

soils with an underlying claypan or hardpan layer that restricts water drainage. These soils include, but are not limited to: Huerfueño, Olivenhain, Placentia, Redding, and Stockpen (Bauder and McMillan 1998). The second primary constituent element is the possibility that a cyst bank exists in the soil. Dormant fairy shrimp cysts are viable for several years (Donald 1983; Belk 1998). In some cases vernal pool areas that appear degraded still maintain a viable source of fairy shrimp cysts. These cyst banks are similar to the seed banks of flowering plants. These areas are indicated by historical records of vernal pools, the presence of plants or animals associated with ephemeral wetlands, or the occasional pooling of water. The third constituent element relates to the topography of areas supporting the San Diego fairy shrimp. Vernal pool topography is such that the vernal pool fills directly from rain fall or in other cases the topography is such that the pool forms through the subsurface or overland waterflow from the surrounding watershed. The topography does not need to facilitate pooling water every year.

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 are found in all the areas proposed as critical habitat.

Criteria Used To Identify Critical Habitat

The long-term conservation of the San Diego fairy shrimp depends upon the protection and management of vernal pools within each management area as described in the Recovery Plan for Vernal Pools in Southern California. Eight distinct management areas were identified in the Recovery Plan based on plant and animal distribution, soil types, and climatic variables. Further, the management area for the conservation of the San Diego fairy shrimp includes vernal pools and complexes that are known to be or are likely occupied by this species and are needed 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 populations (Service 1998). We evaluated those areas based on the hydrology, watershed and topographic features. On the basis of this evaluation of vernal pools identified as essential for the recovery of the San Diego fairy shrimp, we overlaid a 100 m (330 ft) Universal Transverse Mercator (UTM) (North American Datum 1927 (NAD 27))

grid on top of those essential 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 for Orange County where essential vernal pools have been identified since the publication of the recovery plan.

Secondly, after determining those specific areas that are biologically essential to the San Diego fairy shrimp, we evaluated the areas relative to approved and legally operative individual and regional HCPs, completed and approved INRMPs for DoD lands, and other adequate conservation management plans or agreements. This comparison was conducted to ascertain the extent to which these conservation measures precluded the need to designate critical habitat on those lands based on the management provisions and protections afforded the San Diego fairy shrimp and its habitat. As previously discussed, we are not proposing as critical habitat, pursuant to sections 3(5)(A) and 4(B)(2), on lands covered by: (1) A legally operative and fully implemented HCP that covers the San Diego fairy shrimp, (2) a completed and approved INRMP that adequately address the San Diego fairy shrimp and its habitat, and (3) other appropriate conservation management plans or agreements. Consequently, lands within the boundaries of fully implemented HCPs, and Miramar are not proposed as critical habitat for the San Diego fairy shrimp based on the provisions of section 3(5)(A)(i)(II). Maps showing lands essential to the conservation of the San Diego fairy shrimp, but not included in proposed critical habitat based on the basis of Section 3(5)(A)(i)(II) are available for viewing at the Carlsbad Fish and Wildlife Office (*see ADDRESSES*). We have also considered but are not proposing as critical habitat lands within the Central-Coastal Orange County Subregional NCCP/HCP boundaries with the exception of the three vernal pool areas identified under Regional HCPs, lands within approved subareas under the MSCP, and certain military lands on Camp Pendleton based on our evaluation under section 4(b)(2) of the relatively greater benefits that would result from exclusion of these lands from proposed critical habitat. Miramar and NRRF have also been considered and excluded from proposed critical habitat based on sections 3(5)(A) and 4(b)(2). Maps showing the all essential areas considered, but not proposed, are available for public

review and comment at the Carlsbad Fish and Wildlife Office (*see ADDRESSES* section) or on the Internet at <http://carlsbad.fws.gov>. Additionally, these maps are provided to allow the public to adequately comment on these exclusions.

In defining critical habitat boundaries, we made an effort to avoid mapping developed areas that are unlikely to contribute to San Diego fairy shrimp conservation. However, the minimum mapping unit that we used did not allow us to avoid mapping of all developed areas 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. The complexes of vernal pools and their associated watersheds within the proposed 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 proposed 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). Areas proposed for critical habitat are under Federal, State, local, and private ownership. Areas proposed for critical habitat exclude some of the essential areas for this species; the exclusions are summarized in Table 2. Some of the areas proposed as critical habitat are within HCPs. Table 3 shows the total area that each of these plans cover and the preserve area for each. Only the San Diego MSCP represents a completed plan that covers the San Diego fairy shrimp. Areas proposed as critical habitat are divided into five Critical Habitat Units which are based on the recovery units in the Recovery Plan (Service 1998). The units are generally based on geographical location of the vernal pools, soil types, associated