burdensome. This requirement is intended to provide maximum assurance that the notice will be received by the patent holder and the NDA holder, and that such receipt will be documented adequately. In addition, FDA has concluded that adding new methods of notification presents complications in ensuring that notification is received by sponsors. Accordingly, FDA is withdrawing its proposed rule to permit new drug and abbreviated new drug applicants to provide notice of certification of invalidity or noninfringement of a patent to patent owners and NDA holders by overnight delivery service, facsimile, and electronic mail, in addition to USPS registered or certified mail, return receipt requested, or another method approved in advance by the agency.

Margaret M. Dotzel,
Acting Associate Commissioner for Policy.

[FR Doc. 00–5527 Filed 3–7–00; 8:45 am]
BILLING CODE 4160–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[DA 00–168; MM Docket No. 00–15, RM–9804; MM Docket No. 00–16, RM–9805]

Radio Broadcasting Services; Susquehanna, PA; and Burke, SD

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: This document proposes two new allotments at Susquehanna, Pennsylvania, and Burke, South Dakota. The Commission requests comments on a petition filed by Tammy M. Celenza proposing the allotment of Channel 227A at Susquehanna, Pennsylvania, as the community’s second local FM transmission service. Channel 227A can be allotted to Susquehanna in compliance with the Commission’s minimum distance separation requirements with a site restriction of 6.3 kilometers (3.9 miles) east to avoid short-spacings to the licensed sites of Station WBZD–FM, Channel 227B1, Muncey, Pennsylvania, and Station WKZX(FM), Channel 230B, Norwich, New York. The coordinates for Channel 227A at Susquehanna are 41°55′44″ North Latitude and 75°31′50″ West Longitude. Since Susquehanna is located within 320 kilometers (200 miles) of the U.S.-Canadian border, Canadian concurrence has been requested.

DATES: Comments must be filed on or before March 20, 2000, and reply comments on or before April 4, 2000.

ADDRESSES: Federal Communications Commission, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioner, his counsel, or consultant, as follows: Michael Celenza, Celenza Communications, 41 Kathleen Crescent, Coram, New York 11727 (Consultant for Tammy M. Celenza); and Heather Drischel, General Partner, Nationwide Radio Stations, 496 Country Road 308, Big Creek, Mississippi 38914 (Petitioner).

FOR FURTHER INFORMATION CONTACT: Sharon P. McDonald, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission’s Notice of Proposed Rule Making, MM Docket No. 00–15; and MM Docket No. 00–16, adopted January 19, 2000, and released February 4, 2000. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Information Center (Room CY–A257), 445 12th Street, SW., Washington, DC. The complete text of this decision may also be purchased from the Commission’s copy contractor, International Transcription Service, Inc., (202) 857–3800, 1231 20th Street, NW., Washington, DC 20036.

The Commission also requests comments on a petition filed by Nationwide Radio Stations proposing the allotment of Channel 264A at Burke, South Dakota, as the community’s first local aural transmission service.

Channel 264A can be allotted to Burke in compliance with the Commission’s minimum distance separation requirements with a site restriction of 3.5 kilometers (2.2 miles) east to avoid a short-spacing to the vacant allotment site for Channel 264A at Mission, South Dakota. The coordinates for Channel 264A at Burke are 43°11′06″ North Latitude and 99°15′02″ West Longitude.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding. Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all ex parte contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible ex parte contacts.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Federal Communications Commission.

John A. Karousos,
Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 00–5545 Filed 3–7–00; 8:45 am]
BILLING CODE 6712–01–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AF98

Endangered and Threatened Wildlife and Plants; Proposed Determination of Critical Habitat for the Alameda Whipsnake (Masticophis lateralis euryxanthus)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to designate critical habitat pursuant to the Endangered Species Act of 1973, as amended (Act), for the Alameda whipsnake (Masticophis lateralis euryxanthus). A total of approximately 164,663 hectares (406,708 acres) of land fall within the boundaries of the proposed critical habitat designation. Proposed critical habitat is located in Contra Costa, Alameda, San Joaquin, and Santa Clara counties, California. If this proposal is made final, section 7 of the Act, which prohibits destruction or adverse modification of critical habitat by any activity funded, authorized, or carried out by any Federal agency, would apply to the designated critical habitat for the Alameda whipsnake. Section 4 of the Act requires us to consider economic and other impacts of specifying any particular area as critical habitat.

We solicit data and comments from the public on all aspects of this proposal, including data on economic and other impacts of the designation and our approaches for handling habitat conservation plans (HCPs). We may revise this proposal to incorporate or address new information received during the comment period.

DATES: Comments from all interested parties must be received by May 8, 2000. Public hearing requests must be received by April 24, 2000.
The distribution in California, of both subspecies, coincides closely with chaparral (Jennings 1983, Stebbins 1985). Recent telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, whipsnakes frequently venture into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland. Most telemetry locations are within 50 meters (170 feet (ft)) of scrub habitat, but distances of greater than 150 m (500 ft) occur (Swaim 1994). Initial data indicate that adjacent habitats may play a crucial role in certain life history and physiological needs of the Alameda whipsnake, but the full extent has yet to be determined. Telemetry data indicate that whipsnakes remain in grasslands for periods ranging from a few hours to several weeks at a time. Grassland habitats are used by male whipsnakes most extensively during the mating season in spring. Female whipsnakes use grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites (Swaim 1994).

Rock outcrops are an important feature of Alameda whipsnake habitat because they provide retreat opportunities for whipsnakes and promote lizard populations. Lizards, especially the western fence lizard (Sceloporus occidentalis), appear to be the most important prey item of whipsnakes (Stebbins 1985; Swaim 1994; Harry Green, Museum of Vertebrate Zoology, U.C. Berkeley, pers. comm. 1998), although other prey items are taken, including skinks, frogs, snakes, and birds (Stebbins 1985, Swaim 1994). Most radio telemetry locations for whipsnakes were within the distribution of major rock outcroppings and talus (Swaim 1994).

Alameda whipsnakes have been found in association with a variety of shrub communities including diablan sage scrub, coyote bush scrub, and chamise chaparral (Swaim 1994), also classified as coastal scrub, mixed chaparral, and chamise-redshank chaparral (Mayer and Laudenslayer 1986). However, the type of vegetation may have less to do with preference by the whipsnake than the extent of the canopy, slope exposure, the availability of retreats such as rock outcrops and rodent burrows, and prey species composition and abundance (Swaim 1994; K. Swaim, Swaim Biological Consulting, pers. comm. 1999). Alameda whipsnakes have been sighted or found dead a significant distance from the nearest shrub community (K. Swaim, pers. comm. 1999). The reasons for such movements are unknown.

Initial studies indicated that Alameda whipsnakes occurred where the canopy was open (less than 75 percent of the total area within the shrub or chaparral community was covered by shrub crown) or partially open (between 75 and 90 percent of the total area was covered with shrub crown), and only seldom did whipsnakes occur in closed canopy (greater than 90 percent of the area was covered by shrub crown). However, trapping efforts may have been biased due to the difficulty of setting traps in dense scrub (Swaim 1994; K. Swaim, pers. comm. 1999).

Core areas (areas of concentrated use) of the Alameda whipsnake most commonly occur on east, south, southeast, and southwest facing slopes (Swaim 1994). However, recent information indicates that whipsnakes do make use of north facing slopes in more open stands of scrub habitat (K. Swaim, pers. comm. 1999).

Adult snakes appear to have a bimodal seasonal activity pattern with peaks during the breeding season and a smaller peak during late summer and early fall. Although short above-ground movements may occur during the winter, Alameda whipsnakes generally retreat in November into a hibernaculum (shelter used during the snake’s dormancy period) and emerge in March. Courtship and mating occur from late-March through mid-June. During this time, males move around throughout their home ranges, while females appear to remain at or near their hibernaculum, where mating occurs. Suspected egg-laying sites for two females were located in grassland with scattered shrub habitat. Male home ranges of 1.9 to 8.7 hectares (ha) (4.7 to 21.5 acres (ac)) (mean of 5.5 ha or 13.6 ac) were recorded, and showed a high degree of spatial overlap. Several individual snakes monitored for nearly an entire activity season appeared to maintain a stable home range. Movements of these individuals were multi-directional, and individual snakes returned to specific areas and retreat sites after long intervals of non-use. Snakes had one or more core areas within their home range, while large areas of the home range received little use (Swaim 1994).

**Previous Federal Action**

The September 18, 1985, Notice of Review (50 FR 37958) included the Alameda whipsnake as a category 2 candidate species for possible future listing as endangered or threatened. Category 2 candidates were those taxa for which listing as threatened or endangered might be warranted, but for which adequate data on biological...
vulnerability and threats were not available to support issuance of listing proposals. The January 6, 1989, Notice of Review (54 FR 554) solicited information on its status as a category 2 candidate species. The Alameda whipsnake was moved to category 1 in the November 21, 1991, Notice of Review (56 FR 58804) on the basis of significant increases in habitat loss and threats occurring throughout its range. Category 1 candidates were defined as taxa for which we had on file substantial information on biological vulnerability and threats to support preparation of listing proposals. On February 4, 1994, we published a proposed rule in the Federal Register (59 FR 5377) to list the Alameda whipsnake as an endangered species. On December 5, 1997, we published a final rule listing the Alameda whipsnake as threatened (62 FR 64306).

On March 4, 1999, the Southwest Center for Biological Diversity, the Center for Biological Diversity, and Christians Caring for Creation filed a lawsuit in the Northern District of California against the U.S. Fish and Wildlife Service and Bruce Babbitt, Secretary of the Department of the Interior (Secretary), for failure to designate critical habitat for seven species: the Alameda whipsnake (*Masticophis lateralis euryxanthus*), the Zayante band-winged grasshopper (*Trimerotropis infantilis*), the Morro shoulderband snail (*Helminthoglypta wulkeriana*), the Arroyo southwestern toad (*Bufo microscaphus californicus*), the San Bernardino kangaroo rat (*Dipodomys merriami parvus*), the spectacled eider (*Somateria fischeri*), and the Steller’s eider (*Polysticta stelleri*) (*Southwest Center for Biological Diversity v. U.S. Fish and Wildlife, CIV 99–1003 MMC*).

On November 5, 1999, William Alsup, U.S. District Judge, dismissed the plaintiffs’ lawsuit pursuant to a settlement agreement entered into by the parties. Publication of this proposed rule is consistent with that settlement agreement.

Absent the settlement agreement, the processing of this proposed rule does not conform with our current Listing Priority Guidance for fiscal year 2000 published in the Federal Register on October 22, 1999 (64 FR 57114). The guidance clarifies the order in which we will process rulemakings. Highest priority is processing emergency listing rules for any species determined to face a significant and imminent risk to its well-being (Priority 1). Second priority (Priority 2) is processing determinations on proposed additions to the lists of endangered and threatened wildlife and plants. Third priority is processing new proposals to add species to the lists. The processing of administrative petition findings (petitions filed under section 4 of the Act) is the fourth priority. We are processing this proposed rule in compliance with the above-mentioned settlement agreement.

**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 consideration or protection and; (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon determination that such areas are essential for the conservation of the species. “Conservation” means the use of all available 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.

Section 4(b)(2) of the Act requires that we base critical habitat proposals upon the best scientific and commercial data available, after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. We may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species (section 4(b)(2) of the Act).

Designation of critical habitat can help focus conservation activities for a listed species by identifying areas that contain the physical and biological features that are essential for conservation of that species. Designation of critical habitat alerts the public as well as land-managing agencies to the importance of these areas.

Critical habitat also identifies areas that may require special management considerations or protection, and may provide protection to areas where significant threats to the species have been identified. Critical habitat receives protection from destruction or adverse modification through required consultation under section 7 of the Act with regard to actions carried out, funded, or authorized by a Federal agency, or through required conferences on Federal actions that are likely to result in the adverse modification or destruction of proposed critical habitat. Aside from the protection that may be provided under section 7, the Act does not provide other forms of protection to lands designated as critical habitat.

Section 7(a)(2) of the Act requires Federal agencies to consult with us to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a threatened or endangered species, or result in the destruction or adverse modification of critical habitat. “Jeopardize the continued existence” (of a species) is defined as 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 (50 CFR 402.02). When multiple units of critical habitat are designated, each unit may serve as the basis of a jeopardy analysis if protection of different facets of the species’ life cycle or its distribution are essential to the species as a whole for both its survival and recovery.

Designating critical habitat does not, in itself, lead to recovery of a listed species. Designation does not create or mandate a management plan, establish numerical population goals, prescribe specific management actions (inside or outside of critical habitat), or directly affect areas not designated as critical habitat. Specific management recommendations for critical habitat are most appropriately addressed in recovery plans and management plans, and through section 7 consultation.

Critical habitat identifies specific areas that are essential to the conservation of a listed species and that may require special management considerations or protection. Areas that do not currently contain the habitat components necessary for the primary biological needs of a species but are likely to develop them in the future may be essential to the conservation of the species and may be designated as critical habitat.

We did not propose to designate critical habitat for the Alameda whipsnake within the proposed or final listing rulemaking because, at the time of listing, we knew of no Federal lands within the five whipsnake populations. We also believed the likelihood of Federal agency involvement on private and public, non-Federal lands was...
remote. Based on information available at the time of listing, we believed that only 20 percent of known whipsnake habitat occurred on private lands, and anticipated that urban development on private lands would occur only along the periphery of whipsnake populations. In addition, we believed that the need for active fire management programs at this urban-wildland interface would preclude those private lands from being considered habitat essential to the conservation of the species. We found that critical habitat designation was not prudent due to lack of any significant benefit beyond that conferred by listing.

Since the Alameda whipsnake was listed, we have found that there are a greater number of Federal actions that could trigger the need for an interagency consultation than was believed at the time the Alameda whipsnake was listed. We are now aware of federally owned lands that occur within the range of the Alameda whipsnake, including several Bureau of Land Management parcels in the Mount Diablo-Black Hills population area. In addition, an Alameda whipsnake was recently captured on land owned by the U.S. Department of Energy at their Site 300 facility, a Federal site previously unknown to be inhabited by Alameda whipsnakes. We are also aware of a number of activities with a Federal nexus on private lands within whipsnake populations, including activities associated with the issuance of Clean Water Act section 404 permits and Federal Emergency Management Agency fire protection projects.

We now believe that private lands play a more important role in whipsnake conservation than was originally believed. An increasing amount of private land has been found to be occupied by the Alameda whipsnake, comprising more than 20 percent of land within the five whipsnake populations. Large amounts of occupied, high-value Alameda whipsnake habitat occur on private lands that are evenly distributed throughout whipsnake population areas. We now believe that areas that are essential to the conservation of the species include private lands.

**Primary Constituent Elements**

In accordance with section 3(5)(A)(i) 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 and to consider those physical and biological features that are essential to conservation of the species and that may require special management considerations or protection. Such requirements include, but are not limited to—space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The areas we are proposing to designate as critical habitat provide some or all of those habitat components essential for the primary biological needs of the Alameda whipsnake, also called primary constituent elements. The primary constituent elements for the Alameda whipsnake are those habitat components that are essential for the primary biological needs of foraging, sheltering, breeding, maturation, and dispersal. The primary constituent elements are found, or could develop, in areas that support or have the potential to support scrub communities, including mixed chaparral, chamise-redshank chaparral, coastal scrub, and annual grassland and oak woodlands that lie adjacent to scrub habitats. In addition, the primary constituent elements for the Alameda whipsnake may be found in grasslands and various oak woodlands that are linked to scrub habitats by substantial rock outcrops or riparian corridors. Other habitat features that provide a source of cover for the whipsnake during dispersal or are near scrub habitats and contain habitat features (e.g., rock outcrops) that support adequate prey populations may also contain primary constituent elements for the Alameda whipsnake. Within these communities, Alameda whipsnakes require plant canopy covers that supply a suitable range of temperatures for the species’ normal behavioral and physiological requirements (including but not limited to foraging, breeding, and maturation). Openings in the plant canopy or scrub/grassland edge provide sunning and foraging areas. Corridors of plant cover and retreats (including rock outcrops) sufficient to provide for dispersal between areas of habitat, and plant community patches of sufficient size to prevent the deleterious effects of isolation (such as inbreeding or the loss of a subpopulation due to a catastrophic event) are also essential. Within these plant communities, specific habitat features needed by whipsnakes include, but are not limited to, small mammal burrows, rock outcrops, talus, and other forms of cover to provide temperature regulation, shelter from predators, egg laying sites, and winter hibernaculum. Many of these same elements are important in maintaining prey species. Adequate insect populations are necessary to sustain prey populations.

**Criteria Used To Identify Critical Habitat**

We considered several qualitative criteria in the selection and proposal of specific areas or units for Alameda whipsnake critical habitat. Such criteria focused on designating units (1) throughout the geographic and elevation range of the species; (2) within various occupied plant communities, such as diablan sage scrub, coyote bush scrub, and chamise chaparral; (3) in areas of large, contiguous blocks of occupied habitat; and (4) in areas that link contiguous blocks of occupied habitat (i.e., linkage areas).

**Methods**

In developing critical habitat for the Alameda whipsnake, we used data on known Alameda whipsnake locations to initially identify important areas. Through the use of 1998 and 1999 1:12,000 aerial photos and 1994 digital orthophotos, we examined the extent of suitable habitat that was in the vicinity of known whipsnake locations. Critical habitat includes both suitable habitat and areas that link suitable habitat, as these links facilitate movement of individuals between habitat areas and are important for dispersal and gene flow (Beier and Noss 1998). We have determined seven separate units of critical habitat, five of which represent primary breeding, feeding, and sheltering areas, while the other two represent corridors (See attached figures). The range of these critical habitat units extends in the south from Wauhab Ridge, Del Valle area to Cedar Mountain Ridge, in Santa Clara County; north to the northernmost extent of suitable habitat in Contra Costa County; west to the westernmost extent of the inner Coastal Range; and in the east, to the easternmost extent of suitable habitat. We could not depend solely on federally owned lands for critical habitat designation as they are limited in geographic location, size, and habitat quality. In addition to federally owned lands, we propose to designate critical habitat on non-Federal public lands and privately owned lands, including California Department of Parks and Recreation lands, regional and local park lands, and water district lands.
Areas proposed for designation as critical habitat meet the definition of critical habitat under section 3 of the Act in that they are within the geographical areas occupied by the species, are essential to conservation of the species, and are in need of special management considerations or protection.

In selecting areas of proposed critical habitat, we attempted to avoid developed areas such as towns, intensive agricultural areas such as vineyards, and other lands unlikely to contribute to Alameda whipsnake conservation. Given the short period of time in which we were required to complete this proposed rule, we were unable to map critical habitat in sufficient detail to exclude all such areas. However, within the delineated proposed critical habitat boundaries, only lands containing or lands likely to develop those habitat components essential for the primary biological needs of the Alameda whipsnake are considered critical habitat. Existing features and structures within the critical habitat boundary, such as buildings, roads, canals, railroads, large water bodies, and other features not currently containing or likely to develop these habitat components, are not considered critical habitat. Two areas, the north and south corridor (unit 6 connecting units 1 and 2; and unit 7 connecting units 3 and 5), contain some urban development. These two corridors are extremely narrow, and, therefore, maintaining as much area within these corridors as possible to ensure the long-term connectivity between whipsnake populations is important. As stated above, urban structures that occur within these two units are not considered critical habitat for the Alameda whipsnake. These two units may not provide sufficient habitat necessary to allow for breeding and offer limited opportunities of foraging and sheltering. However, these areas should be considered critical habitat as they provide for the vital function of dispersal.

We considered the existing status of lands in designating areas as critical habitat. Section 10(a) of the Act authorizes us to issue permits for the taking of listed species incidental to otherwise lawful activities. Incidental take permit applications must be supported by a habitat conservation plan (HCP) that identifies conservation measures that the permittee agrees to implement for the species to minimize and mitigate the impacts of the requested incidental take. Currently, no approved HCPs cover the Alameda whipsnake or its habitat. However, we expect critical habitat may be used as a tool to help identify areas within the range of the Alameda whipsnake that are most critical for the conservation of the species. We will encourage development of HCPs for such areas on non-Federal lands because we consider HCPs to be one of the most important methods through which non-Federal landowners can resolve endangered species conflicts. We provide technical assistance and work closely with applicants throughout development of HCPs to help identify special management considerations for the Alameda whipsnake. We intend for HCPs to provide a package of protection and management measures sufficient to address the conservation needs of the species.

We are currently drafting a recovery plan for the Alameda whipsnake. Recovery actions proposed within this draft recovery plan will include a more thorough analysis of recovery needs of the Alameda whipsnake. Therefore, we may amend critical habitat at a later date based on information gained through the recovery planning process.

In summary, the proposed critical habitat areas described below constitute our best assessment of areas needed for the species’ conservation.

Proposed Critical Habitat Designation

The approximate area of proposed critical habitat by county is shown in Table 1. Proposed critical habitat includes Alameda whipsnake habitat throughout the species’ range in the United States (i.e., Contra Costa, Alameda, San Joaquin, and Santa Clara Counties, California). Lands proposed are under private, State, and Federal ownership, with Federal lands including lands managed by the Bureau of Land Management and the U.S. Department of Energy. Lands proposed as critical habitat have been divided into seven Critical Habitat Units. In determining areas that are essential for the survival and recovery of the species, we used the best scientific information available. This information included habitat suitability and site-specific species information. To date, only initial research has been done to identify and define specific habitat needs of Alameda whipsnakes, and no comprehensive surveys have been conducted to quantify their distribution or abundance. Only limited and preliminary habitat assessment and whipsnake presence work has begun on the Department of Energy’s Lawrence Livermore National Laboratory Site 300, East Bay Regional Park District’s Tilden Park, San Francisco Water District’s San Antonio Reservoir, Contra Costa Water District’s Los Vaqueros Reservoir, East Bay Municipal Utility District’s San Leandro Watershed and Siesta Valley, Pleasanton Ridge Conservation Bank, and Signature Properties’ Bailey Ranch. Some small parcels have also been surveyed; however, these surveys were in conjunction with development and, in most cases, that habitat has been destroyed.

We emphasized areas containing most of the verified Alameda whipsnake occurrences, especially recently identified locations. To maintain genetic and demographic interchange that will help maintain the viability of a regional metapopulation, we included corridor areas that allow movement between areas supporting Alameda whipsnakes. These corridors or connecting areas, while supporting some habitat suitable for foraging, shelter, breeding, and maturation, were primarily included to facilitate dispersal.

Table 1

<table>
<thead>
<tr>
<th>County</th>
<th>Federal land*</th>
<th>Local/State land</th>
<th>Private land</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Alameda</td>
<td>202 ha (500 ac)</td>
<td>26,440 ha (65,492 ac)</td>
<td>56,166 ha (139,124 ac)</td>
<td>82,808 ha (205,116 ac)</td>
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<td>Contra Costa</td>
<td>32 ha (80 ac)</td>
<td>31,970 ha (79,189 ac)</td>
<td>35,276 ha (87,378 ac)</td>
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<td>San Joaquin</td>
<td>495 ha (1,225 ac)</td>
<td>525 ha (1,300 ac)</td>
<td>4,945 ha (12,250 ac)</td>
<td>5,965 ha (14,775 ac)</td>
</tr>
</tbody>
</table>
A brief description of each critical habitat unit and our reasons for proposing those areas as critical habitat for the Alameda whipsnake are given below:

Unit 1: Tilden-Briones Unit
Unit 1 encompasses approximately 16,113 ha (39,815 ac) within the Tilden-Briones unit and is the northeastern unit of the five Alameda whipsnake metapopulations and represents primary breeding, feeding, and sheltering habitat for the whipsnake. Most of this unit occurs in Contra Costa County, except for the southwestern tip which occurs in Alameda County. This unit is bordered to the north by State Highway 4 and the cities of Pinole, Hercules, and Martinez; to the south by State Highway 24 and the City of Orinda Village; to the west by Interstate 80 and the cities of Berkeley, El Cerrito, and Richmond; and to the east by Interstate 680 and the City of Pleasant Hill. A substantial amount of public land exists within this unit, including East Bay Regional Park District’s Tilden, Wildcat, and Briones Regional Parks and East Bay Municipal Utilities District watershed lands.

Unit 2: Oakland-Las Trampas Unit
Unit 2 encompasses approximately 21,922 ha (54,170 ac) within the Oakland-Las Trampas unit and occurs south of the Tilden-Briones unit and north of the Hayward-Pleasanton Ridge unit and represents primary breeding, feeding, and sheltering habitat for the Alameda whipsnake. This unit is split evenly between Alameda and Contra Costa Counties. This unit is surrounded by the Save Mount Diablo Foundation and other East Bay Regional Parks, and other East Bay Regional Park District holdings. The privately owned gravel quarries occur within this unit.

Unit 3: Hayward-Pleasanton Ridge Unit
Unit 3 encompasses approximately 12,955 ha (32,011 ac) within the Hayward-Pleasanton Ridge unit and occurs south of the Oakland-Las Trampas unit and northwest of the Sunol-Cedar Mountain unit and represents primary breeding, feeding, and sheltering habitat for the Alameda whipsnake. This unit occurs solely in Alameda County. This unit is surrounded by Interstate Highway 580 to the north; Niles Canyon Road (State Highway 84) to the south; the cities of Hayward and Union City to the east; and Interstate Highway 680 and the City of Pleasanton to the east. This unit is bisected by Palomares Canyon Road, which runs from Interstate Highway 580 to Niles Canyon Road. Greater than 30 percent of this unit occurs within public ownership including Garin, Dry Creek, and Pleasanton Ridge Regional Parks and other East Bay Regional Park District holdings. The privately owned Pleasanton Ridge Conservation Bank also occurs in the northeastern section of this unit.

Unit 4: Mount Diablo-Black Hills Unit
Unit 4 encompasses approximately 40,386 ha (99,794 ac) within the Mount Diablo-Black Hills unit and completely encompasses Mount Diablo State Park and surrounding lands and represents primary Alameda whipsnake breeding, feeding, and sheltering habitat. A majority of this unit occurs in Contra Costa County, however the southern tip of this unit dips into Alameda County. This unit is surrounded by State Highway 4 and the cities of Clayton, Pittsburg and Antioch to the north; open grassland within Tassajara Valley just below the Alameda/Contra Costa County line to the south; the cities of Concord, Walnut Creek, and Danville to the west; and, to the east, by large expanses of grassland occurring west of State Highway 4, near the cities of Oakley and Brentwood. This unit contains large expanses of public lands including two small Bureau of Land Management parcels; Mount Diablo State Park; Contra Costa Water District’s Los Vaqueros Reservoir watershed; and Contra Loma, Black Diamond Mines, Morgan Territory, and Round Valley Regional Parks, and other East Bay Regional Park District holdings. Other public lands include lands owned by the Save Mount Diablo Foundation and the City of Walnut Creek. Two large, privately owned gravel quarries occur within this unit.

Unit 5: Sunol-Cedar Mountain Unit
Unit 5 encompasses approximately 69,335 ha (171,328 ac) within the Sunol-Cedar Mountain unit and is the largest and the southernmost of the seven critical habitat units and represents primary breeding, feeding, and sheltering habitat for the Alameda whipsnake. A majority of this unit occurs in Alameda County, however it does overlap with western San Joaquin and northern Santa Clara Counties. The northern boundary of this unit runs parallel to State Highway 84 and Corral Hollow Road, south of the cities of Pleasanton and Livermore and Tesla Road. The southern boundary lies below Calaveras Reservoir and captures all of Wauhab and Cedar Ridges in Santa Clara County and stretches to the east, north of the Alameda-San Joaquin-Santa Clara-Stanislaus County intersection. The western boundary lies east of Interstate Highway 680 and the greater San Jose urban areas. The eastern boundary lies within San Joaquin County a few miles east of the Alameda County line. This unit includes East Bay Regional Park District’s Sunol, Mission Peak, Ohlone, Camp Ohlone, and Del Valle complex, and San Francisco Water District’s Del Valle (San Antonio Reservoir) watershed. In addition, the Department of Energy’s Site 300 and the Save Mount Diablo Foundation’s Carnegie Recreation Area occur within the unit.
Unit 6: Caldecott Tunnel Unit

Unit 6 encompasses approximately 2,203 ha (5,445 ac) within the Caldecott Tunnel unit and occurs between units 1 and 2 where State Highway 24 tunnels under the Berkeley Hills for approximately 1.2 kilometers (4,000 feet) and represents a connector between units 1 and 2. This unit occurs solely in Contra Costa County. All suitable Alameda whipsnake habitat that occurs in this unit is privately owned.

Unit 7: Niles Canyon/Sunol Unit

Unit 7 encompasses approximately 1,677 ha (4,145 ac) within the Niles Canyon/Sunol unit and occurs between units 3 and 5 and lies south of State Highway 84 (Niles Canyon Road); north and west of Interstate 680; and east of the City of Fremont and represents a connector between units 3 and 5. This unit occurs solely in Alameda County. This unit includes East Bay Regional Park District’s Vargus Plateau and San Francisco Water District watershed lands. Impediments to whipsnake movement between units 3 and 7 include Alameda Creek, a 0.3–0.6-meter (12–24-inch) high concrete barrier that lies south of Niles Canyon Road and north of Alameda Creek, railroad tracks that run along both sides of Alameda Creek, and heavy vehicular traffic along Niles Canyon Road.

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 do not destroy or adversely modify 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.

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 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 actions 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 destroy or 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 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 reinculcate 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 reinstitution of consultation or conferencing with us on actions for which formal consultation has been completed if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat.

Formal conference reports on proposed critical habitat contain a biological opinion that is prepared according to 50 CFR 402.14, as if critical habitat were designated. We may adopt the formal conference report as the biological opinion when the 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 Alameda whipsnake 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 (Army 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 or permitted do not require section 7 consultation.

Section 4(b)(8) of the Act requires us to describe in any proposed or final regulation that designates critical habitat those activities involving a Federal action that may destroy or adversely modify such habitat or that may be affected by such designation. Activities that may destroy or adversely modify critical habitat include those that alter the primary constituent elements to the extent that the value of critical habitat for both the survival and recovery of the Alameda whipsnake is appreciably diminished. We note that such activities may also jeopardize the continued existence of the species. Such activities may include, but are not limited to:

1. Removing, thinning, or destroying vegetation, whether by burning or mechanical, chemical, or other means (e.g., fuels management, bulldozing, herbicide application, grazing, etc.) that have not been approved by the Service, exclusive of routine clearing of fuel breaks around urban boundaries that were constructed before the listing of the whipsnake on December 5, 1997;
2. Water transfers, diversion, or impoundment, groundwater pumping, irrigation, or other activity that causes barriers or deterrents to dispersal, inundates habitat, or significantly converts habitat (e.g., conversion to urban development, vineyards, landscaping);
3. Recreational activities that significantly deter the use of suitable
habitat areas by Alameda whipsnakes or alter habitat through associated maintenance activities (e.g., off-road vehicle parks, golf courses, and hiking, mountain biking, and horseback riding trails); (4) Sale, exchange, or lease of Federal land containing suitable habitat that is likely to result in the habitat being destroyed or appreciably degraded; and (5) Construction activities that destroy or appreciably degrade suitable habitat (e.g., urban development, building of recreational facilities such as off-road vehicle parks and golf courses, road building, drilling, mining, quarrying, and associated reclamation activities).

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 to 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, Sacramento Fish and Wildlife Office (see ADDRESSES section).

Designation of critical habitat could affect Federal agency activities including, but not limited to: (1) Sale, exchange, or lease of lands owned by the Bureau of Land Management or the Department of Energy; (2) Regulation of activities affecting waters of the United States by the Army Corps of Engineers under section 404 of the Clean Water Act; (3) Regulation of water flows, water delivery, damming, diversion, and channelization by the Bureau of Reclamation and the Army Corps of Engineers; (4) Regulation of grazing, recreation, or mining by the Bureau of Land Management; (5) Funding and implementation of disaster relief projects by the Federal Emergency Management Agency, including vegetation clearing to reduce the risk of a catastrophic wildfire event; (6) Funding and regulation of new road construction by the Federal Highways Administration; (7) Funding of low-interest loans to facilitate the construction of low income housing by the Department of Housing and Urban Development; (8) Clearing of vegetation by the Department of Energy facilitating the destruction of air and water quality standards under the Clean Air Act and the Clean Water Act and the cleanup of toxic waste and superfund sites under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) by the U.S. Environmental Protection Agency; and (10) Issuance of Endangered Species Act section 10(a)(1)(B) permits by the Fish and Wildlife Service for Habitat Conservation Plans.

Relationship to Incidental Take Permits Issued Under Section 10

As stated earlier, there are no approved HCPs within the proposed critical habitat designation. However, future HCPs are probable.

In the event that future HCPs covering the Alameda whipsnake are developed within the proposed critical habitat, we will work with applicants to ensure the HCPs provide for protection and management of habitat areas essential for the conservation of the Alameda whipsnake, while directing development and habitat modification to nonessential areas of lower habitat value. The HCP development process provides an opportunity for more intensive data collection and analysis regarding the use of particular habitat areas by the Alameda whipsnake. 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 fully 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. We believe that our analyses of these proposed HCPs and proposed permits under section 7 will show that covered activities carried out in accordance with the provisions of the HCPs and permits will not result in destruction or adverse modification of critical habitat.

We will provide technical assistance and work closely with applicants throughout the development of HCPs to identify appropriate conservation management and lands essential for the long-term conservation of the Alameda whipsnake. Preliminary HCPs exist for listed and non-listed species within the range of the Alameda whipsnake in areas proposed herein as critical habitat. By definition, these HCPs, coupled with appropriate adaptive management, should provide for the conservation of the species. We are soliciting comments on whether future approval of HCPs, and issuance of section 10(a)(1)(B) permits for the Alameda whipsnake, should trigger revision of designated critical habitat to exclude lands within the HCP area and, if so, by what mechanism (see Public Comments Solicited section).

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. Although we could not identify any incremental effects of this proposed critical habitat designation above those impacts of listing, we will conduct an economic analysis to further evaluate this finding. We will conduct the economic analysis for this proposal prior to a final determination. When the draft economic analysis is completed, we will announce its availability with a notice in the Federal Register, and we will reopen the comment period for 30 days at that time to accept comments on the economic analysis or further comments on the proposed rule.
Public Comments Solicited

We intend for any final action resulting from this proposal to be as accurate and as effective as possible. Therefore, we solicit comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule. We particularly seek comments concerning:

(1) The reasons why any habitat should or should not be determined to be critical habitat for the Alameda whipsnake as provided by section 4 of the Act, including whether the benefits of designation will outweigh any threats to the species due to designation;

(2) Specific information on the amount and distribution of Alameda whipsnakes and their habitat, and what habitat is essential to the conservation of the species and why;

(3) Land use practices and current or planned activities in the subject areas and their possible impacts on proposed critical habitat;

(4) Any foreseeable economic or other impacts resulting from the proposed designation of critical habitat, in particular, any impacts on small entities or families; and

(5) Economic and other values associated with designating critical habitat for the Alameda whipsnake such as those derived from non-consumptive uses e.g., hiking, camping, bird-watching, enhanced watershed protection, improved air quality, increased soil retention, “existence values,” and reductions in administrative costs.

Additionally, we are seeking comments on critical habitat designation relative to future HCPs, similar to our request in the coastal California gnatcatcher proposed rule (65 FR 5945). Future conservation planning efforts are possible within the range of the Alameda whipsnake in areas we are proposing as critical habitat. In these areas, we propose to designate critical habitat for areas that we believe are essential to the conservation of the species and need special management or protection. We invite comments on the appropriateness of this approach and other approaches for critical habitat within the boundaries of future approved HCPs upon issuance of section 10(a)(1)(B) permits for the Alameda whipsnake:

(1) Retain critical habitat designation within the HCP boundaries and use the section 7 consultation process on the issuance of the incidental take permit to ensure that any take we authorize will not destroy or adversely modify critical habitat;

(2) Revise the critical habitat designation upon approval of the HCP and issuance of the section 10(a)(1)(B) permit to retain only preserve areas, on the premise that they encompass areas essential for the conservation of the species within the HCP area and require special management and protection in the future. Assuming that we conclude, at the time an HCP is approved and the associated incidental take permit is issued, that the plan protects those areas essential to the conservation of the Alameda whipsnake, we would revise the critical habitat designation to exclude areas outside the reserves, preserves, or other conservation lands established under the plan. Consistent with our listing program priorities, we would publish a proposed rule in the Federal Register to revise the critical habitat boundaries;

(3) As in (2) above, retain only preserve lands within the critical habitat designation, on the premise that they encompass areas essential for conservation of the species within the HCP area and require special management and protection in the future. However, under this approach, the exclusion of areas outside the preserve lands from critical habitat would occur automatically upon issuance of the incidental take permit. The public would be notified and have the opportunity to comment on the boundaries of the preserve lands and the revision of designated critical habitat during the public review and comment process for HCP approval and permitting;

(4) Remove designated critical habitat entirely from within the boundaries of an HCP when the plan is approved (including preserve lands), on the premise that the HCP establishes long-term commitments to conserve the species and no further special management or protection is required. Consistent with our listing program priorities, we would publish a proposed rule in the Federal Register to revise the critical habitat boundaries; or

(5) Remove designated critical habitat entirely from within the boundaries of HCPs when the plans are approved (including preserve lands), on the premise that the HCP establishes long-term commitments to conserve the species and no additional special management or protection is required. This exclusion from critical habitat would occur automatically upon issuance of the incidental take permit. The public would be notified and have the opportunity to comment on the revision of designated critical habitat during the public notification process for HCP approval and permitting.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the rulemaking record, which we will honor to the extent allowable by law. In some circumstances, we would withhold from the rulemaking record a respondent’s identity, as allowable by law. If you wish for us to withhold your name and/or address, you must state this prominently at the beginning of your comment. However, we will not consider anonymous comments. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. All comments, including written and e-mail, must be received in our Sacramento Fish and Wildlife Office by May 8, 2000.

In accordance with our policy published on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of such review is to ensure listing decisions are based on scientifically sound data, assumptions, and analyses. We will send these peer reviewers copies of this proposed rule immediately following publication in the Federal Register. We will invite these peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposed designation of critical habitat.

We will consider all comments and information received during the 60-day comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

Public Hearings

The Act provides for one or more public hearings on this proposal, if requested. Should a public hearing be requested, then we will announce the date, time, and place for the hearing in the Federal Register and local newspapers at least 15 days prior to the hearing.

Clarity of the Rule

Executive Order 12866 requires each agency to write regulations/notice that are easy to understand. We invite your comments on how to make this notice easier to understand including answers to questions such as the following: (1) Are the requirements in the notice clearly stated? (2) Does the notice
contain technical language or jargon that interferes with the clarity? (3) Does the format of the notice (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Is the description of the notice in the “Supplementary Information” section of the preamble helpful in understanding the notice? What else could we do to make the notice easier to understand?

Send a copy of any comments that concern how we could make this notice easier to understand to: Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW, Washington, DC 20240. You may e-mail your comments to this address: Execsec@ios.doi.gov.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, this document is a significant rule and has been reviewed by the Office of Management and Budget (OMB), 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. The Alameda whipsnake was listed as an endangered species in 1997. No formal section 7 consultations with other Federal agencies have been conducted. In addition, no HCPs for areas in which the Alameda whipsnake occurs have been done.

The areas proposed for critical habitat are currently occupied by the Alameda whipsnake. Under the Endangered Species 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 persons 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 currently 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).

(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 Alameda whipsnake 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 because all proposed critical habitat is occupied. Because of the potential for impacts on other Federal agencies, we will continue to review this proposed 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 (from critical habitat designation) will have any incremental effects.

(d) This rule will not raise novel legal or policy issues. The proposed rule follows the requirements for determining critical habitat contained in the Endangered Species Act.

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Table 2.—Impacts of Alameda Whipsnake Listing and Critical Habitat Designation

<table>
<thead>
<tr>
<th>Categories of activities</th>
<th>Activities potentially affected by species listing only ¹</th>
<th>Additional activities potentially affected by critical habitat designation ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Activities Potentially Affected ³</td>
<td>Activities such as removing, thinning, or destroying Alameda whipsnake habitat (as defined in the primary constituent elements discussion), whether by burning or mechanical, chemical, or other means (e.g., fuels management, bulldozing, herbicide application, grazing, etc.); water transfers, diversion, or impoundment, groundwater pumping, irrigation, or other activity that causes barriers or deterrents to dispersal, inundates habitat, or significantly converts habitat (e.g., conversion to urban development, vineyards, landscaping); recreational activities that significantly deter the use of suitable habitat areas by Alameda whipsnakess or alter habitat through associated maintenance activities (e.g., off-road vehicle parks, golf courses, and hiking, mountain biking, and horseback riding trails); sale, exchange, or lease of Federal land that contains suitable habitat that is likely to result in the habitat being destroyed or appreciably degraded; and construction activities that destroy or appreciably degrade suitable habitat (e.g., urban development, building of recreational facilities such as off-road vehicle parks and golf courses, road building, drilling, mining, quarrying and associated reclamation activities) that the Federal Government carries out.</td>
<td>None.</td>
</tr>
</tbody>
</table>
TABLE 2.—IMPACTS OF ALAMEDA WHIPSNAKE LISTING AND CRITICAL HABITAT DESIGNATION—Continued

<table>
<thead>
<tr>
<th>Categories of activities</th>
<th>Activities potentially affected by species listing only 1</th>
<th>Additional activities potentially affected by critical habitat designation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private and other non-Federal Activities Potentially Affected 4</td>
<td>Activities such as removing, thinning, or destroying Alameda whipsnake habitat (as defined in the primary constituent elements discussion), whether by burning or mechanical, chemical, or other means (e.g., fuels management, bulldozing, herbicide application, grazing, etc.); water transfers, diversion, or impoundment, groundwater pumping, irrigation, or other activity that causes barriers or deterrents to dispersal, inundates habitat, or significantly converts habitat (e.g., conversion to urban development, vineyards, landscaping, etc.); recreational activities that significantly deter the use of suitable habitat areas by Alameda whipsnakes or alter habitat through associated maintenance activities (e.g., off-road vehicle parks, golf courses, and hiking, mountain biking, and horseback riding trails); and construction activities that destroy or appreciably degrade suitable habitat (e.g., urban development, building of recreational facilities such as off-road vehicle parks and golf courses, road building, drilling, mining, quarrying and associated reclamation activities) that require a Federal action (permit, authorization, or funding).</td>
<td>None.</td>
</tr>
</tbody>
</table>

1 This column represents the activities potentially affected by listing the Alameda whipsnake as a threatened species (December 5, 1997; 62 FR 64306) under the Endangered Species Act.
2 This column represents the 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 (under section 4 of the Act), we will determine whether designation of critical habitat will have a significant effect on a substantial number of small entities. As discussed under Regulatory Planning and Review above, this rule is not expected to result in any restrictions in addition to those currently in existence. As indicated on Table 1 (see Proposed 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. Sale, exchange, or lease of lands owned by the Bureau of Land Management or the Department of Energy;
2. Regulation of activities affecting waters of the United States by the Army Corps of Engineers under section 404 of the Clean Water Act;
3. Regulation of water flows, water delivery, damming, diversion, and channelization by the Bureau of Reclamation and the Army Corps of Engineers;
4. Regulation of grazing, recreation, or mining by the Bureau of Land Management;
5. Funding and implementation of disaster relief projects by the Federal Emergency Management Agency, including vegetation clearing to reduce the risk of a catastrophic wildfire event;
6. Funding and regulation of new road construction by the Federal Highways Administration;
7. Funding of low-interest loans to facilitate the construction of low-income housing by the Department of Housing and Urban Development;
8. Clearing of vegetation by the Department of Energy;
9. Promulgation of air and water quality standards under the Clean Air Act and the Clean Water Act and the cleanup of toxic waste and superfund sites under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act by the U.S. Environmental Protection Agency; and

Many of these activities sponsored by Federal agencies within the proposed 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.

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 will determine whether designation of critical habitat will 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. As discussed above, we anticipate that the designation of critical habitat will not have any additional effects beyond those resulting from listing the species.

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 of their actions involving Federal funding or authorization must not destroy or adversely modify 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 to result from critical habitat designation.
(b) This rule will not produce a Federal mandate of $100 million or greater in any year, i.e., it is not a
“significant regulatory action” under the Unfunded Mandates Reform Act.

**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 Alameda whipsnake. 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.

**Federalism**

In accordance with Executive Order 13132, the rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, the Service requested information from and coordinated development of this critical habitat proposal with appropriate State resource agencies in California, as well as during the listing process. We will continue to coordinate any future designation of critical habitat for the Alameda whipsnake with the appropriate State agencies. The designation of critical habitat the Alameda whipsnake 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, doing so 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, and plan public meetings on the proposed designation during the comment period. The rule 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 Alameda whipsnake.

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

This rule does not contain any information collection requirements for which Office of Management and Budget approval under the Paperwork Reduction Act is required.

**National Environmental Policy Act**

We have 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 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).

**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 the Department of the Interior’s requirement at 512 DM 2 we understand that recognized Federal Tribes must be related to on a Government-to-Government basis. The 1997 Secretarial Order on Native Americans and the Endangered Species Act clearly states that Tribal lands should not be designated unless absolutely necessary for the conservation of the species. According to the Secretarial Order, “Critical habitat shall not be designated in an area that may impact Tribal trust resources unless it is determined essential to conserve a listed species. In designating critical habitat, the Services shall evaluate and document the extent to which the conservation needs of a listed species can be achieved by limiting the designation to other lands.” The proposed designation of critical habitat for the Alameda whipsnake does not contain any Tribal lands or lands that we have identified as impacting Tribal trust resources.

**References Cited**

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

**Authors**

The primary authors of this notice are Jason Davis and Heather Bell, Sacramento Fish and Wildlife Office (see ADDRESSES section).

**List of Subjects in 50 CFR Part 17**

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

**Proposed Regulation Promulgation**

For the reasons given in the preamble, we propose to amend 50 CFR part 17 as set forth below:

**PART 17—[AMENDED]**

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


2. In 17.11(h) revise the entry for “Whipsnake, Alameda” under “REPTILES” to read as follows:

   § 17.11 Endangered and threatened wildlife.
   * * * * *
   Whipsnake, Alameda (=striped racer). Masticophis lateralis euryxanthus. U.S.A. (CA) .......... Entire ................. T 628 17.95(c) NA
3. Amend 17.95(c) by adding critical habitat for the Alameda whipsnake (*Masticophis lateralis euryxanthus*) in the same alphabetical order as this species occurs in 17.11(h).

§ 17.95 Critical habitat—fish and wildlife.

(c) Reptiles.

ALAMEDA WHIPSNAKE (*Masticophis lateralis euryxanthus*)

1. Critical habitat units are depicted for Alameda, Contra Costa, San Joaquin and Santa Clara Counties, California, on the maps below.

2. Within these areas, the primary constituent elements are those habitat components that are essential for the primary biological needs of foraging, sheltering, breeding, maturation, and dispersal. The primary constituent elements are found, or could develop, in areas that support or have the potential to support scrub communities including mixed chaparral, chamise-redshank chaparral, and coastal scrub; and annual grassland and various oak woodlands that lie adjacent to scrub habitats. In addition, the primary constituent elements for the Alameda whipsnake may be found in grasslands and various oak woodlands that are linked to scrub habitats by substantial rock outcrops or riparian corridors. Other habitat features that provide a source of cover for the whipsnake during dispersal or lie in reasonable proximity to scrub habitats and contain habitat features (*e.g.*, rock outcrops) that support adequate prey populations may also contain primary constituent elements for the Alameda whipsnake.

BILLING CODE 4310–55–U
Map Unit 1: Alameda and Contra Costa counties, California. From 1992 Orthophoto quads, Mount Diablo Base Meridian, California: T.2 N., R.4 W., S\(^{\frac{1}{2}}\)
Map Unit 2: Alameda and Contra Costa Counties, California. From 1992 Orthophoto quads, Mount Diablo Base Meridian, California: T. 1 N., R. 3 W.
SE\(\frac{1}{4}\) sec. 35, S\(\frac{1}{2}\) NW\(\frac{1}{4}\) sec. 36; T. 1 N., R. 2 W., SW\(\frac{1}{4}\) sec. 31, S\(\frac{1}{2}\) sec. 33, SW\(\frac{1}{4}\) sec. 34; T. 1 S., R. 3 W., sec. 1, E\(\frac{1}{2}\) sec. 2, NE\(\frac{1}{4}\) sec. 12, SW\(\frac{1}{2}\) sec. 13, S\(\frac{1}{2}\) sec. 14, S\(\frac{1}{2}\) sec. 15, secs. 22–27, SE\(\frac{1}{4}\) sec. 28, NE\(\frac{1}{4}\) sec. 34, N\(\frac{1}{2}\) SE\(\frac{1}{4}\) sec. 35, sec. 36; T. 1 S., R. 2 W., S\(\frac{1}{2}\) sec. 2, secs. 3–6, N\(\frac{1}{2}\) SE\(\frac{1}{4}\) sec. 7, secs. 8–11, SW\(\frac{1}{4}\) sec. 12, S\(\frac{1}{2}\) NW sec. 13, secs. 14–17, SE\(\frac{1}{4}\) sec. 18, S\(\frac{1}{2}\) NE\(\frac{1}{4}\) sec. 19, secs. 20–36; T.1 S., R. 1 W., SW\(\frac{1}{4}\) sec. 19, SW\(\frac{1}{4}\) sec. 29, S\(\frac{1}{2}\) NW\(\frac{1}{4}\) sec. 30, secs. 31–32; T. 2 S., R. 3 W., N\(\frac{1}{2}\) SE\(\frac{1}{4}\) sec. 1, NE\(\frac{1}{4}\) sec. 12, S\(\frac{1}{2}\) sec. 13, N\(\frac{1}{2}\) sec. 24; T. 2 S., R. 2 W., secs. 1–18, E\(\frac{1}{2}\) sec. 19, secs. 20–30, N\(\frac{1}{2}\) SE \(\frac{1}{4}\) sec. 31, sec. 32, N\(\frac{1}{2}\) sec. 33, N\(\frac{1}{2}\) sec. 34, N\(\frac{1}{2}\) SW\(\frac{1}{4}\) sec. 35, sec. 36; T. 2 S., R. 1 W., NW\(\frac{1}{4}\) sec. 4, secs. 5–6, S\(\frac{1}{2}\) sec. 16, secs. 17–21, S\(\frac{1}{2}\) NW\(\frac{1}{4}\) sec. 22, W\(\frac{1}{2}\) sec. 26, secs. 27–34, W\(\frac{1}{2}\) sec. 35; T. 3 S., R. 1 W., NW\(\frac{1}{4}\) sec. 2, secs. 3–4, N\(\frac{1}{2}\) SE\(\frac{1}{4}\) sec. 5, N\(\frac{1}{2}\) sec. 6; T. 3 S., R. 2 W., N\(\frac{1}{2}\) sec. 1.

BILLING CODE 4310–55–U
12, E1/2 sec. 13, SW1/4 sec. 24, sec. 25, NE1/4 sec. 26, secs. 35–36; T. 3 S., R. 1 W., SW1/4 sec. 2, S1/2 sec. 3, S1/2 sec. 4, S1/2 NW1/4 sec. 5, S1/2 NE1/4 sec. 6, secs. 7–11, SW1/4 sec. 12, secs. 13–36; T. 3 S., R. 1 E., W1/2 sec. 19, S1/2 NW1/4 sec. 30, sec. 31, S1/2 sec. 32; T. 4 S., R. 2 W., NE1/4 sec. 1; T. 4 S., R. 1 W., secs. 1–6, NE1/4 sec. 7, secs. 8–12, NE1/4 sec. 14, N1/2 SW1/4 sec. 15, sec. 16, N1/2 SE1/4 sec. 17, NE1/4 sec. 21; T. 4 S., R. 1 E., W1/2 sec. 4, secs. 5–8, W1/2 sec. 9, NW1/4 sec. 16.

BILLING CODE 4310–55–U
Map Unit 4: Alameda and Contra Costa Counties, California. From 1992 Orthophoto quads, Mount Diablo Base Meridian, California: T. 2 N., R. 1 W.,
Map Unit 5: Alameda, Contra Costa, San Joaquin, and Santa Clara Counties, California. From 1992 Orthophoto quads, Mount Diablo Base Meridian,
California: T.3 N., R.1 E., SE¼ sec. 21, S½ sec. 22, S½ NW¼ sec. 23, SW¼ sec. 24, S½ NW¼ sec. 25, secs. 26–27, E½ sec. 28, SE¼ sec. 29, NE¼ sec. 32, secs. 33–36; T.3 S., R. 2 E., SW¼ sec. 19, SE¼ sec. 21, S½ NE¼ sec. 22, S½ NW¼ sec. 23, SE¼ sec. 24, secs. 25–36; T.3 S., R.3 E., S½ sec. 24, secs. 25–26, S½ NE¼ sec. 27, S½ NW¼ sec. 28, S½ NE¼ sec. 29, S½ NW¼ sec. 30, secs. 31–36; T.3 S., R.4 E., S½ sec. 19, S½ sec. 20, S½ sec. 21, SW¼ sec. 27, secs. 28–33, S½ NW¼ sec. 34; T.4 S., R.1 W., E½ sec. 25, E¼ sec. 36; T.4 S., R.1 E., secs. 1–4, E¼ sec. 9, secs. 10–15, E¼ sec. 16, SE¼ sec. 19, S½ sec. 20, S½ NE¼ sec. 21, secs. 22–36; T.4 S., R.2 E., secs. 1–36; T.4 S., R.3 E., secs. 1–36; T.4 S., R.4 E., W½ sec. 2, secs. 3–10, W½ sec. 11, W¼ sec. 11, W½ sec. 14, secs. 15–22, W½ sec. 23, W½ sec. 26, secs. 27–34, W½ sec. 35; T.5 S., R.1 E., secs. 1–29, N½ SE¼ sec. 30, N½ sec. 33, N½ SE¼ sec. 34, secs. 35–36; T.5 S., R.2 E., secs. 1–35, N½ SW¼ sec. 36; T.5 S., R.3 E., secs. 1–24, N½ sec. 26, N½ SW¼ sec. 27, secs. 28–30, N½ sec. 31, N½ sec. 32; T.5 S., R.4 E., W½ sec. 2, secs. 3–9, N½ SW¼ sec. 10, N½ SW¼ sec. 16, secs. 17–18, N½ sec. 19; T.6 S., R.1 E., sec. 1, N½ sec. 2; T.6 S., R.2 E., N½ sec. 3, N½ sec. 4, N½ sec. 5, N½ sec. 6.
Map Unit 6: Contra Costa County, California. From 1992 Orthophoto quads, Mount Diablo Base Meridian, California: T.1 N., R.4 W., SE¼ sec. 36;
T.1 N., R.3 W., SW¼ sec. 31, S½ sec. 33; T.1 S., R.4 W., S½ NE ¼ sec. 1, NE¼ sec. 12; T.1 S., R.3 W., W½ sec. 3, secs. 4–6, N½ SE¼ sec. 7, secs. 8–10, secs. 14–15, N½ SE¼ sec. 16, N½ sec. 17, NE¼ sec. 18.

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Map Unit 7: Alameda County, California. From 1992 Orthophoto quads, Mount Diablo Base Meridian, California: T.4 S., R.1 W., SE¼ sec. 10.
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service

50 CFR Part 17
RIN 1018–AF97

Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the San Diego Fairy Shrimp

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose designation of critical habitat for the San Diego fairy shrimp (Branchinecta sandiegensis), pursuant to the Endangered Species Act of 1973, as amended (Act). We propose designation of critical habitat within an approximately 14,771-hectare (36,501-acre) area for the San Diego fairy shrimp in San Diego and Orange Counties. Critical habitat identifies specific areas that are essential to the conservation of a listed species, and may require special management considerations or protection. The primary 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.

If this proposed rule is made final, section 7 of the Act would prohibit destruction or adverse modification of critical habitat by any activity funded, authorized, or carried out by any Federal agency. Section 4 of the Act requires us to consider economic and other impacts of specifying any particular area as critical habitat. We solicit data and comments from the public on all aspects of this proposal, including data on the economic and other impacts of the designation. We may revise this proposal to incorporate or address new information received during the comment period.

DATES: We will accept comments from all interested parties until May 8, 2000.

Public hearing requests must be received by April 24, 2000.

ADDRESSES: If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods.

1. You may submit written comments by mail to: Field Supervisor, Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California 92008.

2. You may hand-deliver written comments to our Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California.

3. You may send comments by electronic mail (e-mail) to fw1sdfs@fws.gov. Please submit comments in ASCII file format and avoid the use of special characters and encryption. Please include “Attn: [RIN number]” and your name and return address in your e-mail message. If you do not receive a confirmation from the system that we have received your e-mail message, contact us directly by calling our Carlsbad Fish and Wildlife Office at phone number 760/431–9440.

Comments and materials received, as well as supporting documentation used in the preparation of this proposed rule, will be available for public inspection, by appointment, during normal business hours at the Carlsbad Fish and Wildlife Office.

FOR FURTHER INFORMATION CONTACT: 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 sandiegensis) 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 southern 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) (Simovich and Fugate 1992; Hathaway and Simovich 1996). Water chemistry is also an important factor in determining fairy shrimp distribution (Belk 1977; Branchiopod Research Group 1996; Gonzales et al. 1996), hence, no individuals have been found in riverine or marine waters. All known localities are below 701 meters (2,300 feet) and are within 64 kilometers (km) (40 miles (mi)) of the Pacific Ocean.

San Diego fairy shrimp is one of the six groups of fairy shrimp known as branchinectids that occur in southern California (Simovich and Fugate 1992). The other species of Branchinecta in southern California are the non-listed Lindahl’s fairy shrimp (B. lindahlii) and the federally threatened vernal pool fairy shrimp (B. lynchii). 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, and by the presence of paired dorsolateral (located on the sides, toward the back) spines on five of the abdominal segments (Fugate 1993).

Maturing females 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 inches (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 clamping 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). Nearly all species of fairy shrimp feed on algae, bacteria, protozoa, rotifers, and bits of organic matter (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 to 2 weeks depending on water temperature (Hathaway and Simovich 1996; Simovich and Hathaway 1997). The 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 females die and sink. The “resting” or “summer” eggs are capable of withstanding temperature extremes and drying. When the pools refill in the same or subsequent rainy seasons, some but not...