designation.

We conclude that the benefits of excluding Camp Pendleton exceed the

benefits of including the base in the critical habitat designation; further, we have determined that excluding the base will not result in the extinction of the San Diego fairy shrimp, as sufficient vernal pools remain within the final critical habitat designation and sections 7(a)(2) and 9 of the Act still apply to the activities affecting San Diego fairy shrimp on Camp Pendleton. This exclusion does not include that part of Camp Pendleton leased to the State of California and included within San Onofre State Park (including San Mateo Park). Because these lands are used minimally, if at all, by the Marines for training, the 16 ha (40 ac) of lands proposed within the state park are retained in the final designation.

Should additional information become available that changes our analysis of the benefits of excluding any of these (or other) areas compared to the benefits of including them in the critical habitat designation, we may revise this final designation accordingly. Similarly, if new information indicates any of these areas should not be included in the critical habitat designation because they no longer meet the definition of critical habitat, we may revise this final critical habitat designation. If, consistent with available funding and program priorities, we elect to revise this designation, we will do so through a subsequent rulemaking.

Summary of Comments and Recommendations

In the March 8, 2000, proposed rule (65 FR 12181), we requested all interested parties to submit comments on the specifics of the proposal including information, policy, treatment of HCPs, and proposed critical habitat boundaries. The first comment period closed on May 8, 2000. The comment period was reopened from August 21 to September 5, 2000, (65 FR 50672), to allow for additional comments on the proposed rule and comments on the draft economic analysis of the proposed critical habitat. Due to an error in the date of the deadline for public comment that was identified in the **Federal Register** notice (65 FR 50672), we published a correction on August 25, 2000 (65 FR 51903). We entered comments received from May 8 to August 21, 2000, into the administrative record for the second comment period. Comments received following the close of the second comment period (a total of 3) were entered into the administrative record and marked as late. These later comments were reviewed to determine if they raised any new or substantial issues that had not been raised by any earlier comment.

None of the late comments raised a new or substantial issue that had not been raised earlier.

We contacted all appropriate State and Federal agencies, county governments, elected officials, and other interested parties and invited them to comment. In addition, we published newspaper notices inviting public comment in the following newspapers in southern California: Orange County Register, North County Times, and the San Diego Union-Tribune. These notices were published on March 8 and 9, 2000.

We requested four biologists familiar with the San Diego fairy shrimp and the conservation of vernal pools to peer review the proposed critical habitat designation. Two of the peer reviewers submitted comments on the proposed critical habitat designation, providing updated biological information, critical review, and editorial comments. We addressed their comments in the responses below, or incorporated them into other parts of this final rule.

We received a total of 31 comments during the 2 comment periods, from 2 Federal agencies, 3 State agencies, 5 local agencies, and 15 private organizations or individuals. Three commenters submitted comments more than once. We reviewed all comments received for substantive issues and new data regarding the San Diego fairy shrimp and critical habitat. We grouped comments of a similar nature into four general issues relating specifically to the proposed critical habitat determination and draft economic analysis on the proposed determination. These are addressed in the following summary.

Issue 1: Biological Justification and Methodology

(1) *Comment:* The broad or landscape scale of the proposed critical habitat includes areas that do not contain the primary constituent elements for the San Diego fairy shrimp. The statements in the proposed rule that only areas containing the primary constituent elements for the San Diego fairy shrimp are being proposed as critical habitat is confusing and does not allow for a defined boundary. Several commenters questioned the biological justification for proposing critical habitat for the San Diego fairy shrimp using such a landscape scale approach when specific, detailed information is available. Many commenters felt the mapping should be more detailed, and the critical habitat be more precisely defined, excluding areas that obviously are not San Diego fairy shrimp critical habitat. Some commenters criticized our use of a 1-km UTM grid as flawed because it included too much area unlikely to contain the

primary constituent elements, and that the Economic Analysis was also flawed because it was based on these large units, and was not in keeping with the Act's requirement to "narrowly define critical habitat." Additionally, one commenter stated that the designation was not based on the best scientific and commercial data available, and that the Service has not adequately provided notice of the precise outlined boundaries of critical habitat.

Our Response: We are required to describe critical habitat (50 CFR 424.12(c)) with specific limits using reference points and lines as found on standard topographic maps of the area. Due to the time constraints imposed by the court, and the absence of detailed GIS coverages during the preparation of the proposed determination, we used a 1 km (0.6 mi) UTM grid system to describe the boundaries of critical habitat units. Because of this large mapping scale, some areas not essential for the conservation of the San Diego fairy shrimp were included in the boundaries of proposed critical habitat.

In the preparation of the final determination, we had available for use, more detailed GIS coverages that allowed us to reduce our minimum mapping unit from a 1 km (0.6 mi) UTM grid square to a 250 m (820 ft) UTM grid square. This allowed for the exclusion of many areas not essential to the conservation of the San Diego fairy shrimp and resulted in the drawing of more refined critical habitat boundaries. Consequently, by using a finer scale grid, the total acreage of lands designated as critical habitat decreased. The lands within the mapped boundaries are considered critical habitat for the San Diego fairy shrimp.

(2) *Comment:* Several commenters voiced concern that their property was within proposed critical habitat boundaries even though it does not contain San Diego fairy shrimp habitat.

Our Response: We recognize that not all parcels of land within designated critical habitat contain the habitat components essential to San Diego fairy shrimp conservation. While we have refined the critical habitat maps since the proposal, even with the 250 m (820 ft) UTM grid square, the minimum mapping unit that we used in defining critical habitat boundaries for the San Diego fairy shrimp did not allow us to exclude all developed areas such as towns, housing developments, or other developed lands unlikely to provide habitat for the San Diego fairy shrimp. However, these areas are within designated critical habitat since they are within the defined boundaries of the designation. Because they do not

contain habitat for the species, we believe that activities that occur on them will not affect critical habitat. Therefore, these activities would not trigger a section 7 consultation.

(3) *Comment:* The final rule listing the San Diego fairy shrimp (62 FR 4925) as endangered stated that the species occupied only 81 ha (200 ac) of vernal pool habitat and is not a widespread species. The proposed rule for designating critical habitat (65 FR 12181) proposed over 14,771 ha (36,501 ac) as occupied critical habitat. How is this possible?

Our Response: The 81 ha (200 ac) estimate refers to the vernal pool basins occupied by the San Diego fairy shrimp at the time of listing in 1997. Since the listing of the San Diego fairy shrimp, additional surveys and scientific studies have increased our understanding of the distribution and habitat needs of this species and the amount of vernal pool habitats. Additionally, the 1 km (0.6 mi) grid size used in the proposed rule to define critical habitat also included some nonessential portions of the watersheds of the vernal pools. Thus, the 14,771 ha (36,501 ac) identified in the critical habitat proposal included both the vernal pool basins and their associated watersheds. We refined our grid size (250 m (820 ft)) and removed nonessential areas (10,171 ha (25,133 ac)), which reduced the amount of land designated as critical habitat for the final rule. The areas designated as critical habitat include both vernal pool basins and their associated watersheds. The associated watersheds are essential in maintaining the hydrology of vernal pools necessary to support San Diego fairy shrimp.

(4) *Comment:* "Incidentally-created habitat" should not be considered critical habitat, and take of the species in "incidentally-created habitats" should not be considered to "jeopardize" the species.

Our Response: "Incidentally created habitats" for the San Diego fairy shrimp are generally associated with existing vernal pools, vernal pools complexes, and ephemeral ponds and depressions. We define these habitats as "highly disturbed" or "modified" habitats as opposed to incidentally created, as often these areas supported natural vernal pools in the past. All of the designated critical habitat areas are considered essential to the conservation of the San Diego fairy shrimp as described in the Recovery Plan for Vernal Pools of Southern California. Therefore, these vernal pools, including any "incidentally created habitats," have been designated as critical habitat. The take prohibitions under section 9 of the

Act do not differentiate between natural and "incidentally created habitats."

Issue 2: Policy and Regulations

(5) *Comment:* Many commenters were supportive of the policy that lands covered by approved and future HCPs that provide take authorization for the San Diego fairy shrimp be excluded from critical habitat. Several commenters suggested that designated critical habitat be removed concurrently with approval of the HCP because they are concerned that additional consultations would be required as a result of critical habitat. Some commenters also asked if completed and Service-approved subarea plans would be exempted similar to HCPs. Many commenters questioned whether the MSCP would provide for adequate protection of fairy shrimp in lieu of critical habitat, when it has not done so in the past (without critical habitat).

Our Response: We recognize that critical habitat is only one of many conservation tools for federally listed species. HCPs are one of the most important tools for reconciling land use with the conservation of listed species on non-Federal lands. Section 4(b)(2) allows us to exclude from critical habitat designation areas where the benefits of exclusion outweigh the benefits of designation, provided the exclusion will not result in the extinction of the species. We believe that in most instances, the benefits of excluding HCPs from critical habitat designations will outweigh the benefits of including them. For this designation, we find that the benefits of exclusion outweigh the benefits of inclusion for the MSCP HCP issued for the San Diego fairy shrimp. However, lands without completed HCPs have been included as critical habitat. We expect to analyze the specific benefits in each particular critical habitat designation because not all HCPs are alike with regard to species coverage and design.

We anticipate that future HCPs in the range of the San Diego fairy shrimp will include it as a covered species and provide for its long-term conservation. We expect that HCPs undertaken by local jurisdictions (e.g., counties, cities) and other parties will identify, protect, and provide appropriate management for those specific lands within the boundaries of the plans that are essential for the long-term conservation of the species. Section 10(a)(1)(B) of the Act states that HCPs must meet issuance criteria, including minimizing and mitigating any take of the listed species covered by the permit to the maximum extent practicable, and that the taking will not appreciably reduce the

likelihood of the survival and recovery of the species in the wild. We fully expect that our analyses of future HCPs and section 10(a)(1)(B) permits under section 7 will show that covered activities carried out in accordance with the provisions of the HCPs and Section 10(a)(1)(B) permits will not result in the destruction or adverse modification of critical habitat designated for the San Diego fairy shrimp.

In the event that future HCPs covering the San Diego fairy shrimp are developed within the boundaries of designated critical habitat, we will work with applicants to ensure that the HCPs provide for protection and management of habitat areas essential for the conservation of the San Diego fairy shrimp by either directing development and habitat modification to nonessential areas, or appropriately restricting activities within essential habitat areas so that such activities will not result in the destruction or adverse modification of the primary constituent elements. The HCP development process provides an opportunity for more intensive data collection and analysis regarding the use of particular habitat areas by the San Diego fairy shrimp. The process also enables us to conduct detailed evaluations of the importance of such lands to the long-term survival of the species in the context of constructing a biologically configured system of interlinked habitat blocks. We are continuing to work with the cities of Chula Vista, Carlsbad, San Marcos, and other jurisdictions to insure that their subarea plans provide for the long-term conservation of the San Diego fairy shrimp.

We will provide technical assistance and work closely with applicants throughout the development of future HCPs to identify lands essential for the long-term conservation of the San Diego fairy shrimp and appropriate management for those lands. The take minimization and mitigation measures provided under these HCPs are expected to protect the essential habitat lands designated as critical habitat in this rule. If an HCP that addresses the San Diego fairy shrimp as a covered species is ultimately approved, we will reassess the critical habitat boundaries in light of the HCP. We will seek to undertake this review when the HCP is approved, but funding constraints may influence the timing of such a review.

(6) *Comment:* It is illegal and unscientific to withdraw critical habitat designation from land covered by a currently approved HCP, or to withdraw it from future HCPs when they are approved because these HCPs do not provide adequate protection for the San

Diego fairy shrimp. Critical habitat protects land essential for conservation, which is a higher standard than an HCP permit or section 7 consultation, which only assure that jeopardy would not occur.

Our Response: Section 4(b)(2) of the Act provides for a balancing test in designating critical habitat. We may exclude HCPs from critical habitat if the benefits of excluding them outweigh the benefits of including them in the designation. See our response to Comment 5 for a discussion of conservation measures afforded covered species under HCPs.

(7) *Comment:* An Environmental Impact Statement as defined under NEPA should be written to address the potential significant impacts from the proposed designation of San Diego fairy shrimp critical habitat.

Our Response: We determined that we do not need to prepare an Environmental Assessment and/or an Environmental Impact Statement as defined under the authority of the National Environmental Policy Act of 1969, in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reason for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

(8) *Comment:* The broad scale of the proposed critical habitat maps is not specific enough to allow for reasonable public comment therefore violating the Act and 50 CFR Sec. 424.12(c).

Our Response: We identified specific areas referenced by UTM coordinates, which are found on standard topographic maps. We also made available a public viewing room where the proposed critical habitat units superimposed on 7.5 minute topographic maps and spot imagery could be inspected. Further, we distributed GIS coverages and maps of the proposed critical habitat to everyone who requested them. We believe the information made available to the public was sufficiently detailed to allow for informed public comment. This final rule contains the legal descriptions of areas designated as critical habitat required pursuant to 50 CFR Sec. 424.12(c). If additional clarification is necessary, contact the Carlsbad Fish and Wildlife Office (see **ADDRESSES** section).

(9) *Comment:* The designation of critical habitat would place an additional burden on landowners above and beyond what the listing of the species would require. The number of section 7 consultations will increase; large areas where no San Diego fairy shrimp are known to occur will now be subject to section 7 consultation. Many

Federal agencies have been making a "no effect" determination within unoccupied suitable habitat. Now, with critical habitat there will be "may affect" determinations, and section 7 consultation will be required if any of the constituent elements are present.

Our Response: We acknowledge that there may be some additional section 7 consultations due to critical habitat. However, we believe in most cases, the outcome of these consultations will be similar to the outcome of consultations without critical habitat. See our response to Issue 39. Since vernal pools are widely recognized as a sensitive and declining habitat, projects are often required, by jurisdictions other than the Service, to offset impacts to vernal pools regardless of the presence of designated critical habitat. Therefore, we believe that if there is any additional burden due to critical habitat, it will be minimal.

(10) *Comment:* Several commenters requested that, once a section 7 consultation is completed that addresses the San Diego fairy shrimp, the lands covered by the consultation be excluded from critical habitat, similar to what has been proposed for lands covered by approved HCPs.

Our Response: We disagree that lands covered by a section 7 consultation should be removed from critical habitat. Section 7 of the Act requires that Federal actions not jeopardize the continued existence of a species or result in the destruction or adverse modification of critical habitat. In contrast, HCPs typically provide for greater conservation benefits to a covered species by assuring the long-term protection and management of a covered species and its habitat, and funding for such management through the standards found in the 5-Point Policy for HCPs (64 FR 35242), the HCP No Surprises regulation (63 FR 8859), and relevant regulations governing the issuance and implementation of HCPs. However, such assurances are typically not provided in connection with Federal projects subject to section 7 consultations which, in contrast to activities on non-Federal lands covered by HCPs, often do not commit to long term special management or protections.

(11) *Comment:* Comments received from the Department of Defense (DOD) requested that their lands be excluded from the critical habitat designation because protections and management afforded the San Diego fairy shrimp under Integrated Natural Resource Management Plans (INRMPs) pursuant to the Sike's Act were sufficient, thereby resulting in their lands not requiring special management or protection and

not meeting the definition of critical habitat.

Our Response: We agree that INRMPs can provide special management lands such that they no longer meet the definition of critical habitat when the plans meet the following criteria: (1) a current INRMP must be complete and provide sufficient conservation benefit to the San Diego fairy shrimp, (2) the plan must provide assurances that the conservation management strategies will be implemented, and (3) the plan must provide assurances that the conservation management strategies will be effective, *i.e.*, provide for periodic monitoring and revisions as necessary. If all of these criteria are met, then the lands covered under the plan would no longer meet the definition of critical habitat.

To date, Marine Corps Air Base, Miramar is the only DOD installation that has completed a final INRMP that provides for sufficient conservation management and protection for the San Diego fairy shrimp. We have reviewed this plan and have determined that it addresses and meets the three criteria. Therefore, lands on Marine Corps Air Base, Miramar no longer meet the definition of critical habitat, and they have been excluded from the final designation of critical habitat for the San Diego fairy shrimp.

(12) *Comment:* Are emergency maintenance activities within designated critical habitat exempt for consultation under section 7 of the Act?

Our Response: Emergency maintenance activities are not exempt from consultation under section 7 of the Act. The regulations at 50 CFR 402.05 allow for informal consultation where emergency circumstances mandate the need to consult in an expedited manner. Formal consultation must be initiated as soon as possible after the emergency is under control. In addition, we have conducted programmatic consultations with FEMA and other Federal agencies for future anticipated emergency actions. These consultations can be conducted prior to the emergency and address anticipated response activities.

(13) *Comment:* Several commenters requested that we extend the comment period on the proposed determination and economic analysis to allow for additional outreach to affected property owners and to obtain their comments.

Our Response: Following the publication of the proposed critical habitat determination on March 8, 2000, we opened a 60-day public comment period, which closed on May 8, 2000. We conducted outreach notifying affected elected officials, local jurisdictions, and interest groups. We

conducted much of this outreach through legal notices in regional newspapers; letters and news releases faxed and/or mailed to elected officials, local jurisdictions, and interest groups; and publication of the proposed determination and associated material on our Regional world wide web page. We published a notice in the **Federal Register** on August 21, 2000, announcing the availability of the draft economic analysis and opening a public comment period from August 21, 2000, to September 5, 2000, to allow for comments on the draft economic analysis and additional comments on the proposed determination. We provided notification of the draft economic analysis through letters and news releases faxed and/or mailed to affected elected officials, local jurisdictions, and interest groups. We also published the draft economic analysis and associated material on our Regional world wide web page following the draft's release on August 21, 2000. Because of the court-ordered timeframe, we were not able to extend or open an additional public comment period.

(14) *Comment:* Critical habitat should not have been proposed before an economic and other impacts analysis was completed, and the opportunity to comment on the economic analysis and the proposed rule was limited.

Our Response: We published the proposed determination in the **Federal Register** (65 FR 5946), and invited public comment. We used comments received on the proposed critical habitat to develop the draft economic analysis. We reopened the comment period from August 21, 2000, to September 5, 2000, to allow for comments on the draft economic analysis and proposed rule. We believe this was sufficient given the short timeframe ordered by the court.

(15) *Comment:* Several commenters recommended adding specific lands to critical habitat. These additions included Carmel Mountain, all pools identified in the Vernal Pool Recovery Plan, and all vernal pools currently known.

Our Response: We did not include all known vernal pools in proposed critical habitat. All of the designated critical habitat areas are considered essential to the conservation of the San Diego fairy shrimp as described in the Recovery Plan for Vernal Pools of Southern California. Other vernal pools, including those on Carmel Mountain, were not designated as critical habitat, because they are included in the MSCP plans. The vernal pools on Carmel Mountain are within the San Diego MSCP and

were excluded pursuant to section 4(b)(2).

(16) *Comment:* A number of commenters identified specific areas that they thought should not be designated as critical habitat.

Our Response: Where site-specific documentation was submitted to us providing a rationale as to why an area should not be designated critical habitat, we evaluated that information in accordance with the definition of critical habitat pursuant to section 3 of the Act. We made a determination as to whether modifications to the proposal were appropriate. We reviewed the maps to ensure that only those lands essential for the conservation of the San Diego fairy shrimp were designated as critical habitat. We excluded lands from the final designation that we determined to be non-essential to the conservation of the San Diego fairy shrimp. We also excluded lands that were located within an approved HCP for the San Diego fairy shrimp upon determining that the benefits of excluding those areas outweighed the benefits of including them. We included lands in the final designation that we still considered essential, using the revised mapping scale and did not have special management sufficient for the conservation of the San Diego fairy shrimp. Certain lands that were included in the proposed rule were not designated as critical habitat. For example, based on information provided during the comment periods, we excluded Otay Land Company property since no vernal pools were present.

(17) *Comment:* Several commenters recommended that we postpone issuing a final determination until a more specific and defensible critical habitat proposal can be written and an accurate and quantitative economic analysis be conducted.

Our Response: We are required to use the best available information in designating critical habitat. We are under a court order to complete the designation of San Diego fairy shrimp critical habitat by October 15, 2000. We did solicit new biological data and public participation during the comment periods on the proposed rule and draft economic analysis. These comments have been taken into account in the development of this final determination. Further, we will continue to monitor and collect new information and may revise the critical habitat designation in the future if new information supports a change, given our available funding and priorities.

Issue 3: Economic Issues

(18) *Comment:* Some commenters stated that we should have estimated the cumulative economic effect of the critical habitat designation for the San Diego fairy shrimp along with the effect of future pending and proposed critical habitat for other species in southern California.

Our Response: We are not required to estimate the cumulative effects of critical habitat designations as part of our rulemaking procedures. We are required to only consider the effect of the proposed government action, which in this case is the designation of critical habitat for the San Diego fairy shrimp. Again, the appropriate baseline to use in an analysis of a Federal action, which in this case is the designation of critical habitat for the San Diego fairy shrimp, is the way the world would look absent the proposed regulation. Against this baseline, we attempt to identify and measure the incremental costs and benefits associated with the government action. Because the San Diego fairy shrimp is already a federally protected species, any effects the listing has on the regulated community is considered part of the baseline scenario. Future pending and proposed critical habitat designations for other species in southern California will be part of separate rulemakings and consequently, their economic effects will be considered separately.

(19) *Comment:* Some commenters were concerned that, while we discussed impacts that are more appropriately attributable to the listing of the San Diego fairy shrimp than to the proposed designation of critical habitat, we did not provide quantified estimates of economic impacts associated with the listing.

Our Response: We do not agree that the economic impacts of the listing should be considered in the economic analysis for the designation of critical habitat. Section 4(b) of the Act is clear that the listing decision be based solely on the best available scientific and commercial data available. Congress also made it clear in the Conference Report accompanying the 1982 amendments to the Act that "economic considerations have no relevance to determinations regarding the status of species * * *". If we were to consider the economic impacts of listing in the critical habitat designation analysis it would lead to confusion, because the designation analysis is meant to determine whether areas should be excluded from the designation of critical habitat based solely upon the costs and benefits of the designation, and not

upon the costs and benefits of listing a species. Additionally, because the Act specifically precludes us from considering the economic impacts of the listing, it would be improper to consider those impacts in the context of an economic analysis of the critical habitat designation. Our economic analyses address how our actions may affect current or planned activities and practices; they do not address impacts associated with previous Federal actions, which in this case includes the listing of the San Diego fairy shrimp as an endangered species.

(20) *Comment:* One commenter was concerned that the economic analysis failed to address the economic impacts of baseline conditions and we were at fault for defining the baseline as "without critical habitat."

Our Response: The statutory language in the Act prohibits us from considering economic impacts when determining whether or not a species should be added to the list of federally protected species. As a result, we have not estimated these impacts in the past, nor were we able to do so for the draft economic analysis on proposed critical habitat for the San Diego fairy shrimp. Typically, our economic analyses are principally concerned with how our proposed actions may affect current activities and practices and do not focus on impacts associated with previous Federal actions, which in this case includes the listing of the San Diego fairy shrimp as an endangered species in 1997. By defining our baseline as "without critical habitat designation" our analyses are consistent with the standards published by the Office of Management and Budget for preparing economic analyses under Executive Order 12866.

(21) *Comment:* Many commenters expressed concern that the draft economic analysis failed to quantify the effects of proposed critical habitat designation, or that we could not adequately assess the impacts of critical habitat, as we did not include detailed information on land uses or potential effects of their designation.

Our Response: We were able to identify only the types of impacts likely to occur as a result of proposed critical habitat designation. These impacts include new consultations, reinitiation of consultations, and perhaps some prolongment of ongoing consultations to address critical habitat concerns, as required under section 7 of the Act. In some of these cases, it is possible that we might recommend reasonable and prudent alternatives to the proposed activity that triggered the consultation, which would also be an impact. Also,

the length of time required to carry out consultations may result in opportunity costs associated with project delays. Due to the short time required by the court to complete this action, we were unable to quantify these impacts. We intend to quantify impacts for future designations.

In the case of critical habitat for the San Diego fairy shrimp, however, we have only designated habitat within the geographical area that is occupied by the San Diego fairy shrimp (except for 18 ha (55 ac) of unknown occupancy). As a result, these impacts are not likely to be significant because Federal agencies are already required to consult with us on activities taking place on these lands that have the potential to adversely affect the San Diego fairy shrimp. While the Act requires agencies to consult with us on activities that may adversely affect the San Diego fairy shrimp and critical habitat, we do not believe that within proposed critical habitat for the San Diego fairy shrimp there are likely to be any actions of concern that adversely modify critical habitat without simultaneously causing concern about the potential for the action to jeopardize the San Diego fairy shrimp, which would trigger a consultation regardless of critical habitat designation.

We also recognize that in some instances, the designation of critical habitat could result in a distorted real estate market because participants may believe that land within critical habitat designation is subject to additional constraints. In truth, this is not the case because critical habitat designation for the San Diego fairy shrimp is not adding any extra protection, nor impacting landowners beyond that associated with the listing of the species as threatened under the Act. As a result, we believe that any resulting distortion will be temporary and have a relatively insignificant effect on the real estate market as it should become readily apparent to market participants that critical habitat for the San Diego fairy shrimp is not imposing any additional constraints on landowner activities beyond those currently associated with the listing.

(22) *Comments:* The draft economic analysis failed to consider the effect critical habitat designation would have on the demand for new housing, and that the economic analysis ignores the impact of the designation on California's critical housing shortage.

Our Response: We do not believe that the designation of critical habitat to the San Diego fairy shrimp will have any further additional impacts on land development. This belief stems from the

fact that vernal pools, which constitute the critical habitat we have proposed to designate, are already classified as wetlands. As a result, developers must first obtain a section 404 wetland development permit from the Corps before proceeding with any development activity. Because the San Diego fairy shrimp is already a federally protected species, the Corps is currently required to consult on their activities that may affect the San Diego fairy shrimp. Consequently, critical habitat designation for the San Diego fairy shrimp will have no significant effect on land development activities.

(23) *Comment:* The assumption applied in the economic analysis that the designation of critical habitat will cause no impacts above and beyond those caused by listing of the species is faulty, legally indefensible, and contrary to the Act. "Adverse modification" and "jeopardy" are different, will result in different impacts, and should be analyzed as such in the economic analysis.

Our Response: We disagree with the commenter's assertion that "jeopardy" and "adverse modification" represent different standards. Section 7 prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat. Actions likely to "jeopardize the continued existence" of a species are those that would appreciably reduce the likelihood of both the survival and recovery of a listed species. Actions likely to result in the destruction or adverse modification of critical habitat are those that would appreciably reduce the value of critical habitat for both the survival and recovery of a listed species. Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Given the similarity of these definitions, actions likely to result in the destruction or adverse modification of critical habitat would almost always result in jeopardy to the species concerned, particularly where, as here, only habitat within the geographic area occupied by the San Diego fairy shrimp is designated as critical habitat.

(24) *Comment:* Several commenters questioned our ability to accurately estimate the economic effects of critical habitat designation because of the imprecise method used by the Service to designate critical habitat.

Our Response: We believe that the method used to identify proposed critical habitat for the San Diego fairy shrimp was sufficiently accurate for us

to identify land ownership and use activities that potentially could be affected by the designation. Because we have limited the designation to vernal pools, which are already subject to section 7 consultations due to the presence of a federally protected species, and because any land development activities already require an authorizing permit from the Corps, we believe we have accurately identified and summarized potential economic effects from the designation.

(25) *Comment:* One commenter stated that the designation of critical habitat on Camp Pendleton and MAS Miramar would significantly restrict and unduly compromise unit commanders' ability and flexibility to simulate real world combat scenarios and contingencies, which the economic analysis failed to measure.

Our Response: The economic analysis addressed proposed critical habitat designation on these two military installations. The analysis concluded, however, that these installations would face little additional impact beyond that currently experienced due to the listing of the San Diego fairy shrimp. The Service, however, is aware of the strategic importance of these military installations. No critical habitat was designated at Miramar because their approved INRMP provided sufficient management for the San Diego fairy shrimp and thus these vernal pool areas do not meet the definition of critical habitat. Critical habitat that was proposed on Camp Pendleton was excluded through section 4(b)(2) of the Act, since the benefits of excluding outweigh the benefits of including those vernal pool areas within the designation.

Issue 4: Other Relevant Issues

(26) *Comment:* The Marine Corps commented that the Service did not evaluate the impact of the critical habitat designation on training maneuvers at Marine Corps Base Camp Pendleton and the subsequent impact on the combat readiness of the Marine Corps.

Our Response: Training maneuvers at Camp Pendleton are already subject to section 7 of the Act. However, we evaluated the impact of the designation of critical habitat at Camp Pendleton and determined that it would have caused significant curtailment of necessary training within the area designated, to the detriment of mission-critical training capability. Thus, in this final rule, we are designating only the area on Camp Pendleton that includes lands leased by the California State

Department of Parks and Recreation and private interests from Camp Pendleton.

(27) *Comment:* Vernal pools and fairy shrimp habitat are best preserved by government ownership and management of the land rather than private ownership. Small vernal pools on isolated parcels of land in danger from development should be relocated to government-owned land.

Our Response: We agree that land acquisition can be an important tool in the conservation of vernal pools, and will continue to pursue this strategy to conserve vernal pools where appropriate.

Summary of Changes From the Proposed Rule

Based on a review of public comments received on the proposed determination of critical habitat and economic analysis for the San Diego fairy shrimp, we reevaluated our proposed designation of critical habitat for this species. These changes include the following: (1) Reduction in the minimum mapping unit for defining critical habitat boundaries; (2) removal of Marine Corps Air Station, Miramar from the designation due to an existing, finalized resource management plan; and (3) removal of Marine Corps Base Camp Pendleton from the designation (except for lands leased by the California State Department of Parks and Recreation and private interests from Camp Pendleton) under section 4(b)(2) of the Act.

Based on public comment and the availability of more current and precise GIS (spot imagery) data, we refined the minimum mapping unit for the designation from a 1 km (0.6 mi) UTM grid to a 250 m (820 ft) UTM grid. We then superimposed the proposed critical habitat boundaries on the newer imagery data and removed lands that were not essential to the conservation of the San Diego fairy shrimp. The refined mapping scale reduced the total amount of land by approximately 6,575 ha (16,247 ac) as designated as critical habitat.

During the comment period for the proposed determination of critical habitat for the San Diego fairy shrimp, we received and subsequently evaluated a final Integrated Natural Resource Management Plan for Marine Corps Air Base, Miramar. This plan addresses the San Diego fairy shrimp as a covered species and provides conservation management and protections for the species. We evaluated this plan and determined that the conservation management measures and protections afforded the San Diego fairy shrimp are sufficient to ensure its conservation on

the Base (see discussion under Evaluation of Areas for Special Management section of this rule). Therefore, we have excluded Marine Corps Air Base, Miramar from the final determination of critical habitat for San Diego fairy shrimp.

We also determined that it is appropriate to exclude Camp Pendleton from this critical habitat designation. Under section 4(b)(2) of the Act, we weighed the benefits of excluding Camp Pendleton land against the benefits of designating these areas and concluded that the benefits excluding outweigh the benefits of including. The main benefit of this exclusion is ensuring that the mission-critical military training activities can continue without interruption at Camp Pendleton while formal consultation on upland activities at the base is being completed.

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific and commercial data available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat. We cannot exclude such areas from critical habitat when such exclusion will result in the extinction of the species.

Economic effects caused by listing the San Diego fairy shrimp as an endangered species, and by other statutes, are the baseline upon which the effects of critical habitat designation are evaluated. The economic analysis must then examine the incremental economic effects of the critical habitat including both the cost and benefits. Economic effects are measured as changes in national income, regional jobs, and household income. An analysis of the economic effects of San Diego fairy shrimp critical habitat designation was prepared (Industrial Economics, Incorporated, 2000) and made available for public review (August 21–September 5, 2000; 65 FR 50672). The final analysis, which reviewed and incorporated public comments, concluded that no significant economic impacts are expected from critical habitat designation above and beyond those already imposed by listing the San Diego fairy shrimp. The most likely economic effects of critical habitat designation are on activities funded, authorized, or carried out by a Federal agency. The analysis examined the effects of the proposed designation on:

(1) Reinitiation of section 7 consultations, (2) length of time in which section 7 consultations are completed, and (3) new consultation resulting from the determination. Because areas proposed for critical habitat are within the geographic range occupied by the San Diego fairy shrimp, activities that may affect critical habitat may also affect the species, and would thus be subject to consultation whether or not critical habitat is designated. We believe that any project that would adversely modify or destroy critical habitat would also jeopardize the continued existence of the species and that reasonable and prudent alternatives to avoid jeopardizing the species would also avoid adverse modification of critical habitat. Thus, no regulatory burden or significant additional costs would accrue because of critical habitat above and beyond that resulting from listing. Our economic analysis recognizes that there may be costs from delays associated with reinitiating completed consultations after the critical habitat designation is made final. There may also be economic effects due to the reaction of the real estate market to critical habitat designation, as real estate values may be lowered due to perceived increase in the regulatory burden. We believe this impact will be short-term, however.

A copy of the final economic analysis and description of the exclusion process with supporting documents are included in our administrative record and may be obtained by contacting our office (see **ADDRESSES** section).

Public Hearings

No public hearing was held for the proposed rule.

Required Determinations

Regulatory Planning and Review

This document has been reviewed by the Office of Management and Budget (OMB), in accordance with Executive Order 12866. OMB makes the final determination under Executive Order 12866.

(a) This rule will not have an annual economic effect of \$100 million or more or adversely affect an economic sector, productivity, jobs, the environment, or other units of government. A cost-benefit analysis is not required. The San Diego fairy shrimp was listed as an endangered species in 1997. In fiscal years 1997 through 1999, we conducted 27 formal section 7 consultations with other Federal agencies to ensure that their actions would not jeopardize the continued existence of the fairy shrimp.

The areas designated as critical habitat are currently within the geographic range occupied by the San Diego fairy shrimp. Under the Act, critical habitat may not be destroyed or adversely modified by a Federal agency action; the Act does not impose any restrictions on non-Federal entities unless they are conducting activities funded or otherwise sponsored or permitted by a Federal agency (see Table 2 below). Section 7 requires Federal agencies to ensure that they do not jeopardize the continued existence of the species. Based upon our experience with the species and its needs, we conclude that any Federal action or authorized action that could potentially cause an adverse modification of the proposed critical habitat would currently be considered as “jeopardy” under the Act. Accordingly, the designation of occupied areas as critical habitat does not have any incremental impacts on what actions may or may not be conducted by Federal agencies or non-Federal persons that receive Federal authorization or funding. Non-Federal persons that do not have a Federal “sponsorship” of their actions are not restricted by the designation of critical habitat (however, they continue to be bound by the provisions of the Act concerning “take” of the species). Additionally, designation of critical habitat in these areas will also not likely result in an increased regulatory burden since the Corps requires review of projects requiring permits in all vernal pools.

(b) This rule will not create inconsistencies with other agencies’ actions. As discussed above, Federal agencies have been required to ensure that their actions do not jeopardize the continued existence of the San Diego fairy shrimp since the listing in 1997. The prohibition against adverse modification of critical habitat is not expected to impose any additional restrictions to those that currently exist in occupied areas of designated critical habitat. Because of the potential for impacts on other Federal agency activities, we will continue to review this action for any inconsistencies with other Federal agency actions.

(c) This rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Federal agencies are currently required to ensure that their activities do not jeopardize the continued existence of the species, and, as discussed above, we do not anticipate that the adverse modification prohibition (resulting from critical habitat designation) will have any

incremental effects in areas of occupied habitat. Additionally, designation of critical habitat in these areas will not likely result in an increased regulatory burden since the Corps requires review

of projects requiring permits in all vernal pools.

(d) This rule will not raise novel legal or policy issues. The rule follows the requirements for determining critical

habitat contained in the Endangered Species Act.

TABLE 2.—IMPACTS OF SAN DIEGO FAIRY SHRIMP CRITICAL HABITAT DESIGNATION.

Categories of activities	Activities potentially affected by species listing only ¹	Additional activities potentially affected by critical habitat designation ²
Federal Activities Potentially Affected. ³	Activities such as those affecting waters of the United States by the Army Corps of Engineers under section 404 of the Clean Water Act; road construction and maintenance, right-of-way designation, and regulation of agricultural activities; regulation of airport improvement activities under Federal Aviation Administration jurisdiction; military training and maneuvers on Marine Corps Base Camp Pendleton and Marine Corps Air Station, Miramar and other applicable DOD lands; construction of roads and fences along the international border with Mexico and associated immigration enforcement activities by the Immigration and Naturalization Service; construction of communication sites licensed by the Federal Communications Commission; and activities funded by any Federal agency.	None.
Private or other non-Federal Activities Potentially Affected. ⁴	Activities such as removing or destroying San Diego fairy shrimp habitat (as defined in the primary constituent elements discussion), whether by mechanical, chemical, or other means, (e.g. grading, overgrazing, construction, road building, herbicide application, etc.), and appreciably decreasing habitat value or quality through indirect effects (e.g., edge effects, invasion of exotic plants or animals, or fragmentation) that require a Federal action (permit, authorization, or funding)).	None.

¹ This column represents the activities potentially affected by listing the San Diego fairy shrimp as an endangered species (February 3, 1997; 62 FR 4925) under the Endangered Species Act.

² This column represents activities potentially affected by the critical habitat designation in addition to those activities potentially affected by listing the species.

³ Activities initiated by a Federal agency.

⁴ Activities initiated by a private or other non-Federal entity that may need Federal authorization or funding.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

In the economic analysis, we determined that designation of critical habitat will not have a significant effect on a substantial number of small entities. As discussed under Regulatory Planning and Review above and in this final determination, this designation of critical habitat for the San Diego fairy shrimp is not expected to result in any restrictions in addition to those currently in existence for areas of occupied critical habitat. As indicated on Table 1 (see Critical Habitat Designation section), we designated property owned by Federal, State, and local governments, and private property.

Within these areas, the types of Federal actions or authorized activities that we have identified as potential concerns are:

(1) Regulation of activities affecting waters of the United States by the Corps under section 404 of the Clean Water Act;

(2) Regulation of water flows, damming, diversion, and channelization by Federal agencies;

(3) Regulation of grazing, mining, and recreation by the Bureau of Land Management or U.S. Forest Service;

(4) Road construction and maintenance, right-of-way designation, and regulation of agricultural activities;

(5) Regulation of airport improvement activities by the Federal Aviation Administration;

(6) Military training and maneuvers on Camp Pendleton and other applicable DOD lands;

(7) Construction of roads and fences along the international border with Mexico, and associated immigration enforcement activities by the INS;

(8) Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency;

(9) Construction of communication sites licensed by the Federal Communications Commission; and

(10) Activities funded by the U.S. Environmental Protection Agency, U.S. Department of Energy, or any other Federal agency.

Many of these activities sponsored by Federal agencies within the designated critical habitat areas are carried out by small entities (as defined by the Regulatory Flexibility Act) through contract, grant, permit, or other Federal authorization. As discussed above, these actions are currently required to comply with the listing protections of the Act, and the designation of critical habitat is not anticipated to have any additional effects on these activities in areas of

critical habitat occupied or potentially unoccupied by the species.

For actions on non-Federal property that do not have a Federal connection (such as funding or authorization), the current restrictions concerning take of the species remain in effect, and this rule will have no additional restrictions.

Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 804(2))

In the economic analysis, we determined whether designation of critical habitat would cause (a) any effect on the economy of \$100 million or more, (b) any increases in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions, or (c) any significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises. Refer to the final economic analysis for a discussion of the effects of this determination.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.):

(a) This rule will not “significantly or uniquely” affect small governments. A

Small Government Agency Plan is not required. Small governments will be affected only to the extent that any programs using Federal funds, permits, or other authorized activities must ensure that their actions will not adversely affect the critical habitat. However, as discussed above, these actions are currently subject to equivalent restrictions through the listing protections of the species, and no further restrictions are anticipated.

(b) This rule will not produce a Federal mandate of \$100 million or greater in any year, that is, it is not a "significant regulatory action" under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments.

Takings

In accordance with Executive Order 12630, the rule does not have significant takings implications. A takings implication assessment is not required. As discussed above, the designation of critical habitat affects only Federal agency actions. The rule will not increase or decrease the current restrictions on private property concerning take of the San Diego fairy shrimp. Due to current public knowledge of the species protection, the prohibition against take of the species both within and outside of the designated areas, and the fact that critical habitat provides no incremental restrictions, we do not anticipate that property values will be affected by the critical habitat designation. While real estate market values may temporarily decline following designation, due to the perception that critical habitat designation may impose additional regulatory burdens on land use, we expect any such impacts to be short-term. Additionally, critical habitat designation does not preclude development of HCPs and issuance of incidental take permits. Landowners in areas that are included in the designated critical habitat will continue to have opportunity to utilize their property in ways consistent with the survival of the San Diego fairy shrimp.

Federalism

In accordance with Executive Order 13132, the rule does not have significant Federalism effects. A Federalism assessment is not required. The designation of critical habitat within the

geographic range occupied by the San Diego fairy shrimp imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the survival of the species are specifically identified. While making this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-range planning (rather than waiting for case-by-case section 7 consultations to occur).

Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We designate critical habitat in accordance with the provisions of the Act. The determination uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of the San Diego fairy shrimp.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule references permits for HCPs which contain information collection activity. The Fish and Wildlife Service has OMB approval for the collection under OMB Control Number 1018-0094. The Service may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act

We determined that we do not need to prepare an Environmental Assessment and/or an Environmental Impact Statement as defined by the National Environmental Policy Act of 1969 Act in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This final determination does not constitute a major Federal

action significantly affecting the quality of the human environment.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951) and 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no Tribal lands essential for the conservation of the San Diego fairy shrimp because they do not support populations or suitable habitat. Therefore, critical habitat for the San Diego fairy shrimp has not been designated on Tribal lands.

References Cited

A complete list of all references cited in this final rule is available upon request from the Carlsbad Fish and Wildlife Office (see **ADDRESSES** section).

Author

The primary authors of this notice are the Carlsbad Fish and Wildlife Office staff (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. In § 17.11(h), revise the entry for "Fairy shrimp, San Diego" under "CRUSTACEANS" to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*
CRUSTACEANS							
Fairy shrimp, San Diego.	<i>Branchinecta sandiegonensis</i> .	U.S.A. (CA)	NA	E	608	17.95(h)	NA
*	*	*	*	*	*		*

3. In § 17.95 add critical habitat for the San Diego fairy shrimp (*Branchinecta sandiegonensis*) under paragraph (h) in the same alphabetical order as this species occurs in § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

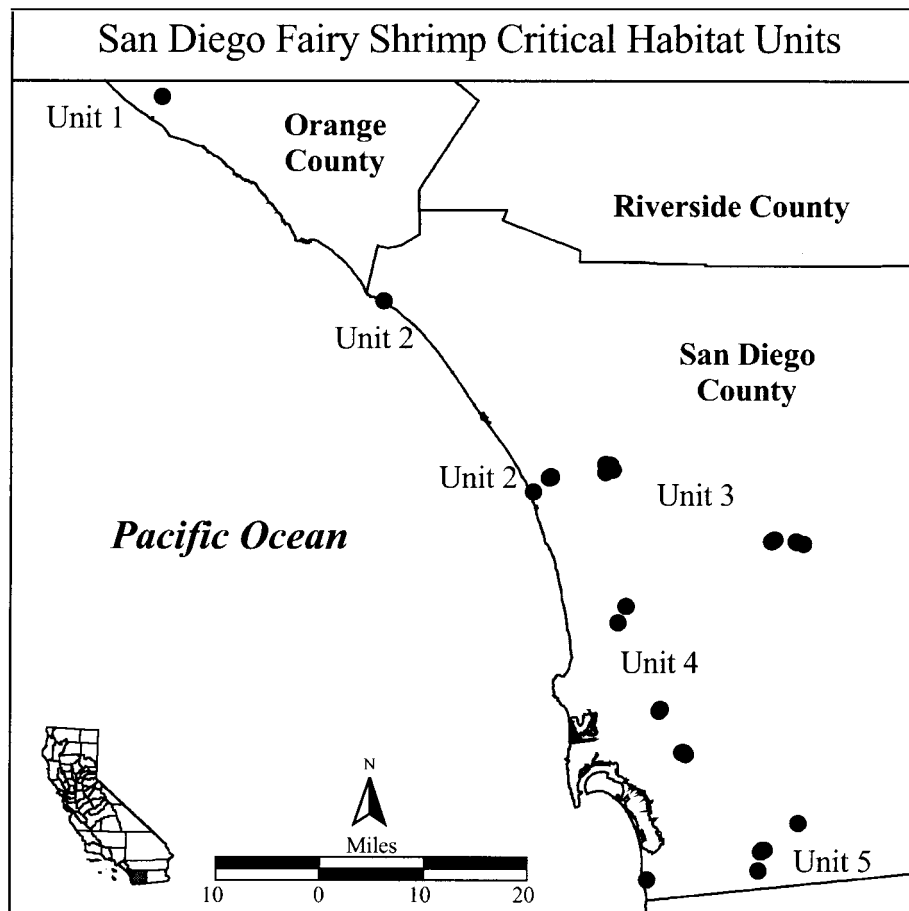
(h) *Crustaceans*.

* * * * *

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)

1. Critical habitat units are depicted for Orange and San Diego counties, California, on the maps below.

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2. Critical habitat includes vernal pool basins and vernal pool complexes indicated on the maps below and their associated watersheds and hydrologic regime.

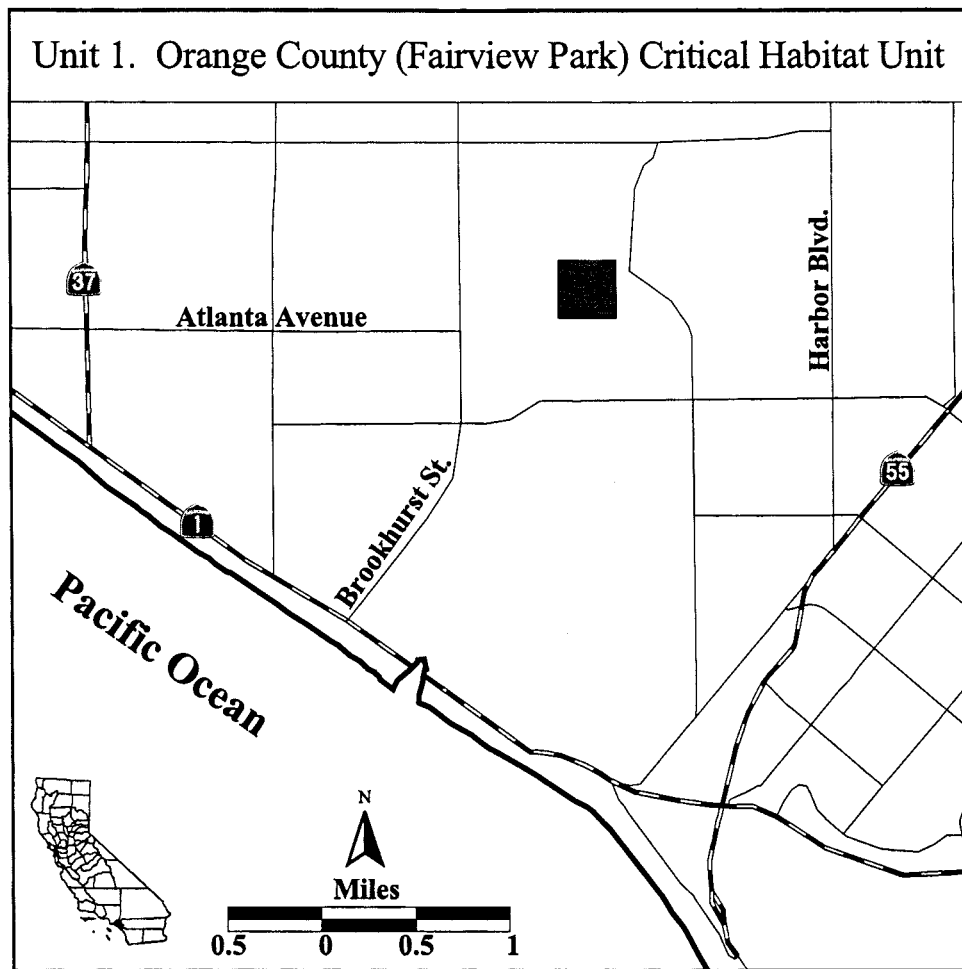
3. Within these areas, the primary constituent elements include, but are not limited to, those habitat components that are essential for the primary biological needs of foraging, sheltering, reproduction, and dispersal. The primary constituent elements are found in those areas that support vernal

pools or other ephemeral depressional wetlands. Within these seasonal wetlands, specific associations that are essential to the primary biological needs of the San Diego fairy shrimp include, but are not limited to: small to large vernal pools with shallow to moderate depths that hold water for sufficient lengths of time necessary for San Diego fairy shrimp incubation and reproduction, but not necessarily every year; entire watershed(s) and hydrology for vernal

pool basins and their associated vernal pool complexes, ephemeral depressional wetlands, flat or gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat.

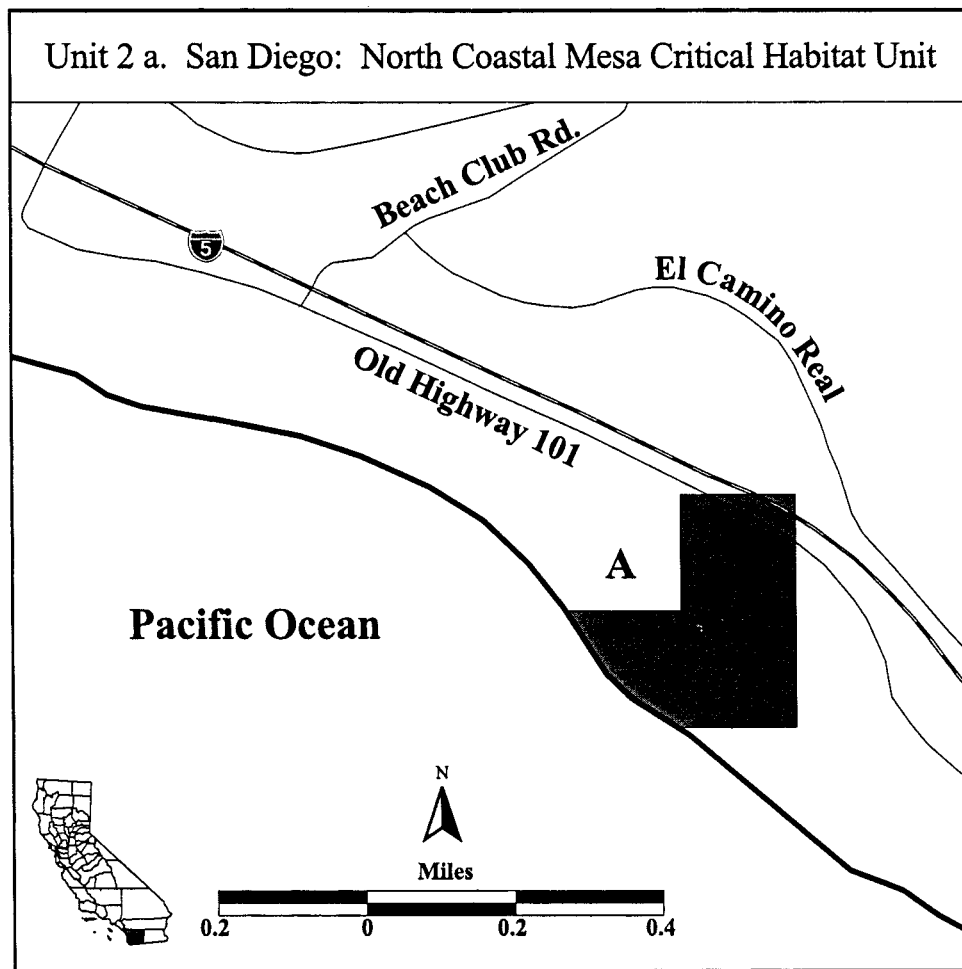
4. Existing features and structures, such as buildings, roads, railroads, urban development, and other features not containing primary constituent elements, are not considered critical habitat. In addition,

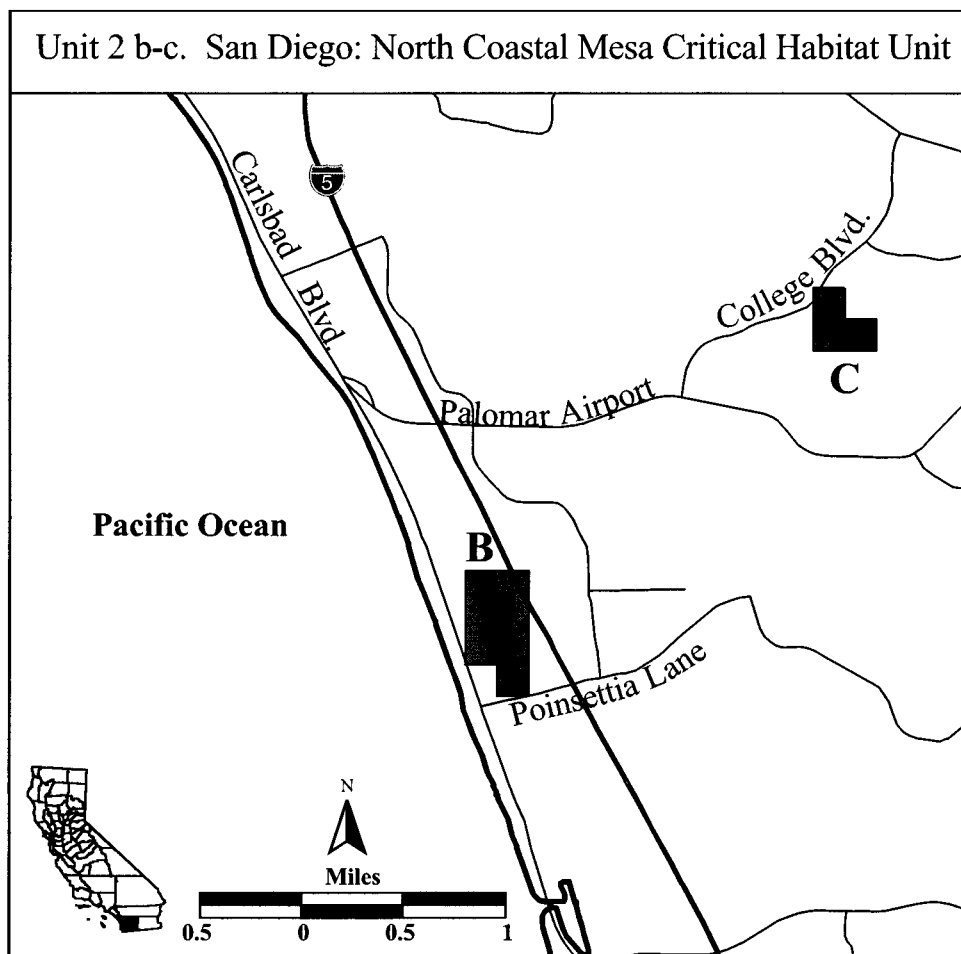
critical habitat does not include non-Federal lands covered by a legally operative incidental take permit for the San Diego fairy shrimp issued under section 10(a)(1)(B) of the Act on or before October 23, 2000.



Map Unit 1: Orange County (Fairview Park) Critical Habitat Unit, Orange County, California

From USGS 1:24,000 quadrangle map Newport Beach (1981), California, the lands bounded by the following UTM, North American Datum 1927 (NAD 27) coordinates (E,N): 412500,3725000; 413000,3725000; 413000,3724500; 412500,3724500; 412500,3725000.





Map Unit 2: San Diego: North Coastal Mesa Critical Habitat Unit, San Diego, County, California

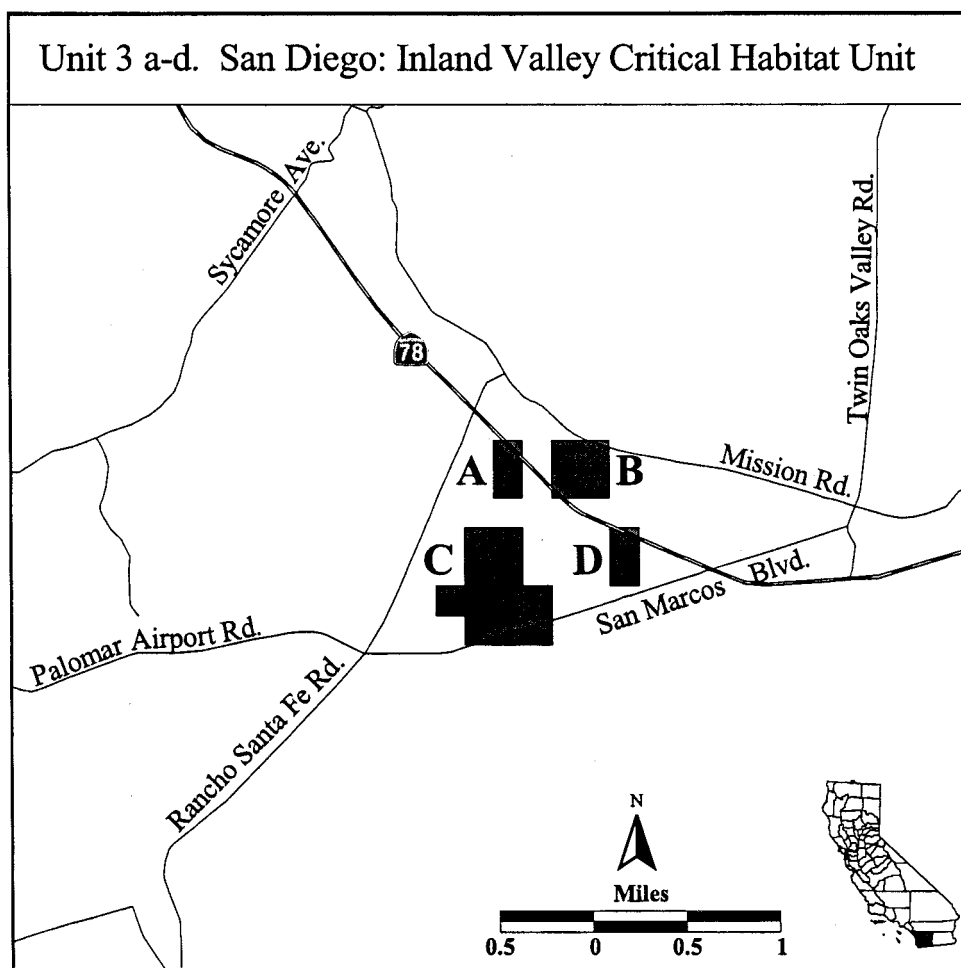
Unit 2a: From USGS 1:24000 quadrangle maps San Clemente (1968) and San Onofre Bluff (1975), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 447250,3693250; 447500,3693250;

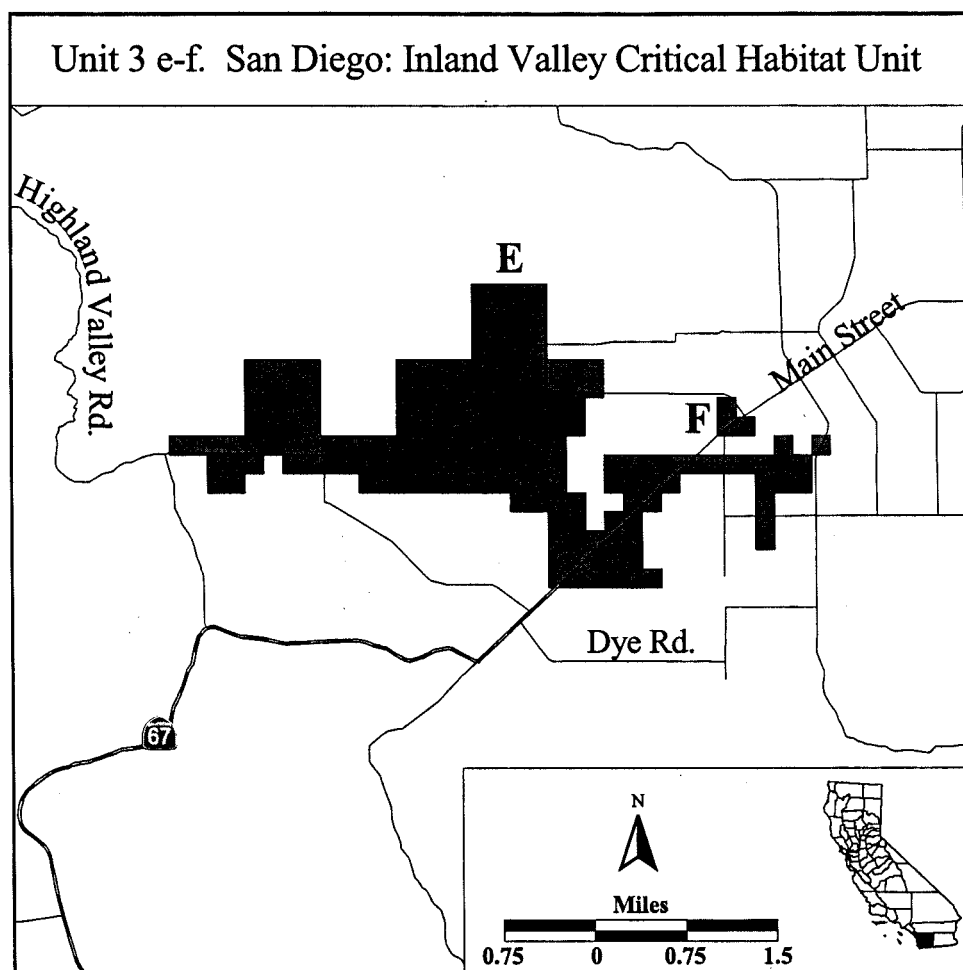
447500,3692750; 447000,3692750; 447000,3693000; 447250,3693000; 447250,3693250, excluding the Pacific Ocean.

Unit 2b: From USGS 1:24000 quadrangle map San Luis Rey (1975), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 473000,3665750; 473250,3665750; 473250,3665500;

473500,3665500; 473500,3665250; 473000,3665250; 473000,3665750.

Unit 2c: From USGS 1:24000 quadrangle maps Encinitas (1968), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 470250,3663500; 470750,3663500; 470750,3662500; 470500,3662500; 470500,3662750; 470250,3662750; 470250,3663500.





Map Unit 3: San Diego: Inland Valley Critical Habitat Unit, San Diego, County, California

Unit 3a: From USGS 1:24000 quadrangle map San Marcos (1983), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 481750,3667500; 482000,3667500; 482000,3667000; 481750,3667000; 481750,3667500.

Unit 3b: From USGS 1:24000 quadrangle map San Marcos (1983), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 482250,3667500; 482750,3667500; 482750,3667000; 482250,3667000; 482250,3667500.

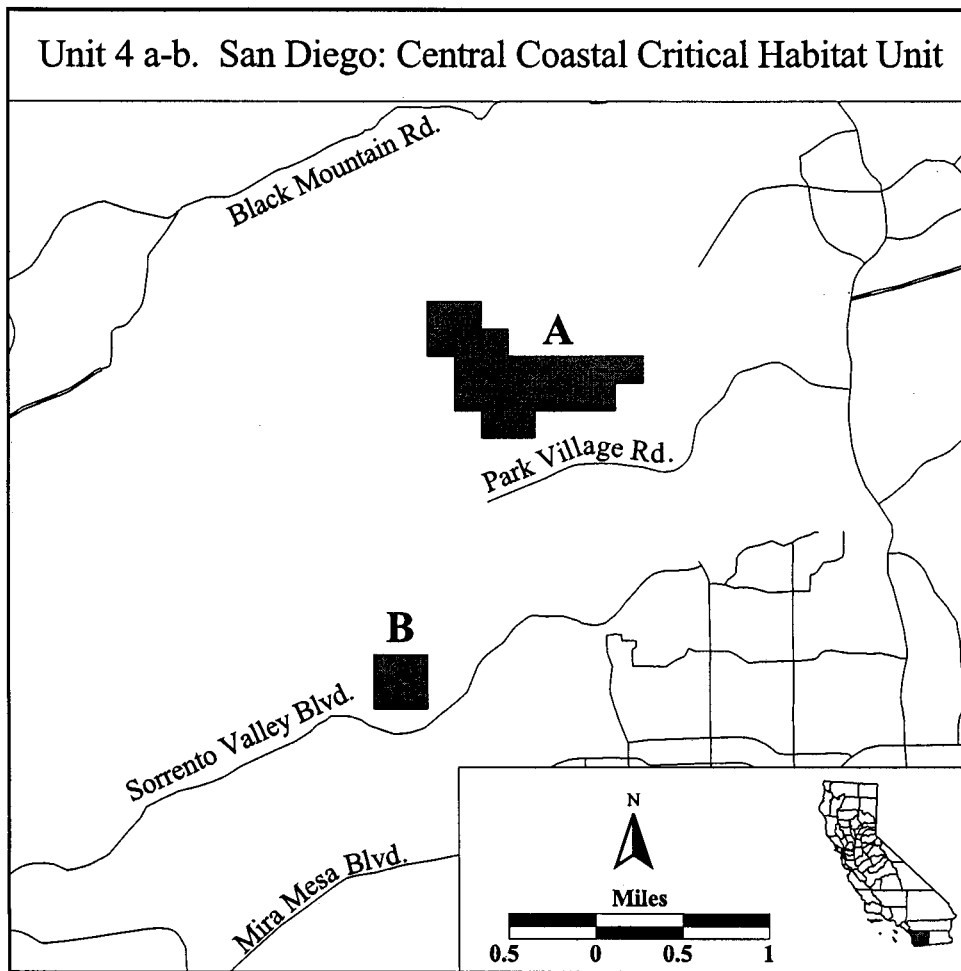
Unit 3c: From USGS 1:24000 quadrangle map San Marcos (1983), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 481500,3666750; 482000,3666750; 482000,3666250; 482250,3666250; 482250,3665750; 481500,3665750; 481500,3666000; 481250,3666000; 481250,3666250; 481500,3666250; 481500,3666750.

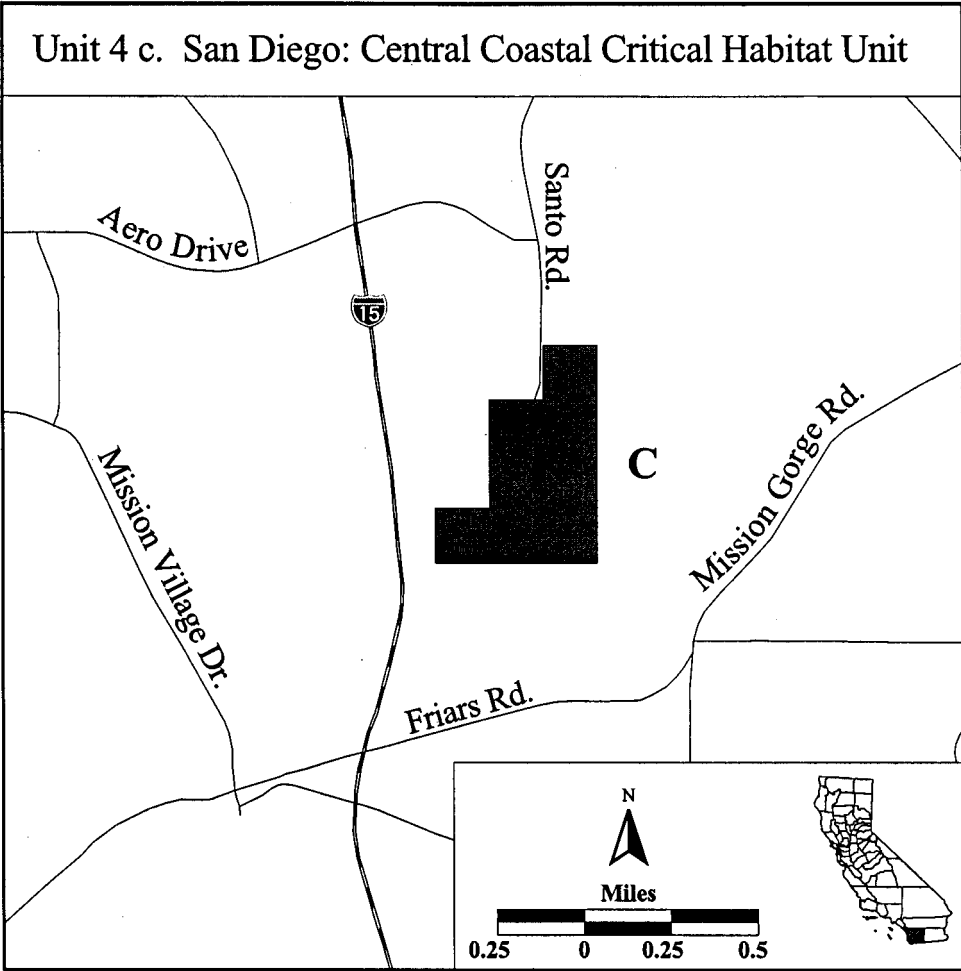
Unit 3d: From USGS 1:24000 quadrangle map San Marcos (1983), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 482750,3666750; 483000,3666750; 483000,3666250; 482750,3666250; 482750,3666750.

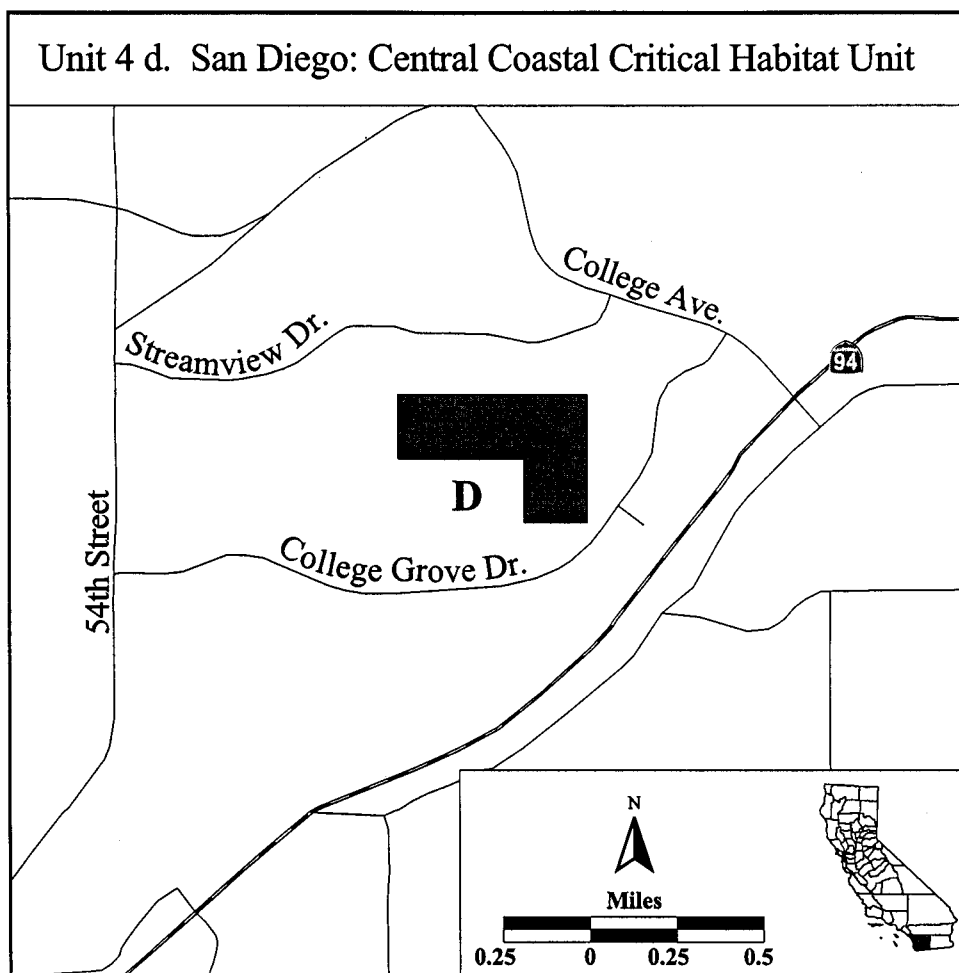
Unit 3e: From USGS 1:24000 quadrangle maps San Pasqual (1971) and Ramona (1988), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 508000,3657000; 509000,3657000; 509000,3656000; 509750,3656000; 509750,3655500; 509500,3655500; 509500,3655000; 509250,3655000; 509250,3654250; 509500,3654250; 509500,3653750; 509750,3653750; 509750,3654000; 510000,3654000; 510000,3654250; 509750,3654250; 509750,3654750; 512000,3654750; 512000,3655000; 512250,3655000; 512250,3654750; 512500,3655000; 512750,3655000; 512750,3654750; 512500,3654750; 512500,3654250; 512000,3654250; 512000,3653500; 511750,3653500; 511750,3654500;

510750,3654500; 510750,3654250; 510500,3654250; 510500,3654000; 510250,3654000; 510250,3653250; 510500,3653250; 510500,3653000; 509000,3653000; 509000,3654000; 508500,3654000; 508500,3654250; 506500,3654250; 506500,3654500; 505500,3654500; 505500,3654750; 505250,3654750; 505250,3654500; 505000,3654500; 505000,3654250; 504500,3654250; 504500,3654750; 504000,3654750; 504000,3655000; 505000,3655000; 505000,3656000; 506000,3656000; 506000,3655000; 507000,3655000; 507000,3656000; 508000,3656000; 508000,3657000.

Unit 3f: From USGS 1:24000 quadrangle map San Pasqual (1971) and Ramona (1988), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 511250,3655500; 511500,3655500; 511500,3655250; 511750,3655250; 511750,3655000; 511250,3655000; 511250,3655500.







Map Unit 4: San Diego: Central Coastal Mesa Critical Habitat Unit, San Diego, County, California

Unit 4a: From USGS 1:24000 quadrangle map Del Mar (1975), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 484000,3646000; 484500,3646000; 484500,3645750; 484750,3645750; 484750,3645500; 486000,3645500; 486000,3645250; 485750,3645250; 485750,3645000; 485000,3645000; 485000,3644750;

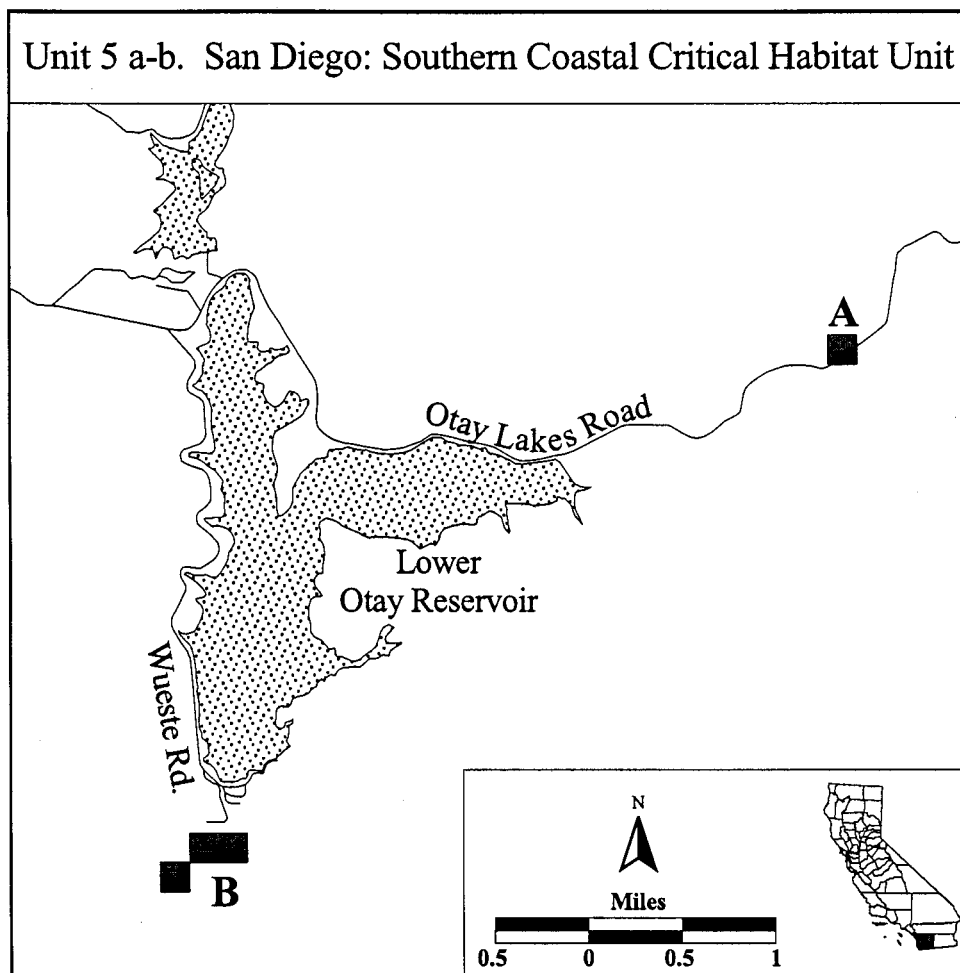
484500,3644750; 484500,3645000; 484250,3645000; 484250,3645500; 484000,3645500; 484000,3646000.

Unit 4b: From USGS 1:24000 quadrangle map Del Mar (1975), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 483500,3642750; 484000,3642750; 484000,3642250; 483500,3642250; 483500,3642750.

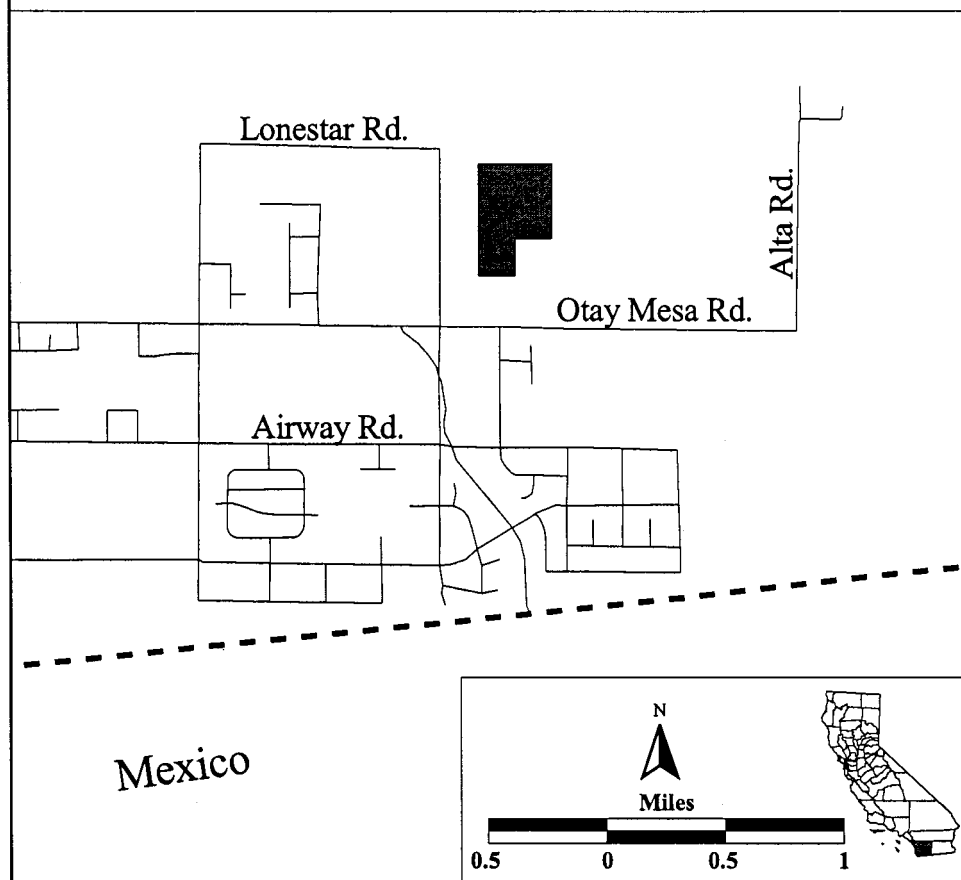
Unit 4c: From USGS 1:24000 quadrangle map La Mesa (1975), California, the lands bounded by the following UTM NAD 27

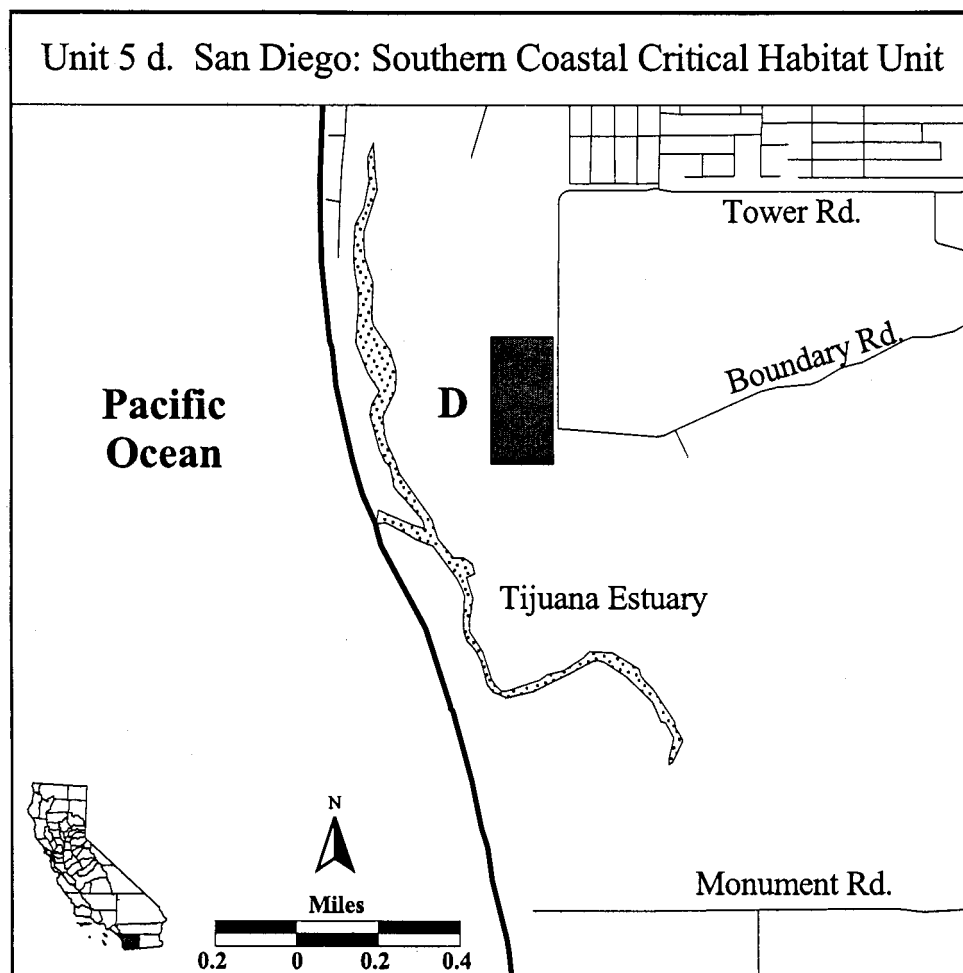
coordinates (E,N): 490250,3629500; 490500,3629500; 490500,3628500; 489750,3628500; 489750,3628750; 490000,3628750; 490000,3629250; 490250,3629250; 490250,3629500.

Unit 4d: From USGS 1:24000 quadrangle map National City (1975), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 493750,3622500; 494500,3622500; 494500,3622000; 494250,3622000; 494250,3622250; 493750,3622250; 493750,3622500.



Unit 5 c. San Diego: Southern Coastal Critical Habitat Unit





Map Unit 5: San Diego: Southern Coastal Mesa Critical Habitat Unit, San Diego, County, California

Unit 5a: From USGS 1:24000 quadrangle map Dulzura (1988), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 511750,3611500; 512000,3611500; 512000,3611250; 511750,3611250; 511750,3611500.

Unit 5b: From USGS 1:24000 quadrangle map Otay Mesa (1988), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 506250,3607250;

506750,3607250; 506750,3607000; 506250,3607000; 506250,3606750; 506000,3606750; 506000,3607000; 506250,3607000; 506250,3607250.

Unit 5c: From USGS 1:24000 quadrangle map Otay Mesa (1988), California, the lands bounded by the following UTM NAD 27 coordinates (E,N): 505500,3604250; 506000,3604250; 506000,3603750; 505750,3603750; 505750,3603500; 505500,3603500; 505500,3604250.

Unit 5d: From USGS 1:24000 quadrangle map Imperial Beach (1975), California, the

lands bounded by the following UTM NAD 27 coordinates (E,N): 488250,3602750; 488500,3602750; 488500,3602250; 488250,3602250; 488250,3602750.

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Dated: October 16, 2000.

Kenneth L. Smith,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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