

Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* is required. An information collection related to the rule pertaining to permits for endangered and threatened species has OMB approval and is assigned clearance number 1018-0094. This rule does not alter that information collection requirement. For additional information concerning permits and associated requirements for threatened species, see 50 CFR 17.32.

References

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

Author: The primary authors of this final rule are Fred M. Roberts, Jr. and Gary D. Wallace, Ph.D. (see ADDRESSES section; telephone 760/431-9440).

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—[AMENDED]

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

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

2. Section 17.12(h) is amended by adding the following, in alphabetical order under FLOWERING PLANTS, to the List of Endangered and Threatened Plants, to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *
(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS:							
* <i>Acanthomintha ilicifolia</i>	* San Diego thornmint.	* U.S.A. (CA) Mexico.	* Lamiaceae	* T	* 649	* NA	* NA
* <i>Dudleya stolonifera</i>	* Laguna Beach liveforever.	* U.S.A. (CA)	* Crassulaceae	* T	* 649	* NA	* NA
* <i>Hemizonia conjugens</i>	* Otay tarplant	* U.S.A. (CA) Mexico.	* Asteraceae	* T	* 649	* NA	* NA
* <i>Monardella linoides</i> ssp. <i>viminea</i>	* Willowy monardella	* U.S.A. (CA) Mexico.	* Lamiaceae	* E	* 649	* NA	* NA
*	*	*	*	*	*	*	*

Dated: September 29, 1998.
Jamie Rappaport Clark,
Director, Fish and Wildlife Service.
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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AD60

Endangered and Threatened Wildlife and Plants; Endangered or Threatened Status for Three Plants from the Chaparral and Scrub of Southwestern California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines endangered status pursuant to the Endangered Species Act of 1973, as

amended (Act), for two plants, *Berberis nevini* (Nevin's barberry) and *Fremontodendron mexicanum* (Mexican flannelbush) and threatened status for one plant, *Ceanothus ophiochilus* (Vail Lake ceanothus) throughout their respective historic ranges in southwestern California and northwestern Estado de Baja California, Mexico. These species are associated with scrub and chaparral plant communities and are, in some cases, endemic to specific types of clay soils.

These species are threatened by one or more of the following factors: destruction, degradation and fragmentation of habitat by urbanization; encroachment by exotic plant species, disruption of normal fire cycles; off-highway vehicle (OHV) use, hybridization, and the inadequacy of existing regulatory mechanisms. This rule implements the Federal protection and recovery provisions afforded by the Act for these species. These plant species were proposed for listing on October 2, 1995 (60 FR 51433). Another species proposed as threatened on that

date, *Nolina interrata* (Dehesa beargrass), is withdrawn in this same **Federal Register** part, to be published on the same day as this final rule.

DATES: Effective November 12, 1998.

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

FOR FURTHER INFORMATION CONTACT: Loren Hays, Chief Branch of Listing and Recovery or Dr. Gary D. Wallace, Botanist at the above address (telephone 760/431-9440; facsimile 760/431-9624).

SUPPLEMENTARY INFORMATION:

Background

Berberis nevini (Nevin's barberry) and *Ceanothus ophiochilus* (Vail Lake ceanothus) occur in restricted, localized populations in the interior foothills of Los Angeles, Riverside and San Bernardino Counties in California; *Fremontodendron mexicanum* occurs in

restricted and localized populations from the interior foothills of San Diego County and northwestern Baja California, Mexico. *Berberis nevinii* is found in chaparral and alluvial scrub associated with rocky slopes and sediments and sandy washes (Boyd 1987, Mistretta 1989a). *Ceanothus ophiophilus* is found in chamise chaparral, often in association with specific soil types. *Fremontodendron mexicanum* is known from closed-cone coniferous forest dominated by *Cupressus forbesii* (Tecate cypress) and chaparral.

Chaparral habitats of the interior foothill region of southern California are dense shrub associations of moderate height dominated by *Adenostoma fasciculatum* (chamise), *Ceanothus* sp. (California lilac), *Rhamnus ilicifolia* (red berry), *Arctostaphylos* sp. (manzanita), *Quercus berberidifolia* (California scrub oak), *Rhus ovata* (sugar bush), *Malosma laurina* (laurel sumac), *Heteromeles arbutifolia* (toyon), *Eriogonum fasciculatum* (California buckwheat), and *Salvia mellifera* (black sage) (Holland 1986). Chaparral plant communities are adapted to nutrient poor soils, cool wet winters, and hot dry summers.

Most chaparral species are adapted to periodic wildfire. In some species, only the seeds survive fires and these may require fire to germinate (Keeley 1991). Other species persist by resprouting from the burned stumps of the plants. A too frequent occurrence of fires can burn young or resprouting shrubs before they become reproductively mature, thus depleting or exhausting the seed bank (Zedler *et al.* 1983). Sustained fire prevention can result in senescent (extreme aging) plant communities that may not survive the eventual and unpredictable fires to reproduce vegetatively (Boyd 1991). Within these senescent chaparral communities, high fuel loads of plant material build up in the absence of fire, which often results in unnaturally hot fires that may kill plants and destroy the seed banks of some species. However, these species may repopulate historically occupied areas if a natural fire regime is restored.

Chaparral occurs on many different soil types, but *Ceanothus ophiophilus*, and often, *Fremontodendron mexicanum* typically occur in clay soils derived from gabbro (mineral) or metavolcanic bedrock (Boyd 1991, Oberbauer 1991, California Natural Diversity Data Base (CNDDDB) 1997). Clay soils have unique physical and chemical properties that contribute to the disproportionately large number of rare plants found on this substrate, as compared to other soil types. For that

reason, clay soils are an important component of floristic plant diversity in the region. The Vail Lake area of Riverside County has a large complex of unique habitats on clay soils formed from gabbro bedrock. Such habitats support many sensitive or endangered plant and animal species, including *C. ophiophilus* and *Berberis nevinii* (Metropolitan Water District (MWD) 1991).

Alluvial scrub, found in certain floodplain systems in southern California, comprises an open vegetation community of drought-deciduous and evergreen shrubs (Smith 1980, Hanes *et al.* 1989). Alluvial scrub is characterized by porous, infertile soils subject to periodic intense flooding and erosion associated with the outwash environment (Hanes *et al.* 1988). This vegetation type includes life-forms of desert and coastal affinities such as *Rhamnus crocea* (California redberry), *Lepidospartum squamatum* (scalebroom), *Cercocarpus betuloides* (mountain mahogany), *Eriogonum fasciculatum* (California buckwheat), and occasionally *Juniperus californica* (California juniper) (Hanes *et al.* 1988). Urbanization and industrial development are eliminating this plant community (Smith 1980).

Population centers for *Berberis nevinii* and *Ceanothus ophiophilus* are located near Vail Lake in southwestern Riverside County. One of the two largest known populations of *B. nevinii* occurs in this area adjacent to the type locality of *C. ophiophilus* (Boyd 1987, CNDDDB 1997). The other large population of *B. nevinii* is in San Francisquito Canyon on the Angeles National Forest in Los Angeles County (Boyd *et al.* 1989). The majority of *B. nevinii* plants found outside the Vail Lake and Angeles National Forest sites occur as isolated populations in San Bernardino and Los Angeles Counties. Small populations of *C. ophiophilus* occur just south of Vail Lake in the Agua Tibia Wilderness of the Cleveland National Forest. *Fremontodendron mexicanum* is found only in southern San Diego County, California, and northwestern Estado de Baja California, Mexico.

Discussion of the Three Plant Species

Ceanothus ophiophilus (Vail Lake ceanothus), a member of the buckthorn family (Rhamnaceae), was described by Steve Boyd, Timothy Ross, and Laurel Arnseth based on a collection made by the authors in March 1989 west of Vail Lake in Riverside County, California (Boyd *et al.* 1991). This classification of the species is accepted in the most recent taxonomic treatment of the genus (Schmidt 1993).

Ceanothus ophiophilus is a rounded, divaricately branched (widely forked) shrub, 1.2–1.5 meters (m) (4–5 feet (ft)) tall. The leaves are opposite, thick, 3–7 m (0.1–0.3 inch (in)) long and less than 2.5 mm (0.1 in) wide. The stipules are corky. The fruits are 3–3.5 millimeters (mm) (0.1 inch (in)) in diameter, and usually hornless. *Ceanothus ophiophilus* lacks a burl and recovers after fire by means of seed germination. *Ceanothus ophiophilus* is differentiated from other species of *Ceanothus* in the area by its opposite, narrow leaves, pale green color below, blue flowers, and hornless fruits. This species grossly resembles *Adenostoma fasciculatum* (chamise), the codominant shrub in its habitat. *Ceanothus ophiophilus* flowers from mid-February to March and the seed capsules mature from about May to mid-June (Boyd *et al.* 1991, Schmidt 1993).

Ceanothus ophiophilus is restricted to dry habitats on ridgetops and north to northeast facing slopes in chamise chaparral. It occurs on shallow soils formed from ultra-basic parent materials or deeply weathered gabbro, both of which are phosphorus deficient (Boyd *et al.* 1991). Nutrient poor soils may be critical for the species to maintain reproductive isolation (Boyd *et al.* 1991). *Ceanothus ophiophilus* appears to hybridize with the locally common *C. crassifolius* in places where the two species occur together.

Ceanothus ophiophilus is found at three sites in southwestern Riverside County. These populations are scattered along borders of creeks and dry canyons, sometimes on gabbro soils (Shaffer 1993). One population of 3,000–5,000 plants occupies about 8 hectares (ha) (20 acres (ac)) within a 16 ha (40 ac) area of seemingly suitable habitat (Boyd 1991) on privately owned land at Vail Lake. There are some hybrid individuals in this population (Boyd *et al.* 1991). The remaining two populations exist on land managed by the Forest Service, where over 4,000 plants exist in a 12 ha (30 ac) area of the Agua Tibia Wilderness Area. The two populations in the Agua Tibia Wilderness occupy about 50 percent of the known occupied habitat of the species and contain a significant number of individuals, and the Vail Lake population includes the other 50 percent of the known occupied habitat and plants. Both Agua Tibia populations appear to contain hybrid plants. A portion of one of these populations consists of plants that are too young to determine the degree of hybridization taking place (Shaffer 1993; Steve Boyd, Rancho Santa Ana Botanical Garden, pers. comm. 1995).

Although all three populations contain some individuals that evidently are not pure *Ceanothus ophiochilus*, the Service continues to recognize their importance to the long-term survival of the species. Hybridization is a natural phenomenon common among the species of *Ceanothus* (Schmidt 1993). Conservation of the hybrid plants will be addressed in the recovery plan for *C. ophiochilus*.

Berberis nevinii (Nevin's barberry), a member of the barberry family (Berberidaceae), was described by Asa Gray (1895) based on a collection made by Joseph Nevin in 1892 on the east side of the San Fernando Valley near Los Angeles. *Berberis nevinii* has been treated as *Mahonia nevinii* (Fedde 1901) and *Odostemon nevinii* (Abrams 1910). Recent authorities follow Gray's treatment (Munz 1974, Williams 1993).

Berberis nevinii is a rhizomatous evergreen shrub 1–4 m (3–12 ft) tall. The pinnately compound leaves (featherlike arrangement of the leaflets) are gray-green with serrate, spine-tipped margins. The flowers, clustered in loose racemes, have six yellow petals arranged in two series. The berries are juicy, yellowish to red, 6–8 mm (less than 0.3 in) long with brownish seeds. This species flowers from March through April. *Berberis nevinii* is distinguished from other members of the genus by its nearly flat, narrow, serrate, pinnately veined leaves, few flowered racemes, and reddish fruits (Williams 1993).

Berberis nevinii is found in two habitat types: gravelly wash margins in alluvial scrub (Niehaus 1977, Boyd 1987), and on coarse soils in chaparral (Boyd 1987). This species typically is found between 300 and 650 m (900 and 2,000 ft) in elevation.

Historically, the range of this species probably consisted of fewer than 30 scattered occurrences. At least seven populations have been extirpated, probably due to factors associated with urbanization (California Department of Fish and Game (CDFG) 1991). The species' native range currently extends from the foothills of the San Gabriel Mountains of Los Angeles County to near the foothills of the Peninsular Ranges of southwestern Riverside County. The total number of individuals is reportedly fewer than 1,000 (Boyd 1987), but may be fewer than 500 (CNDDDB 1997, MWD 1991). The largest remaining cluster of native populations, which collectively contain about 200 individuals, occurs in Riverside County in the Vail Lake/Oak Mountain area. Most of these populations are on private lands in the Vail Lake region, although a few individuals occur on Bureau of

Land Management (BLM) lands north of Vail Lake and in the Cleveland National Forest southeast of Vail Lake (Boyd *et al.* 1989). In Los Angeles County, another population of 130–250 individuals occurs on an alluvial terrace and on steep slopes in San Francisquito Canyon, Angeles National Forest (Boyd *et al.* 1989, CNDDDB 1997). Another site was recently discovered on the Angeles National Forest (Gary Wallace, U.S. Fish and Wildlife Service, pers. obs. 1998). Two other native populations are small, with fewer than 10 individuals, and occur on private lands (Boyd 1987, CNDDDB 1997).

The range of *Berberis nevinii* has been extensively surveyed, and additional populations are not likely to occur in the Vail Lake area (Boyd *et al.* 1989). Searches for *B. nevinii*, based on Boyd's (1987) habitat parameters, revealed no additional plants on the San Bernardino National Forest (Mistretta 1989b; Melody Lardner, Botanist, San Bernardino National Forest, *in litt.* 1993).

Fremontodendron mexicanum, a member of the cacao family (Sterculiaceae), was first described by Anstruther Davidson (1917) based on a collection sent to him by Kate Sessions. Macbride (1918) applied the name *Fremontia mexicana* to the species. Harvey (1943) followed this nomenclature in his revision of the genus. The taxon was reduced to a variety of *Fremontia californica* by Jepson (1925) and to a subspecies of *Fremontodendron californicum* by Murray (1982); however, Munz (1974), Kelman (1991), and Whetstone and Atkinson (1993) have all recognized Davidson's combination. The genus name *Fremontia* was not conserved because *Fremontodendron* has priority.

Fremontodendron mexicanum is a small tree or shrub 1.5–6 m (5–19 ft) tall with evergreen, palmately (leaflets radiating from one point) lobed leaves 25–50 mm (1–2 in) wide. The flowers are up to about 69 mm (2.7 in) wide and lack petals. The showy orange to dark yellow sepals are sometimes reddish toward the bases. *Fremontodendron mexicanum* is distinguished from *F. californicum* by its orange sepals with basal pits generally lacking long hairs, and shiny black, glabrous (smooth) seeds that lack caruncles (outgrowths) (Kelman 1991). Native populations of this species occur primarily in closed-cone coniferous forest and southern mixed chaparral, often in association with metavolcanic soils (Oberbauer 1991, Reiser 1996) at elevations between 300 and 1,000 m (900 to 3,000 ft).

Fewer than 10 historical, native locations have been reported for

Fremontodendron mexicanum in the United States. Several of these reports were based on misidentified or cultivated specimens. Apparently at least two historical populations of *F. mexicanum* have been extirpated; these were located at Boundary Monument near the coast and in the Jamul Mountains, both in San Diego County. Reliable distribution records for the species indicate that it is currently only known from Cedar Canyon on Otay Mountain in southern San Diego County and at Arroyo Seco, north of San Quintin, Estado de Baja California, Mexico (Wiggins 1980). This species has not been relocated during surveys of other historical localities (Ogden Environmental and Energy Services, Inc. 1992; Reiser 1996). BLM manages most of the Cedar Canyon population. Other historical sites the Service considers to have potential for currently supporting or reestablishing populations of *F. mexicanum* are divided in ownership between the BLM and private landowners (CNDDDB 1997).

The total number of remaining plants of *Fremontodendron mexicanum* in the United States is estimated to be fewer than 100 individuals (Beauchamp, *in litt.* 1993, CNDDDB 1997). Two additional native historical populations are reported from Mexico; however, one population has not been observed recently, and the other, Arroyo Seco, may have been extirpated by a substantial flood (Reiser 1996). Reports of this species in Monterey and Kern Counties (Kelman 1991) are based on single specimens lacking conclusive characters.

A reported occurrence for Los Angeles County (Kelman 1991) was likely based on a garden escapee and has not been relocated. Similarly, reports of this species in Orange and southwestern Imperial Counties (Whetstone and Atkinson 1993; Shevock, pers. comm. 1997) are based on specimens from plants of probable cultivated origin, or are unverified. Several other recent occurrences have been reported in San Diego County and in Los Angeles County, California; however, these occurrences likely represent planted individuals readily available in the nursery trade, or misidentifications (Reiser 1996, CNDDDB 1997). However, even if one or more of these populations prove to be native *F. mexicanum*, because the flora of California is fairly well-known, this species would be a rare element at these sites and would not likely represent a substantial population.

Previous Federal Action

Federal government action on the three plant species contained in this rule began as a result of section 12 of the Act, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct in the United States. This report, designated as House Document No. 94-51, and presented to Congress on January 9, 1975, recommended *Berberis nevinii* and *Fremontodendron mexicanum* for endangered status. The Service published a notice in the **Federal Register** on July 1, 1975 (40 FR 27823) of its acceptance of the report as a petition within the context of section 4(c)(2) of the Act (now section 4(b)(3)(A)), and of the Service's intention to review the status of the plant species named in it, including *B. nevinii* and *F. mexicanum*. On June 16, 1976, the Service published a proposal in the **Federal Register** (41 FR 24523) to list approximately 1,700 vascular plant species as endangered species pursuant to section 4 of the Act. *Berberis nevinii* and *F. mexicanum* were included in the June 16, 1976 **Federal Register** notice.

General comments received in relation to the 1976 proposal were summarized in an April 26, 1978, **Federal Register** notice (43 FR 17909). Although the 1978 amendments to the Act required that all proposals over 2 years old be withdrawn, a 1-year grace period was given to those proposals already more than 2 years old. On December 10, 1979, **Federal Register** (44 FR 70796), the Service published a notice of withdrawal for the portion of the June 16, 1976 proposal that had not been made final, along with four other proposals that had expired. The Service published an updated notice of review of plants in the **Federal Register** on December 15, 1980 (45 FR 82479). This notice included *B. nevinii* and *F. mexicanum* as category 1 candidate species. Category 1 candidates were those species for which the Service had sufficient information on biological vulnerability and threats to support listing proposals, but the preparation of a proposal was precluded by higher priority species.

Section 4(b)(3)(B) of the Act, as amended in 1982, requires the Secretary to make findings on pending petitions within 12 months of their receipt. Section 2(b)(1) of the Act, as amended in 1982 further required that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This was the case for *Berberis nevinii* and *Fremontodendron mexicanum*, the 1975

Smithsonian report having received the status of a petition. On October 13, 1983, the Service found that the petitioned listing of these species was warranted, but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii), of the Act. Notification of this finding was published in the **Federal Register** on January 20, 1984 (49 FR 2485). Such a finding requires the petition to be recycled annually, pursuant to section 4(b)(3)(C)(i) of the Act. The finding was reviewed each October, annually and the status of these two species was retained in the September 27, 1985 (50 FR 39526), the February 21, 1990, (55 FR 6184), the September 30, 1993 (58 FR 51143) and the February 28, 1996, (61 FR 7596) review of plant taxa.

On September 16, 1991, the Service received a petition dated September 13, 1991, from Mr. Steve Boyd of Rancho Santa Ana Botanic Garden, to list *Ceanothus ophiocbilus* as an endangered species (Boyd 1991). The Service evaluated the petition and published a 90-day finding in the **Federal Register** on August 10, 1992 (57 FR 37513), that substantial information was presented and that the requested action may be warranted. The species was included as a category 2 candidate species in the September 30, 1993, notice of review (50 FR 51144). Category 2 candidate species were those species for which information in the possession of the Service indicated that a proposal to list the species as endangered or threatened was possibly appropriate, but sufficient data on biological vulnerability and threats were not currently available to support proposed rules.

On October 2, 1995, the Service published in the **Federal Register** (60 FR 51443) a proposal to list *Berberis nevinii* and *Fremontodendron mexicanum* as endangered and *Ceanothus ophiocbilus* and *Nolina interrata* (Dehesa beargrass) as threatened. The proposal to list *N. interrata* was withdrawn and is addressed in a document published concurrently in the proposed rule section of this same **Federal Register** part. Publication of the proposed rule to list *B. nevinii*, *C. ophiocbilus*, and *F. mexicanum* constituted the 12-month petition finding for these species.

The processing of this final rule follows the Service's final listing priority guidance for fiscal years 1998 and 1999 published on May 8, 1998, in the **Federal Register** (63 FR 25502). The guidance clarifies the order in which the Service will process rulemakings. The guidance calls for giving highest priority to the handling of emergency actions

(Tier 1) and second highest priority to resolving the listing status of species included in outstanding proposed listing actions (Tier 2). This final rule falls under Tier 2 of the guidance. The three species in this rule face high magnitude threats. This rule has been updated to reflect changes in information concerning distribution, status and threats. However, this additional information was not of a nature that it altered the Service's decision to list the three species.

Summary of Comments and Recommendations

In the October 2, 1995, proposed rule (60 FR 51443) and associated notifications, all interested parties were asked to submit factual reports or information that might contribute to the development of a final rule. Appropriate Federal and State agencies, county and city governments, scientific organizations, and other interested parties were contacted and asked to comment. Individual newspaper notices of the proposed rule were published in the San Diego Union-Tribune and the Riverside Press-Enterprise on October 20, 1995. The 45-day comment period for the proposed rule closed on November 16, 1995. A public hearing was requested during the comment period, but the Service's ability to hold the hearing was precluded by severe funding constraints in effect between November 1995 and April 1996. The party requesting the hearing subsequently submitted written comments to the Service during the comment period. On June 4, 1997, a letter was sent to the party inquiring as to their wishes regarding the previous request for a public hearing. No response was received by the Service.

During the comment period, the Service received four letters concerning the proposed rule, including one from a Federal agency, one from a State agency, and two from individuals or groups. One respondent expressed support for the listing proposal, one opposed it, and two were neutral. Additional information and clarification provided by one commenter have been incorporated into this final rule. Relevant comments have been organized into specific issues. These issues and the Service's response to each are summarized as follows:

Issue 1: One commenter claimed that *Ceanothus ophiocbilus* was a relic (relict) species, formerly more common than at the present time and that the species likely will continue to persist, barring any new threats to its existence.

Service Response: It is not feasible, using current information, to determine

if *Ceanothus ophiochilus* is a relict species (a species from an earlier era that is surviving in a changed environment) or the extent of its prehistoric distribution. The listing status of this species is not based on its evolutionary history, but rather on current and future threats to its continued existence. Major threats to the species are presented by the modification, destruction, degradation, and fragmentation of its habitat due to urbanization and off-road vehicle use.

Issue 2: One commenter suggested that the Service has resisted efforts to provide the protection needed for *Ceanothus ophiochilus* and *Berberis nevinii*, readily available through the creation of a conservation bank at Vail Lake. Another commenter suggested acquiring the portion of the Vail Lake planned community that contains the *Ceanothus ophiochilus* population.

Service Response: The Service actively participated in discussions regarding the creation and implementation of a conservation bank for listed species and sensitive habitats at Vail Lake in 1995. In Spring 1995, the landowner of the Vail Lake Planned Community Area offered the Riverside County Habitat Conservation Agency (RCHCA) an option to acquire about 6,000 acres as part of a conservation bank, and a draft conservation agreement was prepared (Jeff David and Associates 1995). However, the option for this property expired in September of 1995 and all of the parcels have recently been sold (M. Shaughnessy, U.S. Fish and Wildlife Service, pers. comm. 1997). Protection of these two species through land purchases, conservation agreements, and other recovery strategies will be addressed in the recovery plan for these species.

Issue 3: One commenter contended that the threats specified in the proposed rule are unlikely to become real in the area containing the Vail Lake population of *Ceanothus ophiochilus*.

Service Response: The Service has recently received notification of filing for a conditional use permit for the recreational vehicle (RV) park parcel immediately adjacent to the parcel that supports the *Ceanothus ophiochilus* population. The close proximity of human activities increases the likelihood and frequency of accidental fires, the introduction of exotic species, and associated adverse impacts. In addition, as is indicated above, all of the parcels in the Vail Lake planned community supporting *C. ophiochilus* have been sold. Development of the parcels containing *C. ophiochilus*, and the associated habitat disturbances,

remain a threat to the continued existence of the species.

Issue 4: One commenter suggested that additional populations of *Ceanothus ophiochilus* will be discovered.

Service Response: No new populations have been reported since the populations in the Agua Tibia Wilderness were found in 1993. At that time, several additional areas of potential habitat were searched by staff of the Cleveland National Forest without locating additional populations (Kirsten Winter, Botanist, Cleveland National Forest, *in litt.* 1995).

Issue 5: One commenter stated that none of the three species, which are all listed as endangered by the State of California under the California Endangered Species Act (CESA), is currently known to occur on State Park lands. However, if they were found to occupy State Park lands, California Environmental Quality Act (CEQA) would require consideration of impacts from proposed actions.

Service Response: CEQA applies to virtually all projects, whether on State or private lands. Under CEQA, the impacts of projects on listed species must be considered, not only on State Park lands but also on any non-Federal lands.

Issue 6: One commenter, noting that the proposed rule stated that *Berberis nevinii* is available for cultivation in the nursery trade, questioned how a species in cultivation could be endangered.

Service Response: One of the provisions of the Act (section 2(b)) includes providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species." The preservation of a species is ultimately successful through the long-term persistence of natural populations in native habitats. Introductions of cultivated specimens into native habitats may alter natural gene frequencies and thereby affect the survival potential of the species.

Issue 7: One commenter stated that listing *Ceanothus ophiochilus* and *Berberis nevinii* improperly denigrates other methods of conservation, such as the efforts and authority of the California Department of Fish and Game, as well as other State and local laws and practices addressing biological resources, such as CEQA. The commenter also noted the broader scope of the California Endangered Species Act (CESA) as compared to the Federal Act with respect to plants on private property.

Service Response: A detailed discussion regarding these and other programs has been incorporated into the final rule under "Summary of Factors Affecting the Species." Although the Native Plant Protection Act (NPPA) and CESA both prohibit the "take" of State-listed plants (chapter 10 sec. 1908 and chapter 1.5, sec 2080), these statutes do not adequately protect against the taking of such plants by means of habitat modification or land use change by the landowner. After CDFG notifies a landowner that a State-listed plant grows on their property, the CDFG Code requires only that the landowner notify the agency "at least 10 days in advance of changing the land use to allow salvage of such plant" (chapter 10, sec. 1913). The requirement for the issuance of take permits for endangered plants under section 2081 of CESA is currently under review (Ann Malcomb, California Department of Fish and Game, pers. comm. 1998). CEQA guidelines require that once significant effects are identified, the lead agency has the option to either require mitigation for effects through changes in the project or to decide that the "overriding social and economic considerations" will make mitigation infeasible (California Public Resources Code, Guidelines, section 15093). In the latter case, significant environmental damage may result from an approved project, including the destruction of endangered plant species. Protection of listed plant species under CEQA is, therefore, dependent upon the discretion of the lead agency. The Service, therefore, finds the current regulations to be inadequate.

Issue 8: One commenter suggested that because *Fremontodendron mexicanum* was reported from the Descanso District of the Cleveland National Forest, that further surveys are needed to locate the species.

Service Response: Surveys have not located *Fremontodendron mexicanum* on the Cleveland National Forest. All previous reported localities on the Forest were found to support the widespread *Fremontodendron californicum* (Kirsten Winter, U.S. Forest Service, pers. comm. 1997).

Peer Review

In accordance with interagency policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), the Service solicited the expert opinions of three independent specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy, population models, and supportive biological and ecological information for the species under consideration for listing. The purpose of

such review is to ensure listing decisions are based on scientifically sound data, assumptions, and analyses, including input of appropriate experts and specialists. Despite this effort, no responses were received from the specialists solicited by the Service.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Ceanothus ophiochilus* should be classified as a threatened species, and *Berberis nevinii* and *Fremontodendron mexicanum* should be classified as endangered species. Procedures found at section 4 of the Act (16 U.S.C. 1531) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Ceanothus ophiochilus* Boyd, Ross and Arnseth (Vail Lake ceanothus), *Berberis nevinii* Gray (Nevin's barberry), and *Fremontodendron mexicanum* Davidson (Mexican flannelbush) are as follows:

A. The present or threatened destruction, modification, or curtailment of their habitat or range

The Service finds that the three species listed in this rule are imperiled by various activities, including urbanization and off-road vehicle use, that result in habitat modification, destruction, degradation, and fragmentation. The specific soil and/or hydrological requirements of these plant species naturally limit their distribution to clay soils formed from gabbro and alluvial or sedimentary based substrates (sandy washes and terraces) within the chaparral or scrub plant communities. Rey-Vizgirdas (1994) places the loss of alluvial scrub habitats at over 90 percent based on an estimate of presettlement conditions. Most of the alluvial scrub habitat in the San Fernando and San Gabriel valleys has been eliminated by urban development, road widening, flood control measures or habitat degradation from extensive recreational use (CDFG 1991). Urban development and mining have generally impacted these habitat types more directly than other activities within the chaparral community, the terrain being more accessible than the typically rugged, steep, boulder-covered terrain of the surrounding chaparral.

Much of southwestern Riverside County is expected to be converted to urban development within the decade

(Monroe *et al.* 1992, California Department of Finance 1993). The Vail Lake area, where both *Ceanothus ophiochilus* and *Berberis nevinii* occur, is included in a community plan. Development in the area was planned and approved by the County and allows subdivision of parcels into 20 ac (9 ha) lots (Boyd 1991, Shaffer 1993). In 1995, the owner of the property offered the Riverside County Habitat Conservation Agency (RCHCA) an option to acquire a portion of the Vail Lake planned community for a conservation bank. However, the option to purchase the property expired, and the parcels were subsequently sold (M. Shaughnessy, pers. comm. 1997). It is expected that individual landowners are likely to convert the existing habitat to gardens, lawns and pastures. This development will fragment remaining habitat, introduce invasive plants that compete with the species considered in this rule, contribute to combustible fuel loads, and degrade the habitat as a result of conversion to later successional stages of plant communities (Boyd 1991). In addition, fire management strategies for developed areas, including fire suppression measures and brush clearance requirements, alter the natural fire processes to which natural plant communities are adapted and which they require for long-term survival.

Populations of *Berberis nevinii* occurring in alluvial scrub habitats of Los Angeles County have been heavily impacted (CNDDDB 1997). A note on a specimen of *B. nevinii* collected in 1932 stated that there were only about 100 plants known, all east of San Fernando Road, and that their numbers were likely to decrease. Wolf (1940) cites urbanization and brush fires as causes of the hastened rate of extinction of this species in the area near San Fernando (Los Angeles County). Several sites apparently containing *B. nevinii* in this area have been destroyed by the extensive urbanization of the eastern San Fernando Valley. These sites, however, were not included in the CNDDDB because of inadequate data. Only two of the seven native occurrences of *B. nevinii* in Los Angeles County noted by CNDDDB (1997) are extant. A new occurrence of a single plant was recently found in a canyon on the south slope of the San Gabriel Mountains (G. Wallace, pers. comm. 1998). The occurrence, of questionable origin because it was near an old nursery, consisted of a single plant on a parcel with an approved tentative tract map; this site was recently cleared.

The majority of the 16 native occurrences for *Berberis nevinii*, which are all located in the vicinity of Vail

Lake in western Riverside County (CNDDDB 1997), consist of five or fewer plants. Urban development in the Vail Lake area threatens the largest group of occurrences of *B. nevinii*, and most of these occurrences at Vail Lake would likely be eliminated by development (Jeff David and Associates 1995). Parcels recently sold at Vail Lake contain about 15 of the 16 occurrences (CNDDDB 1997) and apparently contain more than 150 of the approximately 200 plants of *B. nevinii* in western Riverside County. An application for a conditional-use permit has been filed for one of the parcels that has both *B. nevinii* and another federally listed plant species, *Dodecahema leptoceras* (slender-horned spineflower). This parcel is also adjacent to a parcel that supports *Ceanothus ophiochilus*.

Highway projects may impact *Berberis nevinii* directly and indirectly. A proposal to widen State Route 79 to four lanes may directly impact some populations of *B. nevinii*, as well as promote development in the area (Monroe *et al.* 1992), leading to additional indirect impacts. Of the two occurrences of *Berberis nevinii* on private land near Redlands, San Bernardino County, one site supporting as many as six plants has been damaged as a result of off-road vehicles and horseback riding (CNDDDB 1997). The other site in this county, supporting a single plant, is threatened by a predominance of annual grasses (CNDDDB 1997).

The Vail Lake planned community is also the site of one of three populations of *Ceanothus ophiochilus*. The grading of fire breaks has reportedly destroyed some of the *C. ophiochilus* population at Vail Lake and a portion of the populations in the Agua Tibia Wilderness on the Cleveland National Forest (Boyd *et al.* 1989; Boyd 1991; Susan Cochrane, CDFG, *in litt.* 1993).

The only confirmed, extant native occurrence for *Fremontodendron mexicanum* in the United States is located in Cedar Canyon on Otay Mountain in southern San Diego County near the Mexican border (CNDDDB 1997). About 50 percent of the habitat occupied or potentially suitable for restoration of *F. mexicanum* populations exists on lands administered by the BLM as an Area of Critical Environmental Concern (ACEC) and a Research Natural Area (RNA). The remaining portion of this habitat is located within the privately owned Otay Ranch, on lands zoned as natural open space (Ogden Environmental and Energy Services, Inc. 1992; Tom Oberbauer, pers. comm. 1998).

The Cedar Canyon ACEC and RNA were designated for the preservation of

Fremontodendron mexicanum by BLM in their 1994 South Coast Resource Management Plan. The ACEC is a right-of-way avoidance area, which is not available for mineral material sales or livestock grazing, and is closed to motorized vehicle use. Natural conditions are maintained in the ACEC/RNA, where possible, by allowing ordinary physical and biological processes to operate without human intervention. Some management activities are authorized to maintain the unique features for which the ACEC/RNA was designated. BLM has not yet completed the proposed acquisition of an additional 280 ac (113 ha) to add to the existing 705 ac of the ACEC and RNA (Bureau of Land Management 1994; Julia Dougan, Area Manager, Bureau of Land Management, pers. comm. 1997).

Although urbanization and associated habitat loss and further habitat fragmentation are no longer significant direct threats to *Fremontodendron mexicanum*, the single known population is vulnerable to a variety of threats. This species is likely susceptible to adverse genetic effects because of the low number of individuals in the population, which is estimated to be below 100 (Barrett & Kohn 1991).

Another primary threat to the Cedar Canyon population, and thereby to the species, is from altered fire regimes as a result of various human-caused fires. *Fremontodendron mexicanum* is associated with closed-cone coniferous forest dominated by *Cupressus forbesii* and with mixed chaparral. Both of these vegetation types are susceptible and adapted to naturally occurring fires. Fires that occur at longer or shorter intervals than the natural cycle or during reproductive seasons may imperil the species.

The BLM has made commitments to protect the population in the Cedar Canyon ACEC, however, the agency does not control a significant portion of the habitat in the lower end of Cedar Canyon and does not control some additional areas to the northeast of the canyon. Despite BLM's efforts it has not been possible to control the human foot-traffic through Cedar Canyon. Human foot traffic presents a significant threat as a source of accidental fires. A single catastrophic fire could potentially eliminate all or most of the *Fremontodendron mexicanum* population. A fire can occur too soon after an earlier fire resulting in the killing of young plants prior to their producing seeds. A fire can also occur at a time when litter and biomass accumulation has reduced or eliminated

seedling establishment and kill all of the mature plants. Either of these types of fire occurrences could drastically reduce or eliminate the seed bank for this species and kill mature plants that might otherwise survive less severe fires. In the extreme circumstance an uncontrolled fire of sufficient intensity could potentially drive the species to extinction.

The establishment of the ACEC and RNA on BLM lands and the implementation of a comprehensive management plan that includes an appropriate fire management plan has the potential to significantly reduce the threats to this species, which are threats generally associated with urbanization, and other direct and indirect causes of habitat destruction and fragmentation on BLM lands. The BLM will consider the use of controlled fire in its management plan for the Cedar Canyon ACEC (Bureau of Land Management 1994; J. Dougan, pers. comm. 1997). An equivalent fire management plan and restoration of a natural fire regime would enhance occupied and potential habitat for *F. mexicanum* habitat on Otay Ranch.

B. Overutilization for commercial, recreational, scientific, or educational purposes

No evidence exists to indicate that overutilization is currently a factor in the decline of the three species listed in this rule, although all three are vulnerable to both collection and vandalism. Simply listing a plant species can precipitate commercial or scientific interest which can threaten the species through unauthorized and uncontrolled collection for both commercial and scientific purposes. The listing of species as endangered or threatened publicizes their rarity and may make the listed species more susceptible to collection by researchers or curiosity seekers (Mariah Steenson pers. comm. 1997, M. Bosch, U.S. Forest Service *in litt.* 1997). Both *Fremontodendron mexicanum* and *Berberis nevinii* exist in the nursery trade. Although seeds and cuttings for nursery stock are occasionally gathered from natural populations (Susan Jett, Nursery Manager, Rancho Santa Ana Botanic Garden, *in litt.* 1997), seed and cuttings for the species in this rule are reportedly usually derived from existing cultivars (variety) (Elena Benge, Tree of Life Nursery, San Juan Capistrano, California, pers. comm. 1995). The Cleveland National Forest has received requests from two botanical gardens for permits to collect *Ceanothus ophiochilus*, although no horticultural collections are permitted (Winter, *in litt.*

1995). Access to most of the remaining occurrences of all three species is limited by private property boundaries and/or inaccessible, rugged terrain.

Vandalism is considered a threat to *Ceanothus ophiochilus* and *Berberis nevinii* because some interests may view the presence of sensitive species as an obstacle to development (Mitchell Beauchamp, Pacific Southwest Biological Services, *in litt.* 1993). This type of threat exists for all occurrences of these plants on privately owned land.

C. Disease or Predation

Disease or predation are not known to be factors affecting the plant species listed in this rule.

D. The Inadequacy of Existing Regulatory Mechanisms

Existing regulatory mechanisms that could provide some protection for these species in the United States include: (1) Federal laws and regulations, including the National Environmental Policy Act (NEPA), the Endangered Species Act, in those cases where these species occur in habitat occupied by other listed species, and section 404 of the Federal Clean Water Act; (2) State laws, including the Native Plant Protection Act (NPPA), the California Endangered Species Act (CESA), the California Environmental Quality Act (CEQA), and section 1603 of the California Fish and Game Code; (3) regional planning efforts pursuant to the California Natural Community Conservation Planning Program (NCCP); (4) land acquisition and management by Federal, State, or local agencies, or by private groups and organizations; and (5) local land use processes and ordinances.

Federal Laws and Regulations

The National Environmental Policy Act (NEPA) (42 U.S.C. 4321 to 4347) requires disclosure of the environmental effects of projects within Federal jurisdiction. NEPA requires that each of the project alternatives recommend ways to "protect, restore and enhance the environment" and "avoid and minimize any possible adverse effects," when implementation poses significant adverse impacts. The NEPA does not, however, require that the lead agency select an alternative with the least significant impact to the environment, nor does it prohibit implementing a proposed action in an environmentally sensitive area (40 CFR 1500 *et seq.*).

The Act may incidentally afford protection to the species under consideration in this rule if these species co-exist with species already listed as threatened or endangered under the Act. The Least Bell's vireo

(*Vireo bellii pusillus*), coastal California gnatcatcher (*Polioptila californica californica*), southwestern willow flycatcher (*Empidonax traillii extimus*), arroyo toad (*Bufo microscaphus californicus*), slender-horned spireflower (*Dodecahema leptoceras*), and Santa Ana River woolly star (*Eriastrum densiflorum* ssp. *sanctorum*) are listed as endangered or threatened under the Act and occur within the same geographical area as the species listed in this rule. These species, however, are not found in the same habitat as the plant species listed in this rule. Though *Berberis nevinii* is known to occur in alluvial fan scrub, which is also known to be occupied by *D. leptoceras*, and *E. densiflorum* ssp. *sanctorum*, these species are not known from any specific site where *B. nevinii* also occurs. A portion of the range of *B. nevinii* overlaps an area of the historical range of the San Bernardino kangaroo rat (*Dipodomys merriami parvus*), a federally listed endangered species. The rediscovery of the San Bernardino kangaroo rat in this portion of its historical range could afford some incidental protection to *B. nevinii* in those areas.

Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers (Corps), may provide for some conservation or protection of *Berberis nevinii* populations along alluvial features. Alluvial scrub habitats, which historically supported *B. nevinii*, have been reduced in extent by over 90 percent due to urban and agricultural development (Rey-Vizgirdas 1994). The impacts to these habitats must be considered under CEQA or NEPA and may be regulated, in part, by the permitting processes of the Corps under section 404 of the Clean Water Act. Under section 404, the Corps regulates the discharge of fill material into waters of the United States, which includes navigable and isolated waters, headwaters, and adjacent wetlands. Section 404 regulations require that applicants obtain an individual permit for projects to place fill material affecting greater than 1.2 ha (3 ac) of waters of the United States. Nationwide Permit 26 (33 CFR part 330, revised on December 20, 1996 (61 FR 65916)) was established by the Department of the Army to facilitate authorization of discharges of fill into isolated waters (including wetlands and vernal pools) that cause the loss of less than 1.2 ha (3 ac) of waters of the United States, and that cause minimal individual and cumulative environmental impacts. Projects that qualify for authorization under Nationwide Permit 26 and that

affect less than 0.1 ha (0.33 ac) of isolated waters, including wetlands, may proceed but the permittee must submit a report to the Corps within 30 days of completion of the work. Evaluation of the impacts of such projects through the section 404 permit process is, therefore, precluded.

Because the majority of the distributions of these species occur in upland (nonwetland) habitat or in isolated and fragmented parcels, it is unlikely that actions affecting the species will require section 404 permits. In addition, emergency flood control measures may circumvent compliance with these statutes. For example, as part of emergency measures, vegetation stripping occurred in Riverside and San Bernardino Counties throughout the potential range of *Berberis nevinii* after flooding subsided in the spring of 1993.

State Laws and Regulation

Although State laws at times may provide a measure of protection to the species, these laws are not adequate to protect the species in all cases. Numerous activities do not fall under the purview of State laws, such as certain Federal projects and projects falling under State statutory exemptions. For example, under CEQA where overriding social and economic considerations can be demonstrated, a project proposal may go forward even where adverse impacts to a species are significant.

Pursuant to the Native Plant Protection Act (NPPA) (chapter 10 section 1900 *et seq.* of the CDFG Code) and the California Endangered Species Act (CESA) (chapter 1.5, sec. 2050 *et seq.* of the CDFG Code), the California Fish and Game Commission listed *Berberis nevinii* and *Ceanothus ophiochilus* as endangered. Although NPPA and CESA prohibit the "take" of State-listed plants (chapter 10 sec. 1908 and chapter 1.5, sec 2080), these statutes inadequately protect against the taking of such plants through habitat modification or land use change by the landowner. Under the NPPA, the California Department of Fish and Game will notify a landowner that a State-listed plant grows on his or her property. Pursuant to the CDFG Code, where the taking is otherwise in compliance with State law, the landowner is only required to notify the agency. This notification is required "at least 10 days in advance of changing the land use to allow salvage of such plant" (chapter 10, sec. 1913). The requirement for the issuance of take permits for endangered plants under section 2081 of CESA is currently under review (A. Malcomb, pers. comm. 1998).

The California Environmental Quality Act (CEQA) (Public Resources Code, section 21000 *et seq.*) pertains to projects on non-Federal lands and requires that a project proponent publicly disclose the potential environmental impacts of proposed projects. The public agency with primary authority or jurisdiction over the project is designated as the lead agency. The lead agency is responsible for conducting a review of the project and consulting with the other agencies concerned with the resources affected by the project. Section 15065 of the CEQA Guidelines requires a finding of significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal" including those that are eligible for listing under NPPA and CESA. Under CEQA, impacts to State-listed plants are considered significant and must be addressed. Once significant effects are identified, the lead agency is faced with two options. These options are to either require mitigation for effects through changes in the project or to decide that the "overriding social and economic considerations" make such mitigation infeasible (Title 14, California Code of Regulations, section 15093). In the cases where overriding social and economic considerations are found, projects may be approved that cause significant environmental damage, such as the destruction of endangered plants. Protection of listed plant species under CEQA is, therefore, to some extent dependent upon the discretion of the lead agency.

Regional Planning Efforts

The Service is working with Riverside and San Bernardino Counties to create multispecies habitat conservation plans under section 10 of the Act that may benefit *Ceanothus ophiochilus* and *Berberis nevinii*. San Bernardino County and Riverside County have signed planning agreements with local, State and Federal agencies including the Service. Although this planning processes is ongoing and the protection to be provided for these species is yet to be established, such multispecies plans can provide significant protection to both species.

In the spring of 1995, as previously noted, the landowner of the Vail Lake Planned Community Area offered the Riverside County Habitat Conservation Agency (RCHCA) an option to acquire about 6,000 ac, including the *C. ophiochilus* population, as part of a conservation bank (Jeff David and Associates 1995). The option expired in September 1995, and all of these remaining parcels were recently sold.

Subsequent to this a conditional use permit was requested for one of the parcels containing *Dodecahema leptoceras*, a federally listed endangered species (M. Shaughnessy, pers. comm. 1997). This parcel contains an RV park and is adjacent to the parcel where the population of *C. ophiochilus* is located. This population comprises about one-half of the known individuals of *C. ophiochilus*.

Fremontodendron mexicanum was addressed under the Multiple Species Conservation Program in southwestern San Diego County, but it was not covered under the take authority due to insufficient distribution data and unknown level of conservation (County of San Diego 1996).

Local Land Use Processes and Ordinances

Land-use planning decisions at the local level are made on the basis of environmental review documents prepared in accordance with CEQA or the National Environmental Policy Act (NEPA), which may not fully consider "foreseeable future" or "cumulative" impacts to nonlisted species and their habitat. As with section 404 permits described above, the Service's comments through the NEPA and CEQA review processes are only advisory.

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

Berberis nevinii, *Ceanothus ophiochilus* and *Fremontodendron mexicanum* are component species of chaparral, or related habitats, that are subject to natural fire regimes. These habitat types show evidence of time-dependent, self-regulating fire cycles under natural conditions (Minnich 1995). Many plant species have evolved survival responses to fire either through stump-sprouting after a fire or by germination of fire resistant seeds (obligate seeders).

Increases in human activity in a fire prone area are generally accompanied by an increased incidence of local accidental fires, but less frequent natural fires. Either of these conditions can be detrimental to the persistence of those species that evolved under natural fire cycle regimes (Zedler *et al.* 1983, Dunn 1987).

Fire management practices, often associated with increased urbanization, may alter fire frequency, fire intensity, season of occurrence, and location of fires. If the altered fire frequency pattern falls outside the range of "normal" natural fire cycles for a species, the species composition within the habitat may be altered, (Minnich *et al.* 1995) or species may be eliminated from the

habitat (Zedler *et al.* 1983, Dunn 1985). Under those circumstances, the plant community will be adversely affected in the long term (Dunn 1987, Minnich *et al.* 1995, Zedler 1995).

During fire events, or as part of a fire protection program associated with nearby urban development, bulldozers may be used to clear fire breaks through vegetation to stop the advance of a fire. Fire breaks may increase erosion on slopes and introduce invasive nonnative species that may slow chaparral recovery. Introduction of nonnative species can also provide rapid buildup of potential fuel load, increasing the chance of a short interval between fires, to the detriment of native species (Zedler 1995).

Frequent fires could eliminate obligate seeding species (species able to survive in one environment) of the Genus *Ceanothus* (Zedler *et al.* 1983, Zedler 1995). *Ceanothus ophiochilus* is an obligate seeder and does not reproduce vegetatively after a fire, although it is dependent on occasional fires for seed germination (Boyd *et al.* 1991). Seedlings of *C. ophiochilus* appearing after the 1989 fire in the Agua Tibia Wilderness illustrated this pattern of post-fire seed germination. That fire apparently fell within the limits of the natural fire regime of this species. Under high frequency fire regimes, older plants are eliminated, while younger plants not having had time to reach reproductive maturity and are unable to set seeds, depleting the existing seed bank. This sequence results in population declines and extirpation (Zedler *et al.* 1983). Increased incidences of fire will probably accompany increased development in the Lake Vail area.

The effects of an altered fire regime on *Berberis nevinii* are not known. *Berberis nevinii* is able to stump sprout; however, vegetative propagation has been unsuccessful in cultivation (Mistretta 1989a). *Berberis nevinii* propagates by seed in nature, but seed production is sporadic and fertility is often low (Boyd 1987). Much of the area south of Vail Lake burned in 1996 (Darin Banks, Rancho Santa Ana Botanic Garden, *in litt.* 1997). The actual effect on *B. nevinii* in the area will not be immediately assessable, but future data collection may provide additional information on the species' fire survival mechanisms.

Because *Fremontodendron mexicanum* is known from one small population in the United States, with perhaps fewer than 100 individuals remaining, it continues to be vulnerable to extinction caused by random events, such as hot, slow-burning fires or fires

that occur too frequently. Although *F. mexicanum* also has evolved in association with natural fire cycles, alteration of fire patterns can significantly affect the viability of this species by destroying plants and the seed bank, thereby reducing the genetic diversity of the species. A single fire event could severely impact the chance for recovery of this species.

The management plan for the Cedar Canyon ACEC will include the use of fire as part of the management strategy (J. Dougan, pers. comm. 1997) and likely will include restrictions on access. A fire management plan reflective of a natural fire regime in the Cedar Canyon ACEC is expected to benefit *F. mexicanum*. This management plan is yet to be completed and thus has not been implemented. Other areas of occupied or potential habitat for reestablishment of *F. mexicanum* are zoned as natural open space and are within the privately owned Otay Ranch. The future management and protection associated with this designation will likely reduce the threats of urbanization and off-road vehicle traffic.

Genetic variability may be reduced in small populations of limited distribution (Barrett and Kohn 1991). A single event or series of events can effectively reduce a species to below recoverable numbers. Proactive recovery efforts to lessen the threat of such random events typically involve the establishment of reserves that permanently protect and manage populations of the species of concern.

Hybrid individuals have been reported in all of the populations of *Ceanothus ophiochilus*. The population at Vail Lake is spatially more isolated from other *Ceanothus* species but reportedly contains some hybrid individuals (Boyd *et al.* 1991). Two populations, located nearby in the Agua Tibia Wilderness Area, reportedly contain more hybrid individuals with closely associated *C. crassifolius*. Various estimates of the percentage of hybrids in the Agua Tibia populations ranging from 1 to 10 percent were reported by Shaffer (1993). One population in the Agua Tibia Wilderness is estimated to contain 50 percent hybrids (Boyd and Banks 1995). The persistence of hybrids may be facilitated by disturbance of natural fire cycles or artificial clearing.

Hybridization and introgression have been documented in other rare plants and may lead to their elimination (Rieseberg 1991, Rhymer and Simberloff 1996, Rieseberg and Swensen 1996). Hybridization can reduce reproductive fitness and adversely affect random genetic drift (Barrett and Kohn 1991).

The degree of introgression among individuals of the various populations of *Ceanothus ophiochilus* has not yet been determined.

Most individuals of *Berberis nevinii* are concentrated in the Vail Lake area of Riverside County (CNDDDB 1997). The species' low reproductive success rate (Mistretta 1989a) and disjunct distribution decrease its ability to recover from random detrimental events. Barrett and Kohn (1991) maintain that characteristics such as low reproductive success may be the result of random genetic drift. This effect is amplified in small isolated populations.

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 issue this final rule. Based on this evaluation, the preferred action is to list *Berberis nevinii*, as endangered. Seventeen of the twenty-one native occurrences recorded by the CNDDDB (1997) are imperiled by urban development, especially in western Riverside County, where parcels in the planned community development containing most of the plants known from the area have recently been sold. Only one significant native occurrence remains in Los Angeles County, and another consists of a single plant. Five other occurrences in Los Angeles County, and several not recorded by CNDDDB (1997), have been extirpated by development or habitat modification such as that for flood control. The largest remaining group of occurrences are found around Vail Lake in southwestern Riverside County. Development of the site would likely remove most of the known specimens. Any specimens not directly destroyed as a result of development would be indirectly affected through increased competition from invasive exotic species and, possibly, from altered fire regimes. Although the specific impacts of an altered fire frequency are not fully understood, it is expected that they would likely be detrimental to this species (Zedler *et al.* 1993).

The Service finds that the preferred action is to list *Fremontodendron mexicanum*, as endangered. The only known, extant occurrence in Cedar Canyon on Otay Mountain is imperiled by altered fire regimes. It is likely that this species will also be indirectly affected by nearby urbanization and increased competition from exotic species. In addition, the specific details regarding the protections and management of the Cedar Canyon ACEC and the natural open space of the portion of Cedar Canyon on Otay Ranch

are not presently known. There is also substantial, uncontrolled foot traffic through the canyon, and a consequential threat of deliberately set fires.

The Service finds that *Ceanothus ophiochilus* is likely to become endangered within the foreseeable future throughout all or a significant portion of its range if identified threats are not reduced or eliminated. Threats to this species include habitat destruction, alteration, fragmentation, and degradation from urban development, as well as alteration of fire regimes; the species is fire-dependent for successful proliferation, and disruption of the natural fire regime can disrupt or eliminate seedling establishment.

Critical Habitat

Critical habitat is defined in section 3 of the Act as the specific areas within the geographical 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 essential to the conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by the 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 methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, and the Service's implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is listed as endangered or threatened. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when: (1) the species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species; and/or (2) such designation of critical habitat would not be beneficial to the species.

Section 7(a)(2) of the Act requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out by such agency, does not jeopardize the continued existence of a federally listed species or does not destroy or adversely modify designated critical habitat. The requirement that Federal agencies refrain from contributing to the destruction or adverse modification of critical habitat in any action authorized,

funded or carried out by such agency (agency action) is in addition to the section 7 prohibition against jeopardizing the continued existence of a listed species; and it is the only mandatory legal consequence of a critical habitat designation. The Service's implementing regulations (50 CFR part 402) define "jeopardize the continuing existence of" and "destruction or adverse modification of" in very similar terms. To jeopardize the continuing existence of a species means to engage in an action "that reasonably would be expected to reduce appreciably the likelihood of both the survival and recovery of a listed species." Destruction or adverse modification of habitat means an "alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." Common to both definitions is an appreciable detrimental effect to both the survival and recovery of a listed species. An action that appreciably diminishes habitat for recovery and survival may also jeopardize the continued existence of the species by reducing reproduction, numbers, or distribution because negative impacts to such habitat may reduce population numbers, decrease reproductive success, or alter species distribution through habitat fragmentation.

For a listed plant species, an analysis to determine jeopardy under section 7(a)(2) must necessarily consider the loss of the species associated with habitat impacts. Such an analysis would closely parallel an analysis of habitat impacts conducted to determine adverse modification of critical habitat. The outcome of such analysis is that any action that is found to result in adverse modification of critical habitat, would almost certainly be found to also jeopardize the continued existence of the species concerned. Habitat degradation and destruction are the primary threats to these species. The listing of these species will ensure that section 7 consultation will occur. During consultation any potential impacts to the species and their habitats for any Federal action that may affect these species will be considered. Federal actions may also affect suitable but unoccupied habitat important to the survival and recovery of the species. In many cases, the listing of a species will ensure that Federal agencies consider the importance of such habitat to the listed species and consult with the Service where such habitat is impacted

and determined to be important to the survival and recovery of the species. This is especially important for plant species where consideration must be given to the seed bank component of the species, particularly for annuals, which are not necessarily visibly present in the habitat throughout the year. Because a significant portion of a plant's vegetative structure may not be in evidence during cursory surveys, a determination of whether a species is actually occupying suitable habitat is only reliable when done during the growing season. Therefore, such areas would need to be adequately addressed in any consultation for these species.

Apart from section 7, the Act does not provide any additional protection to lands designated as critical habitat. Designating critical habitat does not create a management plan for the areas where the listed species occurs, does not establish numerical population goals or prescribe specific management actions (inside or outside of critical habitat), and does not have a direct effect on areas not designated as critical habitat.

Critical habitat designation would provide no benefit to the species addressed in this rule on non-federal lands (i.e., private, state, county, or city lands) beyond that provided by listing. Critical habitat provides protection on non-Federal lands only if there is Federal involvement (a Federal nexus) through authorization or funding of, or participation in, a project or activity on non-Federal lands. In other words, designation of critical habitat on non-Federal lands does not compel or require the private or other non-Federal landowner to undertake active management for the species or to modify any activities in the absence of a Federal nexus. Possible Federal agency involvement or funding that could involve the species addressed in the rule on non-Federal lands include the Corps through section 404 of the Clean Water Act, the Federal Department of Housing and Urban Development, Federal Aviation Administration, the U.S. Immigration and Naturalization Service and the Federal Highway Administration. Where a Federal nexus exists, those actions will be addressed, regardless of whether critical habitat is designated, through the interagency coordination requirements such as the Fish and Wildlife Coordination Act (FWCA) and section 7 of the Act that are already in place. Consequently, in the event these described plant species become listed, any activity with a Federal nexus that may adversely affect these species would prompt the requirement for consultation under

section 7(a)(2) of the Act, regardless of whether critical habitat has been designated.

A designation of critical habitat on private lands may have detrimental effects upon a species. The limited effect of a critical habitat designation on private lands is often misunderstood by private landowners whose property boundaries are included within a general description of critical habitat for a specific species. Landowners may believe that critical habitat designation will be an obstacle to the land's development and thus often mistakenly fear that such designations will become an imposition on the use and enjoyment of their property. In many cases, despite considerable Service outreach efforts to the contrary, the reporting and circulation of inaccurate and misleading anecdotal information within the media has led private landowners to believe that critical habitat designations will prevent them from making private use of their lands. In fact, such designation will affect only those activities requiring a Federal permit or receiving Federal funding.

A designation of critical habitat on private lands may actually encourage habitat destruction by private landowners seeking to avoid endangered species problems. Listed plants have limited protection under the Act, particularly on private lands. Section 9(a)(2) of the Act, implemented by regulations at 50 CFR 17.61 (endangered plants) and 50 CFR 17.71 (threatened plants) only prohibits: (1) Removal and reduction of listed plant species to possession from areas under Federal jurisdiction, or their malicious damage or destruction on areas under Federal jurisdiction; or (2) removal, cutting, digging up, or damaging or destroying any such species in knowing violation of any State law or regulation including state criminal trespass laws. Generally, then, on private lands, collection of, or vandalism to, listed plants must occur in violation of state law to be a violation of section 9. The Service is not aware of any state law in California that generally regulates or prohibits the destruction or removal of federally listed plants on private lands. Thus, private landowners concerned about perceived land management conflicts resulting from a critical habitat designation encompassing their property would likely face no legal consequences were they to remove the listed species or destroy its habitat. An unfortunate example of this occurred recently within the general area where the plants addressed in this rule are found, where persons have intentionally destroyed known federally listed plant

habitat at a work site (T. Thomas, U.S. Fish and Wildlife Service). The designation of critical habitat involves the publication of habitat descriptions and mapped locations of the species in the **Federal Register**. Such publication reasonably increases the likelihood of unwanted notice and potential search and removal activities at specific sites.

The Service acknowledges that in some situations critical habitat designation may provide some limited value to the species by notifying the public about areas important to the species conservation and by calling attention to those areas in special need of protection. However, such limited values must be weighed against the reasonably anticipated detrimental effects to the species. In the present case because of the widespread misunderstanding about the effects of such designation on private landowners, and the environment of mistrust and fear that such misunderstanding often create, the Service concludes that the detriment to the species from a critical habitat designation covering non-Federal lands would outweigh the educational benefit of such designation. The information and education process is more effectively handled by working directly with landowners and communities during the recovery planning process and through the section 7 consultation and coordination process where a Federal nexus exists. The more effective utilization of these existing processes will impart the same knowledge to the landowners that critical habitat designation would, absent the resultant confusion and misunderstandings often accompanying a critical habitat designation.

For similar reasons, the Service also concludes that there would be no additional benefits to the species covered in this rule beyond the benefits conferred by listing from a designation of critical habitat on Federal lands. In the case of each of these plant species, the existing occurrences of the species are known by the BLM and the U.S. Forest Service. Also any action that would result in adverse modification would almost certainly result in likely jeopardy to the species. Therefore, a designation of critical habitat on these Federal lands would confer no additional benefit on the species. To the contrary, particularly on National Forest System lands, a designation of critical habitat is anticipated to increase the threats to these species from vandalism and collection. Threats of a similar nature to those previously identified are likely to result in response to the listing of a species (Oberbauer 1992, Beauchamp *in litt.* 1997). Simply listing

a species can precipitate both legal and illegal commercial or scientific collection interest. Such interest can threaten the species through unauthorized and uncontrolled collection for both commercial and scientific purposes. The listing of species as endangered or threatened publicizes their rarity and may make the species more susceptible to collection by researchers or curiosity seekers (Mariah Steenson pers. comm. 1997, M. Bosch, U.S. Forest Service *in litt.* 1997). The Service has been able to document a recent incident where, following the publication of critical habitat designation in the **Federal Register**, unidentified persons visited a Forest Service wilderness area where listed plants were located and specifically asked directions to the location of the plants in question. Several plants were later found to be missing from the Service study plots (Nora Murdock, U.S. Fish and Wildlife Service, pers. comm. 1998).

The Service has weighed the lack of overall benefits of critical habitat designation beyond that provided by virtue of listing as threatened or endangered, the benefits of public notification against the detrimental effects of the negative public response and misunderstanding of what critical habitat designation means, and the increased threats of illegal collection and vandalism. The Service therefore, finds that critical habitat designation is not prudent for *Berberis nevini*, *Fremontodendron mexicanum* and *Ceanothus ophiophilus*.

More specific reasons why designation of critical habitat is not prudent for each of these species is addressed in the following discussion.

Berberis nevini

Berberis nevini occurs on both Federal and private lands in Riverside, San Bernardino and Los Angeles Counties. A large population occurs in San Francisquito Canyon on the Angeles National Forest in Los Angeles County (Boyd *et al.* 1989). A few individuals occur on BLM lands north of Vail Lake and in the Cleveland National Forest southeast of Vail Lake (Boyd *et al.* 1989). Both the BLM and the Forest Service are aware of the occurrences and habitat of this species on their lands; these agencies consult with the Service under section 7 for activities related to other listed species in the area and would be subject to similar requirements as a result of this listing. Designation of critical habitat would not necessarily require the Forests to increase or change their commitment or management efforts for this species,

only to avoid adverse modification of such critical habitat.

On private lands, urban development in the Vail Lake area of Riverside County threatens the largest group of occurrences of *B. nevini*. Most of the occurrences at Vail Lake would likely be eliminated by planned development in the area that was approved by Riverside County and allows subdivision of parcels into 20-ac lots (Boyd 1991, Shaffer 1993, Jeff David and Associates 1995).

Federal involvement on the private lands where this species occurs is not anticipated, although a proposal to widen State Route 79 to four lanes may impact some populations. If listed, any future Federal involvement through permitting or funding such as through the Federal Highway Administration or the Corps through section 404 of the Clean Water Act, would trigger the interagency coordination and consultation requirements of section 7 where such actions are found to affect this species. An analysis to determine jeopardy under section 7(a)(2) would necessarily consider the loss of individual plants associated with habitat impacts. Therefore, there would be no additional conservation benefit to the species from designation of critical habitat beyond that provided by the species' listing.

The threat of vandalism on both Federal and private lands exists for this species. The very limited protections of section 9(a)(2) of the Act renders plants particularly vulnerable to unrestricted collection, vandalism or other damage. Generally, on private lands, a section 9 violation requires evidence that collection of listed plants occurred without the consent of the landowner or in knowing violation of a state law, and that vandalism to plants occurred in violation of some existing state law such as criminal trespass. On Federal lands, to make a charge of section 9 violation, the Service would need to prove malicious intent and that the damage to plants and their habitat was deliberate. It is very difficult to prove criminal intent, particularly if the damage is the result of recreational activity such as off-road vehicle activity, hiking or camping. Vandalism is considered a threat to *Berberis nevini* because some interests may view the presence of sensitive species as an obstacle to development (Mitchell Beauchamp, Pacific Southwest Biological Services, *in litt.* 1993).

Berberis nevini also exists in the nursery trade. Seeds and cuttings for nursery stock are occasionally gathered from natural populations (Susan Jett, Nursery Manager, Rancho Santa Ana

Botanic Garden, *in litt.* 1997), although many seeds and cuttings are also derived from existing cultivars (Elena Bengé, Tree of Life Nursery, San Juan Capistrano, California, pers. comm. 1995). Access to most of the remaining occurrences is limited by private property boundaries and/or inaccessible, rugged terrain. However, simply listing this species may precipitate increased interest that could result in collections of wild specimens in the event their locations were made widely known. Publication of precise maps and descriptions of critical habitat would likely increase the degree of threat to this species from collection or vandalism and habitat degradation associated with such collection and vandalism, and would likely contribute to its decline.

The Service concludes that no benefit over that provided by listing would result from identification of critical habitat on the non-Federal lands where this species occurs and would likely be detrimental for the reasons mentioned above. The identification of critical habitat would not increase management or conservation efforts on private lands and could impair those efforts. The Service believes that conservation of this species on private lands can best be addressed by working directly with landowners and communities during the recovery planning process and through the interagency coordination and consultation processes of section 7 should there be any future unforeseen Federal involvement. The Service has weighed the general lack of benefit beyond that provided by virtue of listing as threatened or endangered against the detrimental effects of the increased threat of illegal collection and vandalism and the potential for private landowner misunderstandings about the effects of critical habitat designation on private lands, and concludes that critical habitat for *Berberis nevini* is not prudent at this time because of an expected increase in the degree of threat to this species from vandalism and collection and an overall lack of benefit.

Fremontodendron mexicanum

Reliable distribution records for *Fremontodendron mexicanum* indicate that it is currently known only from Cedar Canyon on Otay Mountain in southern San Diego County, California and at Arroyo Seco, north of San Quintin, Estado de Baja California, Mexico (Wiggins 1980). BLM manages most of the Cedar Canyon population; about 50 percent of the habitat occupied or suitable for restoration of *F. mexicanum* populations exists on lands administered by the BLM as an Area of

Critical Environmental Concern (ACEC) and a Research Natural Area (RNA). The remaining occupied or potential habitat is located on the privately owned Otay Ranch and has been zoned as natural open space (Ogden Environmental and Energy Services, Inc. 1992; Tom Oberbauer, pers. comm. 1998).

Federal involvement on the private lands where this species occurs is not anticipated. If listed, any future Federal involvement through permitting or funding, such as through Immigration and Naturalization Service, Border Patrol activities or the Corps through section 404 of the Clean Water Act, would trigger interagency coordination and consultation, where such actions are found to affect this species. An analysis to determine jeopardy under section 7(a)(2) would consider loss of individual plants associated with habitat impacts. Therefore, there would be no additional conservation benefit to the species from designation of critical habitat beyond that provided by the species' listing.

The BLM is specifically managing for *Fremontodendron mexicanum* on their lands. The agency consults with the Service under section 7 for activities related to other listed species in the area and would be subject to similar requirements as a result of this listing. Designation of critical habitat would not necessarily require the BLM to increase or change their commitment or management efforts for this species, which are considerable, but would only add the requirement that the agency avoid adverse modification of such critical habitat. Because the BLM now provides considerable management for *Fremontodendron mexicanum* on their lands, and will be subject to the standards of section 7 consultation upon final listing, the Service finds that no additional benefits would be provided to the species above those provided by the actual listing.

Fremontodendron mexicanum exists in the nursery trade. Seeds and cuttings for nursery stock are occasionally gathered from natural populations (Susan Jett, Nursery Manager, Rancho Santa Ana Botanic Garden, *in litt.* 1997), although seeds and cuttings are also derived from existing cultivars (Elena Bengé, Tree of Life Nursery, San Juan Capistrano, California, pers. comm. 1995). However, simply listing this species is expected to precipitate increased interest that could result in collections of wild specimens if their locations were made widely known. Publication of precise maps and descriptions of critical habitat would likely increase the degree of threat to this species from collection and habitat

degradation associated with such collection, and would likely contribute to its decline.

The threat of vandalism on both Federal and private lands exists for this species. The very limited protection of section 9(a)(2) of the Act, render plants particularly vulnerable to unrestricted collection, vandalism or other damage.

The Service concludes that no benefit over that provided by listing would result from identification of critical habitat for *Fremontodendron mexicanum* and such designation would likely be detrimental for the reasons discussed above. The BLM is implementing considerable management for this species on its lands, and the designation of critical habitat would not change current management efforts. The identification of critical habitat would not increase management or conservation efforts on private lands. The Service believes that conservation of this species on both private and Federal lands can best be addressed by working directly with landowners and communities during the recovery planning process and through the interagency coordination and consultation processes of section 7.

In making this determination the Service has weighed the value of any benefits provided by critical habitat designation and compared that measure of value to that reasonably expected by the virtue of the species being listed as threatened or endangered. The Service has appropriately weighted the detrimental effects of the increased threat of illegal collection and vandalism, as well as the potential for private landowner misunderstandings about the effects of critical habitat designation on private lands. In light of this evaluation, the Service concludes that critical habitat for *Fremontodendron mexicanum* is not prudent at this time because of an expected increase in the degree of threat to this species from vandalism and collection and an overall lack of benefit.

Ceanothus ophiochilus

Ceanothus ophiochilus occurs at three sites on both private and Federal lands in southwestern Riverside County, California. One population of 3,000–5,000 plants occupies seemingly suitable habitat on privately owned land at Vail Lake. The remaining two populations exist on land managed by the Cleveland National Forest, where over 4,000 plants exist in the Agua Tibia Wilderness Area. The two populations in the Agua Tibia Wilderness occupy about 50 percent of the known occupied habitat of the species and contain a significant number of individuals, and

the Vail Lake population includes the other 50 percent of the known occupied habitat and plants. The Forest Service is aware of the occurrences and habitat of this species on its lands and consults with the Service under section 7 for activities related to other listed species in the area. The Forest Service would be subject to similar requirements as a result of this listing. Designation of critical habitat would not necessarily require the Forest Service to increase or change its commitment or management efforts for this species, only to avoid adverse modification of such critical habitat.

On private lands, urban development in the Vail Lake area is a threat. Planned development in the area was approved by Riverside County and allows subdivision of parcels into 20 ac (9 ha) lots (Boyd 1991, Shaffer 1993). All of the parcels in the Vail Lake planned community supporting *Ceanothus ophiochilus* have been sold. The Service has recently received notification of filing for a conditional use permit for the RV park parcel immediately adjacent to the parcel that supports the *C. ophiochilus* population.

The Service is working with Riverside County to create a multispecies habitat conservation plan under section 10 of the Act that may benefit *Ceanothus ophiochilus*. Riverside County has signed planning agreements with local, State and Federal agencies including the Service. While the specific protections that such a plan could provide are not yet available, this multispecies plan may provide significant protection for *C. ophiochilus*.

Other than potential planning under section 10 of the Act, Federal involvement on the private lands where this species occurs is not anticipated. If listed, any future Federal involvement through permitting or funding, such as through the Federal Highway Administration or the Corps through section 404 of the Clean Water Act, would trigger the interagency coordination and consultation requirements of section 7 where such actions are found to affect this species. An analysis to determine jeopardy under section 7(a)(2) would consider loss of individual plants associated with habitat impacts. Therefore, there would be no additional conservation benefit to the species from designation of critical habitat beyond that provided by the species' listing.

The threat of vandalism on both Federal and private lands exists for this species. The very limited protection of section 9(a)(2) of the Act, renders plants particularly vulnerable to unrestricted collection, vandalism or other damage.

Vandalism is considered a threat to *Ceanothus ophiochilus* because some interests may view the presence of sensitive species as an obstacle to development (Mitchell Beauchamp, Pacific Southwest Biological Services, *in litt.* 1993). As previously noted, a rather unfortunate example of this occurred recently where persons have intentionally destroyed known federally listed plant locations at a work site in southern California (T. Thomas, U.S. Fish and Wildlife Service *in litt.*). This type of threat exists for all occurrences of these plants on privately owned land.

Collection is not believed to be a significant threat to *Ceanothus ophiochilus* at this time. However, simply listing this species could precipitate increased interest that could result in collections both legal and illegal of wild specimens if their locations were made widely known. Publication of precise maps and descriptions of critical habitat would likely increase the degree of threat to this species from collection or vandalism and habitat degradation associated with such collection and vandalism, and would likely contribute to its decline. The Cleveland National Forest has received requests for permits to collect *Ceanothus ophiochilus*, although no horticultural collections have been permitted (Winter, *in litt.* 1995).

The Service concludes that no benefit over that provided by listing would result from identification of critical habitat for *Ceanothus ophiochilus* and such designation would likely be detrimental for the reasons previously mentioned. The identification of critical habitat would not increase management or conservation efforts on private lands. The Service believes that conservation of this species on private lands can best be addressed by working directly with landowners and communities during the recovery planning process and through the interagency coordination and consultation processes of section 7 should there be any future unforeseen Federal involvement. The Service has weighed the general lack of benefit beyond that provided by virtue of listing as threatened or endangered against the detrimental effects of the increased threat of illegal collection and vandalism and the potential for private landowner misunderstandings about the effects of critical habitat designation on private lands, and concludes that critical habitat for *Ceanothus ophiochilus* is not prudent at this time because of an expected increase in the degree of threat to this species from vandalism and collection and an overall lack of benefit.

In conclusion, the Service, for each of these species has weighed the value of any benefit provided by virtue of being listed as threatened or endangered. The Service has compared that value to the detrimental effects of the increased threat of collection and vandalism and the potential for private landowner misunderstandings about the effects of critical habitat designation on private lands. The Service finds, in light of such factors, that designation of critical habitat for *Berberis nevini*, *Ceanothus ophiochilus* and *Fremontodendron mexicanum* is not prudent at this time because of an expected increase in the degree of threat to these species from vandalism and collection and an overall lack of benefit.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation actions by Federal, State, and local agencies, private organizations and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against 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 designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. 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 a species or 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 section 7 regarding *Berberis nevini*, *Fremontodendron mexicanum*, and *Ceanothus ophiochilus* include the U.S. Forest Service, BLM, and the Immigration and Naturalization Service Border Patrol through their management activities and, for *B. nevini*, the Army Corps of Engineers through its permit

authority under section 404 of the Clean Water Act. These agencies either administer lands containing these species or authorize, fund, or otherwise conduct activities that may affect these species.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered or threatened plants. All prohibitions of section 9(a)(2) of the Act apply. Section 4(d) of the Act allows for the provision of such protection to threatened species through regulation. This protection may apply to *Ceanothus ophiochilus* in the future if such regulations are promulgated. Seeds from cultivated specimens of threatened plants are exempt from these regulations provided that their containers are marked "Of Cultivated Origin." Certain exceptions to the provisions also apply to agents of the Service and State conservation agencies.

It is the policy of the Service, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to increase public understanding of the prohibited acts that will apply under section 9 of the Act. All three of the species in this rule are known to occur on lands under Federal jurisdiction. Collection, damage, or destruction of listed species on Federal lands is prohibited except as authorized under section 7 or section 10(a)(1)(A) of the Act. Such activities on non-Federal lands would constitute a violation of section 9 if conducted in knowing violation of California State law or regulation, or in violation of California State criminal trespass law.

The Service believes that, based upon the best available information, the following actions will not result in a violation of section 9, provided these activities are carried out in accordance with existing regulations and permit requirements:

(1) Activities authorized, funded, or carried out by Federal agencies (e.g., grazing management, agricultural conversions, wetland and riparian habitat modification, flood and erosion control, residential development, recreational trail development, road construction, hazardous material containment and cleanup activities, prescribed burns, pesticide/herbicide application, and pipelines or utility lines crossing suitable habitat), when such activity is conducted in accordance with any reasonable and prudent measures given by the Service in a consultation conducted under section 7 of the Act;

(2) Casual, dispersed human activities on foot or horseback (e.g., bird watching, sightseeing, photography, camping, hiking);

(3) Activities on private lands that do not require Federal authorization and do not involve Federal funding, such as grazing management, agricultural conversions, flood

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Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

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