

development livestock grazing, off-road vehicle use, and invasion from weedy exotic plants threaten the continued existence of these species. This proposal, if made final, would implement the protection and recovery provisions afforded by the Act for these four species. Comments and materials related to this proposal are solicited.

DATES: Comments from all interested parties must be received by January 13, 1992. Public hearing requests must be received by December 27, 1991.

ADDRESSES: Comments and materials concerning this proposed rule should be sent to Office Supervisor, U.S. Fish and Wildlife Service, Laguna Niguel Field Station, 24000 Avila Road, Laguna Niguel, California 92656. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne Harper, Office Supervisor, at the above address or at (714) 643-4270 or FTS 796-4270.

SUPPLEMENTARY INFORMATION:

Background

Pogogyne nudiuscula Gray is an erect annual reaching 12 inches (in) (3 decimeters (dm)) in height. The bright green spatulate leaves have few hairs. Bright purple flowers occur in whorls on spikes. This aromatic plant is a member of the mint family (Lamiaceae), typically blooming from May through June (Munz 1974). The lack of hairs on the calyx and bracts of this plant differentiates the species from *P. abramsii*. *Pogogyne nudiuscula* was originally described by Gray (1876), as cited by Howell (1931).

Orcuttia californica Vasey is a member of the grass family (Poaceae). This small annual grass reaches 4 in (1 dm) in height, is bright green, and secretes sticky droplets that taste bitter. Inflorescences, borne from May through June, consist of seven spikelets arranged in two ranks, with the upper spikelets overlapping on a somewhat twisted axis. *Orcuttia californica* was first collected by Orcutt and was described by Vasey (1886). Subsequently, this plant was considered the nominant variety of *Orcuttia californica*, and several varieties were recognized. Reeder (1982) raised the varieties of *Orcuttia californica* to species status. *Orcuttia californica* is differentiated from other species in the genus by the following characteristics: teeth of lemma (bract enclosing the floret) 5 millimeters (mm) or less long, the teeth sharp-pointed or with awns (terminal bristles) 0.5 mm or less long; culms (stems)

50 CFR Part 17

RIN 1018-AB73

Endangered and Threatened Wildlife and Plants; Proposed Rule to Determine Three Vernal Pool Plants, *Pogogyne nudiuscula*, *Orcuttia californica*, and *Eryngium aristulatum* var. *parishii*, and the Riverside Fairy Shrimp to be Endangered Species

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes to determine *Pogogyne nudiuscula* (Otay Mesa mint), *Orcuttia californica* (California Orcutt grass), *Eryngium aristulatum* var. *parishii* (San Diego button-celery), and the Riverside fairy shrimp *Streptocephalus woottoni* to be endangered species pursuant to the Endangered Species Act of 1973, as amended (Act). These species occur in vernal pools of southwestern Riverside County and western San Diego County, California. Habitat loss and degradation due to urban and agricultural

usually prostrate; caryopsis (fruit) 1.5-1.8 mm long; plants sparingly pilose (bearing soft and straight spreading hairs); and spikelets remote on the axis below, crowded toward the apex.

Eryngium aristulatum Jepson var. *parishii* (Coulter and Rose) Mathias and Constance is a member of the parsley family (Apiaceae). This plant is usually an annual, however, under favorable conditions it facultatively becomes a perennial herb with a perennial tap root. The plant has a spreading or ascending shape and reaches a height of 16 in (4 dm). The stems and lanceolate leaves are gray green with spinose lobes giving the plant a prickly appearance. Inflorescences form on short stalks with few flowered greenish heads at the ends of branches. *Eryngium aristulatum* var. *parishii* blooms from May through June (Constance 1977). This plant was originally described as *Eryngium parishii* by Coulter and Rose (1900). The plant was reclassified by Jepson (1923) as *E. jepsonii* var. *parishii*. Jepson (1936) returned to the Coulter and Rose (1900) classification. Mathias and Constance (1941) separated *Eryngium aristulatum* from *Eryngium jepsonii* due to morphological characteristics and treated this plant as a variety of *Eryngium aristulatum* (var. *parishii*). Its greenish heads, fruits with unequal scales, and bractlets without calloused margins separate *E. aristulatum* var. *parishii* from other varieties.

The Riverside fairy shrimp (*Streptocephalus woottoni*) is a small freshwater crustacean of the Order Anostraca, Family Streptocephalidae. Mature males are between 0.56 in (14 mm) and 0.92 in (23 mm) in length. The frontal appendage is cylindrical, bilobed at the tip, and extends only part way to the distal end of the basal segment of the antenna. The spur of the thumb is a simple bladelike process. The finger has two teeth; the proximal tooth is shorter than the distal tooth. The distal tooth has a lateral shoulder that is equal to about half the tooth's total length measured along the proximal edge. The cercopods are separate with plumose setae along the medial and lateral borders. Mature females are between 0.56 in (14 mm) and 0.84 in (21 mm) in total length. The brood pouch extends to abdominal segments 7, 8, or 9. The cercopods are as in the male. The discoverers of this taxon described this animal in the Journal of Crustacean Biology as a new species. They propose to name it *Streptocephalus woottoni* (Eng et al. 1990).

The Riverside fairy shrimp was first collected in 1979 by Dr. Clyde Eriksen and was identified as a new species in

1985 (Eng et al. 1990). The described species most similar to *Streptocephalus woottoni* is *S. seali* Ryder 1879. Plumose setae edge the cercopods of mature male *S. woottoni*, whereas spines replace the setae on the distal half of the cercopods in mature *S. seali*. The last abdominal segment is short in both species; however, *S. woottoni* lacks the confluent inner margins of the cercopods characteristic for male *S. seali* and *S. similis* Baird 1852. Both living males and females of *S. woottoni* have the red color of the cercopods covering all of the ninth and 30-40 percent of the eighth abdominal segments; no red extends onto the abdominal segments in living *S. seali* of either sex.

The three plants and the fairy shrimp occur in vernal pools, a habitat that forms in areas with Mediterranean climates where slight depressions become seasonally wet or inundated following fall and winter rains. Water remains in these pools for a few months at a time, due to an impervious layer such as hard pan, clay, or basalt beneath the soil surface. Gradual drying occurs during the spring (Holland 1978). The pools form on mesa tops or valley floors and are surrounded by very low hills usually referred to as mima mounds (Zedler 1987).

Historically, *Pogogyne nudiuscula* was known from Otay Mesa of San Diego County (Bauder 1986) to immediately south of the Mexican border in Baja California (Moran 1981); the species may have extended to the mesas east of Balboa Park and South of Mission Valley in San Diego where vernal pools contain *P. abramsii*, another endangered vernal pool plant (Bauder 1986). The sites in northern Baja California have very likely been extirpated (Moran 1981). The current known distribution of *P. nudiuscula* is restricted to some of the remaining vernal pools on Otay Mesa.

Orcuttia californica once occurred in vernal pools from San Quintin, Baja California, Mexico, (Moran 1981) northward to Riverside, Los Angeles, and San Diego Counties in southern California. Historically known populations from near Downey and Lakewood in Los Angeles County and near Murietta Hot Springs in Riverside County have been extirpated. *Orcuttia californica* remains in the pools on The Nature Conservancy's Santa Rosa Plateau Preserve, and in the Skunk Hollow pool in Riverside County (Lathrop 1976), and in pools on Otay Mesa in San Diego County (Bauder 1986). The current status of *O. californica* in Baja California is unknown, although agricultural

development in areas and under conditions where vernal pool habitat is typically found seems to be widespread and increasing (Moran 1981).

Eryngium aristulatum var. *parishii* once occurred from Riverside County, California, south to northern Baja California, Mexico (Constance 1977). This species currently is known to remain on the Santa Rosa Plateau in Riverside County; on Otay, Kearny, Del Mar, and Mira Mesas; on Camp Pendleton in San Diego County; and in northern Baja California, Mexico. A number of sites have been eliminated in recent years. Although this species remains comparatively widespread within and adjacent to remaining vernal pools, vernal pool habitat has declined by 97 percent (T. Oberbauer, Senior Planner, San Diego County, pers. comm., 1990), and most of the remaining pools face one or more threats. Additionally, the distribution of *E. aristulatum* var. *parishii* is patchy, which makes it more vulnerable to local extinction than more evenly distributed species (Bauder 1986).

The Riverside fairy shrimp has a restricted distribution and is known from five vernal pools in a 8.1 by 4.3 mile (13 by 7 kilometer (km) area near Temecula in southwestern Riverside County (Eng et al. 1990). In the fall of 1989, this species was found within vernal pools on the Miramar Naval Air Station and Otay Mesa in San Diego County (Simovich 1989).

The conditions that create suitable habitat for these species are seasonal (vernal) pools of shallow freshwater and were probably never common. However, agricultural and, more recently, urban development have eliminated the majority of suitable habitat. Urban and agricultural development currently threaten four of the five remaining pools supporting the fairy shrimp in Riverside.

A number of studies have been conducted on vernal pools in San Diego County. For mapping and description purposes, a standardized system has been developed for the designation of these vernal pools. A series letter is used to denote vernal pools in a general region, and numbers are used to designate several pool groups within the series. *Pogogyne nudiuscula* and *Orcuttia californica* are both found in the pools of the "J" series on Otay Mesa. These two species are not known to occur in the same pool. *Eryngium aristulatum* var. *parishii* occurs in several pool series. The Riverside fairy shrimp is known to occur within two pool series (J and U) in San Diego. The "U" series occurs on Miramar Naval Air Station.

Previous Federal Action

Federal action on the plant species began when the Secretary of the Smithsonian Institution, as directed by section 12 of the Endangered Species Act of 1973, prepared a report on those native plants considered to be endangered, threatened, or extinct in the United States. This report (House Document No. 94-51) was presented to Congress on January 9, 1975, and included *Pogogyne nudiuscula* and *Orcuttia californica*, but not *Eryngium aristulatum* var. *parishii*. On July 1, 1975, the Service published a notice accepting the report as a petition under section 4(c)(2) of the Act (40 FR 27823), and gave notice of the status review of *P. nudiuscula* and *O. californica* (petition acceptance is now governed by section 4(b)(3)(A)). On June 16, 1976, the Service published a proposed rule in the **Federal Register** (41 FR 24523) to determine approximately 1,700 vascular plants species, including *O. californica* and *E. aristulatum* var. *parishii*, but not *P. nudiuscula*, to be endangered species pursuant to section 4 of the Act. This list was assembled on the basis of comments and data received by the Smithsonian Institution and the Service in response to House Document No. 94-51 and the July 1, 1975, **Federal Register** publication. A summary of general comments received by the Service on the 1976 proposal was published in the **Federal Register** on April 26, 1978 (43 FR 17909).

In 1978, the amendments to the Act required that all proposals over 2 years old be withdrawn. A 1-year grace period was given to proposals already more than 2 years old. On December 10, 1979, the Service published in the **Federal Register** a notice withdrawing the portion of the June 16, 1976, proposal that had not been made final, including *Orcuttia californica* and *Eryngium aristulatum* var. *parishii*.

The Service published an updated notice of review for plants on December 15, 1980 (45 FR 82480). This notice included *Eryngium aristulatum* var. *parishii*, *Orcuttia californica*, and *Pogogyne nudiuscula* as category 1 candidates (species for which the Service has sufficient data in its possession to support a Federal listing proposal as endangered or threatened). On February 15, 1983, the Service published a notice (48 FR 6752) of its prior finding that the listing of these species may be warranted in accordance with section 4(b)(3)(A) of the Act. On October 13, 1983, the Service found that listing of these plant species was warranted but precluded in accordance with section 4(b)(3)(iii) of

the Act. Notification of this finding was published on January 20, 1984 (49 FR 2485). Such a finding requires the petition to be recycled pursuant to section 4(b)(3)(C)(i) of the Act. The finding was reviewed in October of 1984, 1985, 1986, 1987, 1988, 1989, 1990, and 1991. The present proposal constitutes the final finding on the petitioned action in accordance with section 4(b)(3)(B)(ii) of the Act.

The San Gorgonio Chapter of the Sierra Club submitted a petition dated September 19, 1988, to list the Riverside fairy shrimp as endangered. The petitioner opined that emergency listing was appropriate. The Service has determined that emergency listing is not appropriate in this case because the species is more widespread than first thought and does occur in at least one protected site. Considerable data were submitted with, and subsequent to, the petition. Additional data on new locations for this species were submitted to the Service by Dr. Marie Simovich.

Because it was not identified until 1985, and its existence remained known only to a few scientists until 1988, this proposed rule constitutes the first Federal action on the Riverside fairy shrimp.

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Orcuttia californica* Vasey (California Orcutt grass), *Pogogyne nudiuscula* Gray (Otay Mesa mint), *Eryngium aristulatum* var. *parishii* (Coulter and Rose) Mathias and Constance (San Diego button-celery), and the Riverside fairy shrimp (*Streptocephalus woottoni*) are as follows:

A. The Present or Threatened Destruction, Modification or Curtailment of Its Habitat or Range

The habitat and range of these four species has been greatly reduced. Vernal pools, existing as slight depressions on flat mesas, are found in locations that are especially vulnerable to urban and agricultural development. Many pool groups have been entirely eliminated and replaced with urban or agricultural developments.

In 1979, *Pogogyne nudiuscula* was limited to 10 pool groups on Otay Mesa

containing some 170 individual vernal pools. By 1986, this species had been extirpated from 3 pool groups encompassing about 38 pools. The plant was limited to a single pool in two groups and noticeably declining in another group. Vehicular activity was occurring in two of the remaining groups and partially explained one of the extirpations. Excessive cover of weedy non-native grasses was noted in six of the pool groups and partially explained two extirpations. Only one pool group was described as having dense populations of this plant. This particular site is near a proposed correctional facility (Bauder 1986). *Pogogyne nudiuscula* is presently known to remain in only four vernal pool complexes, all on Otay Mesa. In the drought year of 1989, *P. nudiuscula* was only found within one pool complex made up to 30 pools with a pool surface area totaling less than 1 acre (Bauder, Dept. of Biology, San Diego State University, pers. comm.).

In 1979, *Orcuttia californica* occurred on Otay Mesa in 7 pool groups containing 34 vernal pools. By 1986, plowing had destroyed 11 of these vernal pools. The invasion of alien plants and livestock grazing (see discussion below under Factor E) explained the extirpation of *O. californica* from 13 pools. *Orcuttia californica* presently occurs in only 2 vernal pool complexes on Otay Mesa that contain 10 vernal pools. All of the remaining 10 pools supporting *O. californica* on Otay Mesa were grazed by livestock, and 5 were adversely affected by trampling associated with Mexican citizens attempting to enter the United States from adjacent Mexico (less than 5 miles away) (Bauder 1986). Two vernal pool complexes in southwestern Riverside County also contain this species. One of these complexes is partially preserved within The Nature Conservancy's Santa Rosa Plateau Reserve. The other complex is located within the 14 acre Skunk Hollow pool, the last remaining valley type vernal pool in Riverside County. This pool is often plowed and is within the general locale of a conditionally approved residential development. The actual pool and some portion of its watershed are currently being studied for development of a conservation plan, as required by Riverside County. The purpose of the study is to determine the amount of supporting watershed to be included in the reserved area; it does not actually offer permanent protection to Skunk Hollow's watershed.

The Service is aware of 37 separate proposed Precise Plans and Tentative

Maps that have been filed for Otay Mesa, as required by the California Environmental Quality Act. These plans encompass approximately 80 percent of the undeveloped portion of the mesa within the jurisdiction of the City of San Diego and virtually all but four of the remaining vernal pool complexes. Of the four remaining pool complexes, three are adversely affected by other activities or development proposals. Preliminary designs by the California Department of Transportation for State Route 125 include alignments that sever the existing natural connection between two of the largest remaining vernal pool complexes on Otay Mesa. The construction of this new major highway access route into Otay Mesa would further facilitate its development. The Immigration Service has recently proposed a Border Control project (the Big Ditch) that would result in indirect and direct adverse impacts to vernal pools. The existing Brown Field Airport is presently being evaluated as a potential site for an International Airport servicing San Diego. This proposal includes alternative runway alignments that would destroy portions of one of the two largest remaining vernal pool complexes.

Eryngium aristulatum var. *parishii* has the largest remaining distribution of the three plant species under consideration herein. In 1979, this species was known from 66 pool groups; by 1986 this plant remained in 61 pool groups. Although three sites receive some protection, the remaining pool groups are threatened by one or more of the following: urban development, off-road vehicular traffic, trash dumping, grazing, mowing or plowing, highway construction, invasion by weedy exotics, drainage or watershed alterations (often due to adjacent urban development), military activities, and trampling associated with illegal aliens entering the United States (Bauder 1986).

The Riverside fairy shrimp is also vulnerable to any land use changes affecting the pools where it is found. This species inhabits the Skunk Hollow vernal pool, which, as previously discussed, is within a planned development. Other sites supporting the fairy shrimp may lack some of the typical vegetation of vernal pools, but that condition probably reflects impacts from past agricultural activities. One pool is located within an approved tract map for a housing development. A third pool is on a parcel currently the subject of a Specific Plan (housing development) proposal. This pool is in an agricultural field near the Skunk Hollow pool and has been recently disced; the

Environmental Impact Report prepared for the Specific Plan failed to acknowledge the existence of the species on the site. However, representatives of the landowner have expressed a willingness to offer some protection for this site. A fourth pool is located partially on private land and partially on the Pechanga Indian Reservation. The portion on private land was cultivated during 1990. The Region's drought conditions over the last 2 to 3 years may have rendered the pool dry enough to be plowed. A fifth pool, within a mile of the fourth site, is located on the Pechanga Indian Reservation. Bureau of Indian Affairs staff have indicated that they can do nothing to protect these pools because they are on land belonging to individual Tribe members. The section 7 requirements of the Act would apply to these pools if the fairy shrimp were listed as endangered (see discussion below under Available Conservation Measures). The plant species found in these locations are typical of areas that have been disturbed, although evidence of recent agricultural activity is lacking. Of the five pools supporting the fairy shrimp in Riverside County, only the Skunk Hollow vernal pool is greater than 1 acre in size.

Pools also have been degraded due to the use of off-road vehicles. These vehicles compact soils, crush plants when water is in the pools, cause turbidity, and leave deep ruts. The damage may alter the microhydrology of the pools. Dirt roads that go through or adjacent to pools are widened as motorists try to avoid the inevitable mud puddles. Thus, pools are gradually destroyed by vehicles traveling on adjacent dirt roads. Vehicle access and damage has occurred on virtually all remaining vernal pool complexes.

Livestock grazing occurs on Otay Mesa in areas where several vernal pool complexes collectively contain all four of the species. Plants within pools may be trampled and killed, or grazed by livestock prior to setting of seed. *Eryngium aristulatum* var. *parishii* is sometimes able to withstand light grazing pressure because of the buffering effect of its perennial tap root.

Trash dumping also degrades vernal pools. Chunks of concrete, tires, refrigerators, sofas, and other pieces of garbage or debris have been found in pools containing these four species. This trash crushes or shades vernal pool plants, disrupts the hydrologic functions of the pool, and in some cases may release toxic substances.

The vernal pool habitat upon which these four species depend is also

vulnerable to indirect destruction due to an alteration of the supporting watershed. An increase in water due to urban run-off leads to increased inundation and makes the pools vulnerable to invasion by marsh species resulting in decreased abundance of obligate vernal pool taxa. At the other extreme, some pools have been drained or blocked from their source of water and have shown an increased domination by upland plant species. *Orcuttia californica* usually occurs in the deepest portion of vernal pools and occurs in some pools with marshy elements. Hence, it is more likely to be adversely affected by the latter type of drainage alteration. Adjacent developments are often responsible for these drainage alterations.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Overutilization is not known to be a factor for the three plants, but unrestricted collecting for scientific or horticultural purposes or excessive visits by individuals interested in seeing rare plants could result from increased publicity. Taking of the Riverside fairy shrimp for these purposes has not been documented.

C. Disease or Predation

Orcuttia californica is consumed by cattle in areas where vernal pools are within pastures. The other three species are not known to be affected by disease or predation.

D. The Inadequacy of Existing Regulatory Mechanisms

Existing regulatory mechanisms are not sufficient to reduce the losses of *Orcuttia californica*, *Pogogyne nudiuscula*, *Eryngium aristulatum* var. *parishii*, and the Riverside fairy shrimp. Vernal pools, as isolated wetlands and waters of the United States, are regulated by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act. The Corps generally does not require individual permits for impacts on less than one acre of wetlands or isolated waters of the United States above the headwaters. Most individual vernal pools are less than one acre in size and fall under nationwide permit. Thus, for most pools, section 404 of the Clean Water Act has not historically provided adequate protection to these species from grading or fill activities. However, in October 1987, the Corps released a Public Notice proposing to exercise their discretionary authority and exert jurisdiction over vernal pools regardless of size or the

lack of sensitive or endangered species in the pools. Informally the Corps has been requiring permits for the discharge of fill into vernal pools. However, they have yet to officially require notification to the Corps Regulatory Branch of proposals to discharge fill material into vernal pools.

Section 404 regulates the discharge of fill material, but it does not regulate other activities such as grazing, off-road vehicle activity, and seeding with non-native species. Moreover, section 404 of the Clean Water Act does not regulate activities within the watershed (i.e., adjacent upland) of vernal pools. The watershed is an essential component of the vernal pool ecosystem. The disturbance and/or loss of watershed can result in greatly reduced amount and duration of water in the vernal pool and thereby adversely affect all four of the proposed species.

Pools containing the federally listed *Pogogyne abramsii* have been subject to individual permit actions under section 404 of the Clean Water Act because of the presence of an endangered species. In the past, *P. nudiuscula* may have occurred in the same pools as *P. abramsii*, east of Balboa Park and south of Mission Valley in San Diego; however, these pools have been lost (Bauder 1986). *Orcuttia californica* and *P. abramsii* are not sympatric. Thus, the listing of *P. abramsii* has not reduced the degree of threat to *P. nudiuscula* and *O. californica*.

Pogogyne nudiuscula, *Orcuttia californica*, and *Eryngium aristulatum* var. *parishii* are listed as endangered by the California Fish and Game Commission (State). Listing by the State requires that individuals who wish to possess listed species obtain a memorandum of understanding from the California Department of Fish and Game (Department). Under the California Endangered Species Act of 1985, State lead agencies are required to consult with the Department when their projects would affect State listed species. Few State projects are anticipated that would affect *P. nudiuscula*, *O. californica*, *E. aristulatum* var. *parishii*, and the Riverside fairy shrimp. The prohibition against possession does not reduce the degree of threat resulting from adverse modification of vernal pool habitat incidental to other activities such as grading.

No formal programs currently exist to protect the Riverside fairy shrimp. In response to concerns expressed by conservation organizations, the California Department of Fish and Game, and the Fish and Wildlife Service, the County of Riverside has conditioned one Specific Plan to set one

pool aside as an area for further study to provide temporary protection for the Riverside fairy shrimp; the remainder of the large residential project was approved. The County Planning Director indicated that the County would attempt to prevent grading on another site where an approved tract would eliminate one pool. This site, however, was recently cleared. No Federal or State laws protect the Riverside fairy shrimp, and minimal protection given to the species has been the result of local planning decisions.

In 1980, the City of San Diego instituted a vernal pool preservation program wherein developers pay a fee to a preservation fund when a project would destroy vernal pools. The amount of the fee required, \$4,000.00 per vernal acre (usually only a small fraction of a typical acre of land containing vernal pools), is not sufficient to replace the lost habitat that, in some cases, sells far in excess of \$100,000 per acre. The City of San Diego has accumulated approximately \$700,000 (from collections and interest) through this program for the loss of over 800 pools. The City of San Diego has purchased one 9 acre site containing several vernal pools utilizing \$450,000 of the mitigation fund.

During 1986, a study of vernal pools revealed that little protection has been afforded vernal pools even though several jurisdictions may apply. Recorded vernal pool losses since 1979 indicated that 79 percent of pools covered under the City of San Diego's plan and the California Environmental Quality Act have been lost. Those pool groups where permits pursuant to section 404 of the Clean Water Act were required have shown a 26 percent loss. Eight percent of the pools on federally-owned lands have been lost (Bauder 1986).

E. Other Natural or Manmade Factors Affecting Their Continued Existence.

Many vernal pools on Otay Mesa have become dominated by alien plants such as the common grass *Lolium perenne*. This species is tolerant of inundation and crowds out the native vernal pool species such as *Pogogyne nudiuscula*, *Orcuttia californica*, and *Eryngium aristulatum* var. *parishii*. Ranchers have introduced exotic species into some areas to increase the amount of forage available to livestock.

Pogogyne nudiuscula remains on a few sites on Otay Mesa in San Diego County. *Orcuttia californica* also is restricted to a few sites on Otay Mesa and on the Santa Rose Plateau. Unpredictable natural events such as drought would be more devastating to these species due to their fragmented

and restricted range. The geographically restricted range and distribution of these species increases the possibility that ordinary agricultural activity or development in these rapidly growing areas could destroy a significant portion of the species' remaining population and habitat.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in determining to propose this rule. Based upon this evaluation, the preferred action is to list *Pogogyne nudiuscula*, *Orcuttia californica*, *Eryngium aristulatum* var. *parishii*, and the Riverside fairy shrimp as endangered. These species are California endemics with very specific habitat requirements. Endangered status is proposed because urban development, agricultural land conversion, and other factors have destroyed 97 percent of the habitat that was once available in the San Diego area. For the reasons discussed below the Service is not proposing to designate critical habitat for these species.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat concurrently with determining a species to be endangered or threatened. The Service finds that designation of critical habitat for these three plant species and the Riverside fairy shrimp is not prudent at this time. As discussed under Factor A in the "Summary of Factors Affecting the Species," these plant species are vulnerable to trampling. Curiosity seekers may investigate vernal pools and inadvertently further degrade the habitat of these three plants and the Riverside fairy shrimp by trampling. Publication of precise maps and descriptions of critical habitat for the three plants would increase the degree of threat to these plants from take or vandalism and, therefore, could contribute to their decline and increase enforcement problems. The listing of the plants as endangered publicizes their rarity and, thus, can make these plants more attractive to researchers, curiosity seekers, or collectors of rare plants. All involved parties and landowners will be notified of the general location and importance of protecting the habitat of these species. Protection of the habitat of these species will be addressed through the recovery process and through the section 7 consultation process. Therefore, the Service finds that it would not be prudent to

determine critical habitat for *Pogogyne nudiuscula*, *Orcuttia californica*, *Eryngium aristulatum* var. *parishii*, and the Riverside fairy shrimp at this time, because such designation would increase the degree of threat from vandalism, collecting, or other human activities and because it is unlikely to aid in the conservation of these species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated following listing. The protection required of Federal agencies, the prohibitions against taking and harm of the Riverside fairy shrimp, and certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies 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 being proposed. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, 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 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 must enter into formal consultation with the Service.

Federal agencies expected to have involvement with these species include the U.S. Army Corps of Engineers and the Environmental Protection Agency due to their permit authority under section 404 of the Clean Water Act. Federal Aviation Administration jurisdiction would apply to vernal pools

near Montgomery Field within the City limits of San Diego and at Brown Air Field on Otay Mesa. Miramar Naval Air Station contains vernal pools with not only the three plant species but also *Pogogyne abramsii* which is presently listed as endangered. Camp Pendleton contains some vernal pools and is owned by the U.S. Marine Corps. The Veterans Administration will be required to consider the consequences of funding housing loans where these species or their habitat occur. The Immigration and Naturalization Service will need to evaluate its activities and its effects on these species. This agency may be able to offer some help where trampling associated with Mexican citizens entering the United States is occurring. The Federal Highway Administration will likely be involved through potential funding of a portion of future highway construction that could affect these species. The Bureau of Indian Affairs may need to evaluate future proposals that may affect the Riverside fairy shrimp.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general prohibitions and exceptions that apply to all endangered plants. With respect to the three plants proposed herein, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, would apply. These prohibitions, in part, make it illegal with respect to any endangered plant for any person subject to the jurisdiction of the United States to import or export; transport in interstate or foreign commerce in the course of a commercial activity; sell or offer for sale in interstate or foreign commerce; remove and reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any area under Federal jurisdiction; or remove, cut, dig up, damage, or destroy any such species on any other area in knowing violation of any State law or regulation or in the course of any violation of a State criminal trespass law. Certain exceptions can apply to agents of the Service and State conservation agencies.

The Act and implementing regulations found at 50 CFR 17.21 for endangered species set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt any of these), import or export, transport in interstate or foreign

commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed wildlife. It also would be illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered plants under certain circumstances. It is anticipated that few trade permits would ever be sought or issued for the three plant species since these species are not common in cultivation or in the wild. Additionally, these species have specific germination and growth requirements consisting of seasonal inundation, which would be difficult to recreate in cultivation.

Regulations governing permits to carry out otherwise prohibited activities involving endangered wildlife are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued for a specified time to relieve undue economic hardship that would be suffered if such relief were not available. The Riverside fairy shrimp is not in trade, an such permit requests are not expected.

Requests for copies of the regulations on listed wildlife and plants and inquiries regarding them may be addressed to the office of Management Authority, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 432, Arlington, Virginia 22203-3507 (703/358/2104 or FTS 921-2104).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposal are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to these species;
- (2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of these species; and,

(4) Current or planned activities in the subject area and their possible impacts on these species.

The final decision on this proposal will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Office Supervisor (See ADDRESSES section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

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Author

The primary authors of this proposed rule are Mr. Peter A. Stine and Ms. Nancy Gilbert, U.S. Fish and Wildlife Service, Laguna Niguel Field Station (See ADDRESSES section), and Ms. Karla Kramer, Eastside Federal Complex, 911 NE 11th Avenue, Portland, Oregon 97232-4181.

List of Subjects in 50 CFR Part 17

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

Proposed Regulations Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

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. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under the families indicated, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

* * * * *
 (h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Apiaceae—Parsley family						
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	U.S.A. (CA)	E	NA		NA
Lamiaceae—Mint family						
<i>Pogogyne nudiuscula</i>	Otay Mesa mint	U.S.A. (CA)	E	NA		NA
Poaceae—Grass family						
<i>Orcuttia californica</i>	California Orcutt grass	U.S.A. (CA)	E	NA		NA

3. It is proposed to amend § 17.11(h) by adding the following, in alphabetical

order under Crustaceans, to the List of Endangered and Threatened Wildlife:

§ 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							
Shrimp, Riverside fairy	<i>Streptocephalus woottoni</i>	U.S.A. (CA)		E	NA		NA

Dated: September 30, 1991.

Richard N. Smith,

Director, U.S. Fish and Wildlife Service.

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