

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[FWS-R8-ES-2008-0011; 92210-1117-0000-B4]

RIN 1018-AU84

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Berberis nevinii* (Nevin's barberry)**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are designating critical habitat for *Berberis nevinii* (Nevin's barberry) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 6 acres (ac) (3 hectares (ha)) in Riverside County, California, fall within the boundaries of the final critical habitat designation.

DATES: This rule becomes effective on March 14, 2008.

ADDRESSES: The final rule, final economic analysis, and map of critical habitat will be available on the Internet at <http://www.regulations.gov> and <http://www.fws.gov/carlsbad/>. Supporting documentation we used in preparing this final rule will be available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 6010 Hidden Valley Road, Carlsbad, CA 92011; telephone 760-431-9440; facsimile 760-431-5901.

FOR FURTHER INFORMATION CONTACT: Jim Bartel, Field Supervisor, U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, telephone 760-431-9440 (see **ADDRESSES** section). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:**Background**

It is our intent to discuss only those topics directly relevant to the development and designation of critical habitat in this final rule. For additional information on the description, biology, and ecology of *Berberis nevinii*, refer to the final listing rule published in the **Federal Register** on October 13, 1998 (63 FR 54956), and the proposed critical habitat rule published in the **Federal Register** on February 6, 2007 (72 FR 5552).

Species Description and Reproduction

Berberis nevinii is a 3 to 13 foot (ft) (1 to 4 meter (m)) tall rhizomatous, evergreen shrub in the barberry family (Berberidaceae) that is endemic to southern California. In both the proposed critical habitat rule (72 FR 5552; February 6, 2007) and the final listing rule (63 FR 54956; October 13, 1998) for the species, we reported *Berberis nevinii* to be rhizomatous. Some members of the genus *Berberis* have underground stems (rhizomes) that give rise to aerial shoots. Some species have long slender-branched rhizomes while others, including *B. nevinii*, have short stout-branched rhizomes. Because aerial stems commonly arise in this manner, a single genetic individual may appear to be a dense or diffuse grouping of aerial stems of different age classes. As mentioned in the Primary Constituent Elements section of the proposed critical habitat rule, *B. nevinii* is not known to reproduce by vegetative means through the process of separation of rhizomes between groupings of aerial stems, as is the case with some other members of the genus *Berberis* (Mistretta and Brown 1989, p. 5; Boyd 2006, p. 1). According to White (2007, p. 1), the now-extirpated *B. nevinii* occurrence in San Timoteo Canyon was likely resprouting from a large basal burl, similar to what is seen in other chaparral shrub species. Generally, the term burl is reserved for those more condensed rounded woody structures that produce aerial stems (e.g., some *Arctostaphylos* (Manzanita) species) when plants are older or existing stems have sustained damage. Various authors have used either of these terms (burl or rounded woody structures) to refer to the underground portions of *B. nevinii*. We will continue to consider the basal structures that routinely produce new aerial stems as woody rhizomes. For a detailed description of *B. nevinii*, please refer to the proposed critical habitat designation published in the **Federal Register** on February 6, 2007 (72 FR 5552) and the final listing rule published in the **Federal Register** on October 13, 1998 (63 FR 54956).

In the proposed critical habitat rule (72 FR 5552; February 6, 2007), we discussed the relationship between *Berberis nevinii*'s life history and wildfire in southern California chaparral (72 FR 5556, 5560). Aerial stems of *B. nevinii* resprout following fire (Soza and Fraga 2003, p. 2; Mistretta and Brown 1989, p. 5; USFS 2005, p. 237). Because *B. nevinii* fruits appear to be adapted for dispersal by animals (most likely birds), the accumulation of a seed bank seems unlikely (White 2007, p. 1). Seed

germination rates, even without special treatment, are high (Mistretta and Brown 1989, p. 5). These life history features appear to match Keeley's (1991, p. 107) description of the "non-refractory seed" (fire-resister) syndrome (White 2007, p. 1). Shrubs with this life history strategy have seeds that do not require fire-associated cues for germination and generally recruit into chaparral in the absence of fire, potentially requiring long fire-free periods to do so (White 2007, p. 1). This appears to contradict California Department of Fish and Game's (CDFG) characterization of *B. nevinii* as a fire responsive species (CDFG 2005, p. 272). The specific response of *B. nevinii* to changes in the natural fire regime (fire frequency, intensity, or timing) may not be fully understood (63 FR 54964, 54965). Fires that follow abnormally long fire-free periods likely have more severe impacts to the native occurrences because of accumulation of standing and downed fuel loads that may cause the fire to be more destructive and burn at higher temperatures. However, it is also likely that too-frequent fire could pose a threat to this species by killing mature, seeding adults and resprouting individuals prior to seed set or recovery from earlier fires, as well as young plants before they have reached reproductive age. Furthermore, too-frequent fire can lead to the conversion of native shrublands to weedy annual grasslands (D'Antonio and Vitousek 1992, pp. 74-75; White 2007, p. 1).

Species Distribution

In general, *Berberis nevinii* has a limited natural distribution; it typically occurs in small stands (less than 20 individuals, and often only one or two) in scattered locations in Los Angeles, San Bernardino, and Riverside Counties, California, with the largest native occurrence (as defined by the California Natural Diversity Database (CNDDDB)) consisting of several stands and totaling about 134 individuals to the south of Vail Lake in Riverside County (Boyd 1987; CNDDDB 2007). *B. nevinii* typically occurs at elevations from 900 to 2,000 ft (300 to 650 m) (63 FR 54956), but most native occurrences are between 1,400 and 1,700 ft (427 to 518 m) in elevation (Boyd 1987, p. 2; CNDDDB 2007). For a detailed discussion and summary of the distribution of *B. nevinii*, please refer to the proposed critical habitat designation published in the **Federal Register** on February 6, 2007 (72 FR 5552, please refer to pages 5554-5556).

In the proposed critical habitat rule (72 FR 5552; February 6, 2007), we inadvertently failed to mention an

occurrence of *Berberis nevinii* in Riverside, California, that was known at the time of listing but is not recorded in the CNDDDB (CNDDDB 2007). This occurrence consists of a single plant growing in a granite crevice on a low hill and is suspected to be of cultivated origin due to its isolation from known wild occurrences of *B. nevinii* (White 2001, p. 36). As stated in the proposed rule, we do not believe that single plant occurrences, which do not exhibit any evidence of reproduction, are likely to contribute to recovery of this species and, therefore, are not essential to the conservation of this species. Furthermore, the conservation role of introduced populations is unknown. We did not propose to include any occurrences suspected to be of cultivated origin or any occurrences that supported a single plant. However, we will continue to explore the potential conservation value of naturalized occurrences and consider these occurrences in future recovery actions as appropriate.

As stated in the proposed rule (72 FR 5552; February 6, 2007), potential habitat within the species' range has been extensively botanically explored or surveyed (Boyd 1987, p. 3), including potential habitat on the San Bernardino National Forest (SBNF) in 1988 and 1989, which yielded no new occurrences (Mistretta 1989, unpaginated; 72 FR 5555). Since publication of the proposed rule, we were informed by the Cleveland National Forest (CNF) that surveys of potential habitat on the SBNF have been conducted since 1989, also with negative results. Recent discoveries of native occurrences of *Berberis nevinii* have been limited to individual plants or small stands (Boyd 1987, p. 3; Boyd and Banks 1995, unpaginated; Soza and Boyd 2000, p. 4), and additional survey efforts are unlikely to identify new large occurrences of this species.

Suitable *Berberis nevinii* habitat may occur in Los Angeles and San Bernardino counties on or adjacent to the Angeles National Forest (ANF) in the Liebre Mountains and on the south slope of the San Gabriel Mountains (Soza and Boyd 2000, p. 4). Specifically in the San Gabriel Mountains, suitable habitat may occur in the foothills, from Pacoima Canyon and Lopez Canyon, both adjacent to the San Fernando Valley, and in canyons in the vicinity of San Antonio Wash near Claremont (Soza 2003, based on expertise of Boyd, Rancho Santa Ana Botanic Garden). In San Bernardino County, there is potential for suitable habitat in the Crafton Hills area near Redlands off of National Forest lands and in Cajon

Canyon (erroneously stated to be in the ANF in the proposed rule) on SBNF lands. In Riverside County, there is potential for suitable habitat:

(1) On the west side of the San Jacinto Mountains in the vicinity of Bautista Canyon (Soza 2003, unpaginated; Holtrop 2007, p. 1), although surveys in these areas have failed to locate any plants to date (Holtrop 2007, p. 1);

(2) In the area between Kolb Creek and Temecula Creek, south and east of Vail Lake (e.g., Temecula Creek drainage, the hills between Temecula Creek and Wilson Creek);

(3) In the canyons draining Big Oak Mountain north of Vail Lake (Boyd et al. 1989, p. 16; Soza 2003, unpaginated); and

(4) On the northern edge of the Agua Tibia Wilderness in the CNF straddling Riverside and San Diego counties (Boyd and Banks 1995, unpaginated; Reiser 2001, unpaginated; Soza 2003, unpaginated).

Previous Federal Actions

As discussed in the proposed rule (72 FR 5552; February 6, 2007), the Service agreed, as part of a settlement agreement, to submit to the **Federal Register** a proposed rule to designate critical habitat, if prudent, on or before January 30, 2007, and a final rule by January 30, 2008 (72 FR 5556, 5557). We also published a notice of availability (NOA) of the draft economic analysis (DEA) of the 2007 proposed rule in the **Federal Register** on October 17, 2007 (72 FR 58793). In this notice, we announced revisions to proposed critical habitat subunits 1B, 1D, and 1E. We revised these subunits based on information received during the first comment period, as well as data obtained during the development of the DEA (see Summary of Changes from Proposed Rule section below for a detailed discussion). This final rule satisfies the December 21, 2004, settlement agreement with respect to *Berberis nevinii*. For a discussion of additional previous Federal actions involving this species, please refer to the listing rule (63 FR 54956; October 13, 1998) or the proposed critical habitat rule (72 FR 5552; February 6, 2007).

Summary of Comments and Recommendations

We requested comments from the public on the proposed designation of critical habitat for *Berberis nevinii* during two comment periods. The first comment period opened on February 6, 2007, the date of publication of the proposed rule (72 FR 5552), and closed on April 9, 2007. We did not receive any requests for a public hearing during this

comment period. We also requested comments on the proposed rule and DEA during a comment period that opened on October 17, 2007 and closed on November 16, 2007 (72 FR 58793). We contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and DEA during these two comment periods.

During the first comment period, we received five comments directly addressing the proposed critical habitat designation: one from a peer reviewer, one from a Federal agency, one from a local agency, and two from organizations or individuals. During the second comment period, we received no comment letters on the proposed critical habitat designation or DEA. We reviewed all comments received during both comment periods for substantive issues and new information regarding the designation of critical habitat for *Berberis nevinii*, addressed them in the following summary, and incorporated them into the final rule as appropriate.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from four knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. We received a response from one of the four peer reviewers from which we requested comments.

Peer Reviewer Comments

(1) *Comment:* After review of personal files, the peer reviewer concurred with our description of the occurrences of *Berberis nevinii* described in the proposed rule and was not aware of any occurrences outside of the areas described in the proposed rule. However, the reviewer recommended that the Service review the most current CNDDDB and Consortium of California Herbaria records to identify any additional occurrences of *B. nevinii* before publishing the final rule.

Our Response: For the proposed rule, we based our understanding of the current distribution of *Berberis nevinii* on the most current occurrence records in the CNDDDB (2006), and utilized the Consortium of California Herbaria records for information on specific occurrences. Since publication of the proposed rule, we conducted another search of the CNDDDB database and Consortium records. No new occurrence records were found from either source. Two separate occurrences, likely

introduced, were found in Griffith Park in the Hollywood Hills of Los Angeles County. One was documented with a herbarium specimen (Consortium of California Herbaria, *Berberis nevinii*, Soza et al. 1060, RSA 679741). Based on our review of these information sources and the fact that the only additional occurrence information received during the first comment period from this peer reviewer was in reference to a single, isolated individual likely of cultivated origin, we believe that we based the proposed and this final designation on the best available information.

(2) *Comment:* The peer reviewer commented that he was unable to critically review the proposed exclusion of critical habitat covered under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), but suggested that the Service review his extensive peer review comments provided on November 3, 2004, on the proposed exclusion of critical habitat for *Atriplex coronata* var. *notatior* (San Jacinto Valley crownscale) (69 FR 59844; October 6, 2004) covered under the MSHCP.

Our Response: The content and scope of the reviewer's comments provided on November 4, 2004, related to the Western Riverside County MSHCP also are considered applicable to the proposed critical habitat designation for *Berberis nevinii*. Per the reviewer's recommendation, we addressed the specified remarks incorporated by reference in the submitted peer review regarding the exclusion of critical habitat for *Atriplex coronata* var. *notatior* covered under the MSHCP. These comments included assertions that: (1) It is important to include a clear, detailed explanation of the MSHCP, its associated Implementing Agreement, the Service's formal section 7 consultation for the MSHCP, and the Service's responsibilities and authority under the MSHCP as they relate to covered species in the final rule; (2) the Service failed to provide an adequate basis for the exclusion of lands from the critical habitat designation and that our decision to do so based on the MSHCP's ability to protect the taxon's habitat was not adequately supported; and (3) the rule should include further explanation of how the designation of critical habitat for *B. nevinii* may impede cooperative conservation efforts, such as those implemented by the MSHCP.

In response to the peer reviewer's concerns regarding the MSHCP and its associated documents, we have added information to our discussion of the exclusion of areas occupied by *Berberis nevinii* covered by the Western Riverside County MSHCP in this final

rule, including a detailed explanation of the MSHCP and its ability to protect the taxon's habitat and the Service's responsibilities and authority under the MSHCP as they relate to covered species (see Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below). Also, since the October 6, 2004, proposed critical habitat designation for *Atriplex coronata* var. *notatior* (69 FR 59844), we have revised our discussion of the benefits of including lands in critical habitat (see Benefits of Designating Critical Habitat section below) to include a discussion of how designation of critical habitat may impede cooperative conservation efforts (see Conservation Partnerships on Non-Federal Lands section below for a detailed discussion).

(3) *Comment:* The peer reviewer noted that the map of proposed critical habitat in the proposed rule did not indicate which lands were proposed for exclusion and did not indicate land ownership, and suggested including this information on the map in the final rule.

Our Response: While we did not include a map in the proposed rule identifying the location of areas that were proposed for exclusion, a map containing such information was available on our Web site (<http://www.fws.gov/carlsbad>) during both public comment periods. We appreciate the peer reviewer's suggestion, and will consider including maps identifying areas proposed for exclusion in future proposed critical habitat rules. It is our practice to only publish maps of designated critical habitat in final rules.

(4) *Comment:* The peer reviewer commented that the proposed rule incorrectly identifies the location of CNDDDB Element Occurrence 10 as "Big Tejuanga Wash" instead of "Big Tujunga Wash."

Our Response: We appreciate the correction to the misspelling of this location in the proposed rule. We made the correction in the October 17, 2007, notice of availability for the DEA (72 FR 58793) (please see the Public Comments Solicited section of that notice).

(5) *Comment:* The peer reviewer provided additional information and clarification on *Berberis nevinii* life history, including reproductive strategy (resprouting, seed banks, seedling recruitment) and its response to wildfire and overly frequent fire. The reviewer further commented that *B. nevinii* is probably not rhizomatous, as described in the final listing rule and the proposed critical habitat rule, and that the reported vegetative reproduction in San Timoteo Canyon is probably from

resprouting from a large basal burl, as is often seen in other chaparral shrubs. The reviewer also provided the Service with updated information on *B. nevinii* in the form of a species account (prepared by the reviewer and dated March 2001) for the Bureau of Land Management's (BLM) planned section 7 consultation with the Service on its revision of the South Coast Resource Management Plan.

Our Response: We appreciate the additional information and clarifications on *Berberis nevinii*'s life history, status and distribution, and response to wildfire. We have included this information in this final rule (please see Background and Primary Constituent Elements sections). The Service considers the reviewer's use of the term "burl" inappropriate in describing the short rhizomatous structures found in *B. nevinii*. However, the Service concedes that often both these terms have been used to describe this species. The short-branched woody rhizomes that almost always annually give rise to new aerial stems in this species are unlike the essentially unbranched rounded burls commonly associated with *Arctostaphylos* (Manzanita) and other chaparral taxa. Burls normally produce new aerial stems from among the myriad of dormant surface buds only when the existing stems are damaged or of considerable age.

Public Comments

Comments Related to the Western Riverside County MSHCP

(6) *Comment:* One commenter stated strong support for the designation of critical habitat for *Berberis nevinii*, but expressed concern about the proposed exclusion of over 92 percent of occupied habitat under the Western Riverside County MSHCP, including the area with the largest known occurrence of the species. The commenter questioned the ability of the "untested" Western Riverside County MSHCP to prevent extinction of this species or provide for its conservation and recovery due to: (1) Uncertain funding mechanisms; (2) understaffing in agencies involved with implementing the plan; (3) the complexity of the plan; and (4) the intense development pressure within the area covered by the plan. The commenter stated that designating critical habitat in this area would provide a safety net to protect this endangered plant based on the consultation requirements under section 7 of the Act. Another commenter expressed concern that the exclusion of lands within the boundaries of the

MSHCP would not leave enough land within the critical habitat designation for *B. nevinii* to thrive.

Our Response: As discussed in the proposed rule and in this final rule, we have determined that the physical and biological features essential to the conservation of *Berberis nevinii* will be adequately protected by the Western Riverside County MSHCP and that the exclusion of lands covered by this regional plan will not jeopardize the continued existence of the species. The conservation objectives in the MSHCP for *B. nevinii* include: (1) Conservation and management of at least 8,000 ac (3,238 ha) of suitable habitat, including all known locations for this species in the Vail Lake area; (2) implementation of specific management and monitoring practices to help ensure the conservation of *B. nevinii* in the MSHCP Conservation Area; (3) maintenance of the physical and ecological characteristics of occupied habitat; and (4) surveys and other required procedures to ensure avoidance of impacts to at least 90 percent of suitable habitat determined important to the long-term conservation of *B. nevinii* (see Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section for a detailed discussion of the MSHCP). The conservation and management of *B. nevinii* habitat as described in the Western Riverside County MSHCP will remove or reduce known threats to *B. nevinii* and its habitat, providing for the survival and recovery of this species.

We consider the regulatory (or consultation) benefit of critical habitat on these private lands to be low, as these lands may not have a Federal nexus under which to initiate consultation. Furthermore, any measures taken on private lands to minimize effects to a plant species or its habitat are completely voluntary. Under the Implementing Agreement of the Western Riverside County MSHCP, mandatory conservation measures provide for conservation of *B. nevinii* and its habitat. The MSHCP addresses conservation from a coordinated, integrated perspective rather than a piecemeal, project-by-project approach as would be achieved through multiple site-by-site, section 7 consultations involving critical habitat. Therefore, the Western Riverside County MSHCP provides a conservation benefit to *B. nevinii* and the physical and biological features essential to its conservation above the regulatory requirements associated with the designation of critical habitat.

The exclusion of critical habitat does not dismiss or lessen the value of the Vail Lake and Oak Mountain areas to the overall conservation of this species. Rather, we believe that the judicious exclusion of specific areas of non-Federal lands from critical habitat designations, where we have developed close partnerships with non-Federal land owners that have resulted in the development of HCPs or other voluntary conservation plans, can contribute to species recovery and provide a superior level of conservation than the designation of critical habitat alone. As described in detail in the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below, we have determined that the benefits of excluding areas within the Western Riverside County MSHCP (Subunits 1C, 1D, 1E, and 1F) outweigh the benefits of designating these lands, and that this exclusion will not result in the extinction of *B. nevinii*. Furthermore, we expect that this species will be conserved and recovered on MSHCP lands and do not believe that the plant will become restricted solely to designated lands as suggested by one commenter.

(7) **Comment:** One commenter supported the proposed exclusion of private lands within the boundaries of the Western Riverside County MSHCP plan area from the designation of final critical habitat because the MSHCP adequately provides for the survival and recovery of the species. However, this commenter expressed concern about language in the proposed rule that states that this area will be included in the final designation of critical habitat if the Secretary determines that the benefits of including these lands outweigh the benefits of excluding them. They further stated that under the provisions of the MSHCP and the associated Implementing Agreement, no critical habitat for *Berberis nevinii* should be designated in the MSHCP plan area.

Our Response: We have determined that private lands within the boundaries of the Western Riverside County MSHCP contain the physical and biological features essential to the conservation of *Berberis nevinii*, and meet the definition of critical habitat (see Criteria Used to Identify Critical Habitat section below). However, we have also determined that the benefits of excluding these private lands covered by the Western Riverside County MSHCP outweigh the benefits of designating critical habitat in these areas, and that this exclusion will not result in the extinction of *B. nevinii*; therefore, we have excluded all private

lands from this final designation (see Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below for a detailed discussion). In the proposed rule, we provided an analysis of the proposed exclusion to allow the public to comment and provide additional information to be considered in our final exclusion analysis. We have considered all information provided during both comment periods in finalizing this exclusion.

Comments Related to Criteria Used To Identify Critical Habitat

(8) **Comment:** We received a comment that critical habitat should at a minimum include all known remaining occurrences of the species, including those with a low number of individuals (less than two) or low reproductive activity.

Our Response: The Act defines critical habitat as the specific areas within the geographical area occupied by the species at the time it is listed on which are found those physical and biological features (I) essential to the conservation of the species and (II) which 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 a determination by the Secretary that such areas are essential for the conservation of the species. We believe that our proposed and final designations accurately describe all specific areas meeting the definition of critical habitat for *Berberis nevinii*.

As discussed in the Criteria Used to Identify Critical Habitat section of the proposed rule and this final rule, we delineated proposed critical habitat for *Berberis nevinii* using the following criteria: (1) Areas occupied by naturally occurring individuals at the time of listing and areas that are currently occupied by naturally occurring individuals; (2) occupied areas within the historical range of the species; (3) areas containing one or more of the primary constituent elements (PCEs) for this species; and (4) areas currently occupied by more than two *B. nevinii* plants that show evidence of reproduction (i.e., fruits with seed, seedlings, or plants of various size/age classes) on site. Application of these criteria captures the physical and biological features that are essential to the conservation of this species, identified as the species' PCEs laid out in the appropriate quantity and spatial arrangement. Thus, not all areas supporting the identified PCEs will meet the definition of critical habitat.

We recognize that our designation of critical habitat for *Berberis nevinii* does not encompass all known occurrences of this species as noted by the commenter. As discussed in the proposed rule, for sites where no information is available on reproduction or size/age class distribution, we assumed that reproduction had occurred at some point in the past if multiple *B. nevinii* plants were present. We also gave consideration to the ecological uniqueness of sites. Sites meeting these criteria were included in the proposed designation.

We did not include sites with only one individual or sites with only two individuals of the same size/age class because this condition may reflect a lack of successful reproduction and therefore the long-term viability of these occurrences is questionable. As discussed in the proposed critical habitat rule, many *Berberis nevinii* occurrences consist of very few individuals, and sometimes consist of only one or two large (presumably old) shrubs that have persisted on a site for many decades without evidence of reproducing. Because of the lack of evidence of reproduction for these small occurrences, and the low reproductive output of mature plants and limited numbers of surviving juvenile plants in general, we do not consider sites with only one plant or two plants of the same size/age class to represent an occurrence that exhibits a measurable degree of reproductive success that is likely to contribute to the recovery of the species.

As explained in the Primary Constituent Elements section of this final rule, a self-incompatible pollination system has been suggested (White 2001, p. 36). Additionally, *Berberis nevinii* does not appear to reproduce by vegetative means (Mistretta and Brown 1989, p. 5; Boyd 2006), as is the case with some other members of the genus *Berberis*. Therefore, pollen transfers from plants in different occurrences are likely necessary for reproduction to occur in sites supporting only one plant or two plants of the same size/age class. The habitat requirements and home ranges of potential pollinator species relative to native *Berberis* occurrences have not been determined; however, the lack of evidence of reproduction in these small *B. nevinii* occurrences suggests that pollination may not be occurring or another biological constraint is impacting the occurrences. The fact that reproduction has not been in evidence at these sites in several decades, if at all, suggests that they may not be viable occurrences over the long term. Whether or not these occurrences may contribute

to recovery of the species is unknown at this time. We will continue to explore the potential conservation value of these small occurrences, and consider these occurrences in future recovery actions as appropriate.

Additionally, we only considered areas occupied by naturally occurring individuals because we do not know the role that other occurrences (i.e., plants of cultivated origin or outplanted individuals originating from another part of the species' range that have subsequently naturalized to a new site) will play in the conservation of the species. Only about half of the known *Berberis nevinii* individuals found in the field are thought to be naturally occurring (CNDDDB 2007; 63 FR 54958), with the vast majority of these in the vicinity of Vail Lake and Oak Mountain. As discussed in the proposed rule, *B. nevinii* is available in the nursery trade and has been planted at numerous sites throughout the species' range (Boyd 1987, p. 2; Boyd and Banks 1995, unpaginated; Reiser 2001, unpaginated). We recognize that naturalized occurrences represent some of the largest (in terms of number of individuals) and most vigorously reproducing occurrences of the species, and could potentially play a role in preserving genetic diversity in *B. nevinii*. At least one naturalized occurrence (San Francisquito Canyon) may contain an individual or descendants of an individual that originated from a location where *B. nevinii* no longer occurs (i.e., the San Fernando Valley). Thus, we will continue to explore the potential conservation value of naturalized occurrences, and consider these occurrences in future recovery actions as appropriate.

Although we are not designating all known occurrences of *Berberis nevinii*, we believe that our criteria, and therefore the designation, are adequate to ensure the conservation of this species throughout its extant range based on the best available information at this time.

(9) *Comment:* One commenter stated that the proposed designation is flawed because it does not include unoccupied habitat for recovery, and that without including some suitable, but unoccupied, habitat (areas with one or more of the PCEs) in the critical habitat designation to allow *Berberis nevinii* to expand its range and promote recovery of the species, the Service will not be able to meet the Act's recovery goals and mandate.

Our Response: We have identified areas within the geographical range of the species that were occupied at the

time of listing, contain the physical and biological features essential to the conservation of the species, and may require special management considerations or protection. As described in the Background section, potential habitat within this species' range has been extensively botanically explored or surveyed (Boyd 1987, p. 3). Surveys throughout the SBNF and the CNF have not identified any new occurrences of this species. All recent discoveries of *Berberis nevinii* have been limited to individual plants or small stands (Boyd 1987, p. 3; Boyd and Banks 1995, unpaginated; Soza and Boyd 2000, p. 4) and additional survey efforts are unlikely to identify new large occurrences of this species. The long-term viability of single plant occurrences or small stands where there is no evidence of reproduction for many decades is questionable, and we do not believe that these areas will significantly contribute to the long-term recovery of this species. Furthermore, we do not have specific data concerning the habitat requirements or reproductive biology of this species to accurately predict any unoccupied areas where reintroduction would likely be successful. We designate critical habitat in areas outside the geographical area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species (50 CFR 424.12(e)). Accordingly, when the best scientific and commercial data do not demonstrate that the conservation needs of the species require designation of critical habitat outside of occupied areas, we will not designate critical habitat in areas outside the geographical area occupied by the species. Therefore, consistent with the Act and its implementing regulations, we are not designating any lands outside the area currently occupied by the species. We recognize that the designation of critical habitat may not include all of the habitat that may eventually be determined to be necessary for the recovery of the species and critical habitat designations do not signal that habitat outside the designation is unimportant or may not contribute to recovery.

Comments Related to Federal Lands

(10) *Comment:* The CNF commented that there is one population of *Berberis nevinii* containing six individuals on approximately 7 ac (2.8 ha) of land on the CNF. They further stated that the proposed critical habitat area mapped by the Service on the CNF (Subunit 1B) was 17 ac (6.8 ha), but according to CNF survey maps, these six individuals were

outside the critical habitat map for Subunit 1B as described and mapped in the February 6, 2007, proposed rule (72 FR 5552, pp. 5577, 5579).

Our Response: We appreciate the correction and have since received updated locality data from the CNF for the *Berberis nevinii* occurrence on CNF lands. We verified that Subunit 1B as described and mapped in the February 6, 2007, proposed rule (72 FR 5552, pp. 5577, 5579) was inaccurate, and revised the boundaries of this subunit based on the new occurrence information provided by CNF. A revised description of Subunit 1B was published on October 17, 2007, concurrently with the notice of availability for the DEA (72 FR 58793). Based on follow-up communication with a CNF botanist (Young 2007) and a June 6, 2006, site visit by Service biologists (Wallace 2006a), we believe that there are only five individuals, not six, at this site. To the best of our knowledge, the final rule correctly describes the *B. nevinii* occurrence on the CNF.

(11) **Comment:** The CNF provided the following changes or clarifications to information in the proposed rule: Cajon Canyon is within the SBNF, not the ANF; projects surveys after 1988 and 1989 were conducted in the SBNF for potential habitat and have also yielded negative results; potential habitat in the SBNF exists near the Crafton Hills area and on the west side of the San Jacinto Mountains in the vicinity of Bautista Canyon, although surveys have failed to locate any plants in these locations to date.

Our Response: We appreciate the clarification on the location of Cajon Canyon and the information on survey efforts and potential habitat on the SBNF. We have revised the text of this final rule to include this new information (see Background section above).

(12) **Comment:** The CNF commented that current laws, regulations, and policies, as well as the current land management plan direction on the CNF, are adequate to provide for the conservation of the *Berberis nevinii* occurrence and its habitat on the CNF. They further stated that they recently revised their Land Management Plan (LMP) to incorporate management direction that provides sufficient protection and management for *B. nevinii* and its habitat, and that the section 7 consultation on the revised LMP resulted in the issuance of a non-jeopardy biological opinion by the Service. Additionally, the Species Management Guide for *B. nevinii* (Mistretta and Brown 1989) developed for the ANF was formally adopted by

the CNF in 1992 to direct management of this species on the CNF. They further commented that there has been no change in the status and survival potential of this occurrence since its discovery in 1993; the area's fire history is within the range of natural variation; and no development or fuel treatments are planned for this area of the CNF that would affect the species or its habitat. Furthermore, the CNF also commented that the designation of critical habitat on CNF lands would not provide any additional benefit to the conservation of the species or its habitat since all site-specific projects proposed by the CNF are subject to section 7(a)(2) consultation with the Service and that the designation would unnecessarily add to their analysis burden by requiring the CNF to make a determination of effect regarding critical habitat when consulting under section 7 of the Act.

Our Response: We have determined that National Forest lands contain physical and biological features essential to the conservation of *Berberis nevinii*, and meet the definition of critical habitat (see Criteria Used to Identify Critical Habitat section below). We acknowledge that the revised LMP will benefit *B. nevinii* and its habitat. The LMP contains general provisions for species conservation and suggests specific management and conservation actions that will benefit this species and the physical and biological features essential to its conservation. Implementation of the LMP should address known threats to this species on National Forest lands. As stated above, we appreciate and commend the efforts of the United States Forest Service (USFS) to conserve federally listed species on their lands.

The Secretary may exclude an area from critical habitat under section 4(b)(2) of the Act after taking into consideration the economic impact, the impact on national security, and any other relevant impact if he determines that the benefits of such exclusion outweigh the benefits of designating such area as critical habitat, unless he determines that the exclusion would result in the extinction of the species concerned. We have considered the request from the CNF that we exclude their lands because it would unnecessarily add work in the future to determine the effect regarding critical habitat for actions on their lands and the fact that they had already completed consultation under section 7(a)(2) of the Act on their revised LMP. Recognizing that the CNF already analyzes the impacts of its proposed activities on both this species and the habitat, we are

unable to conclude that the benefits of exclusion would outweigh the benefits of inclusion in this particular instance.

Under the Joint Counterpart Endangered Species Act Section 7 Consultation Regulations published in the **Federal Register** on December 8, 2003 (68 FR 68254), projects under the National Fire Plan that the USFS determines are "not likely to adversely affect" any listed species or designated critical habitat do not require any additional consultation with the Service. Projects within the scope of the National Fire Plan include projects such as prescribed fire, mechanical fuels treatments (thinning and removal of fuels to prescribed objectives), emergency stabilization, burned area rehabilitation, road maintenance and operation activities, ecosystem restoration, and culvert replacement actions. Therefore, projects such as restoration, revegetation, and removal of nonnative species conducted in support of the National Fire Plan that are not likely to adversely affect federally-listed species should not add to the USFS' workload or cost burden by requiring them to conduct a separate analysis and make a determination of effect on critical habitat when consulting under section 7 of the Act.

Also, as part of our section 7 consultation with the USFS on the CNF's LMP, the USFS has already consulted on various activities carried out on National Forest lands including: roads and trail management; recreation management; special use permit administration; administrative infrastructure; fire and fuels management; livestock grazing and range management; minerals management; and law enforcement. In our 2005 biological opinion on the LMP, we determined that implementation of the plan was not likely to jeopardize the continued existence of *B. nevinii*. Since critical habitat has not been previously proposed or designated for this species, it is anticipated that the consultation with the USFS regarding their current LMP will be reinitiated. However, because the USFS has already consulted with us on potential impacts to this species related to the activities outlined in the LMP, the USFS can supplement its analysis for those activities already analyzed in the LMP with the additional analysis required for critical habitat areas. We do not believe that this additional analysis would place an undue burden on the USFS in this instance.

In conclusion, we are designating National Forest lands that meet the definition of critical habitat for *B. nevinii* because we are unable to

conclude, based on the general assertions provided by the agency here, that the benefits of excluding these National Forest lands outweigh the benefits of their inclusion. We will, of course, continue to consider on a case-by-case basis in future critical habitat rules whether to exclude particular Federal lands from such designation when we determine that the benefits of such exclusion outweigh the benefits of their inclusion.

Comments Related to the Draft Economic Analysis (DEA)

We did not receive any comments related to the DEA.

Comments From State Agencies

We did not receive any comments from State agencies on this rule.

Summary of Changes from Proposed Rule

In preparing the final critical habitat designation for *Berberis nevinii*, we reviewed and considered comments from the peer reviewer and the public on the proposed designation of critical habitat published on February 6, 2007 (72 FR 5552). In light of comments received on the proposed rule and information gathered for the DEA, we reevaluated the proposed critical habitat boundaries and published revisions to proposed critical habitat subunits 1B, 1D, and 1E concurrently with the notice of availability for the DEA (72 FR 58793; October 17, 2007). We did not receive any comments related to the DEA. This final rule differs from the proposed designation of critical habitat published on February 6, 2007 (72 FR 5552), as follows:

(1) In the proposed rule, we based the critical habitat boundary descriptions on Universal Transverse Mercator (UTM) gridlines set every 328 ft (100 m). These square grids were overlaid on occurrence polygons determined to be essential to the conservation of the species. Areas where the occurrence polygon intersected with a grid cell were retained. Although we used Geographic Information System (GIS) soil and vegetation data in an effort to ensure that the habitat within the grid cells containing the occurrence polygons had one or more of the PCEs, as well as aerial photography to remove areas that did not contain any of the PCEs, the use of UTM gridlines effectively created an artificial buffer around the resulting areas we determined to be essential to the conservation of the species. Therefore, in this final designation, we have refined the critical habitat boundaries by screen digitizing habitat polygons

using ArcMap, a computer GIS program. Use of this methodology produced more precise boundaries for areas that we determined contained the physical and biological features essential to the conservation of *Berberis nevinii*. Areas outside of these boundaries were removed (see the Criteria Used to Identify Critical Habitat section for a detailed discussion). This method of delineation for critical habitat reduced the total area of habitat from approximately 361 ac (146 ha) to 173 ac (70 ha). Total area in this final critical habitat rule is less than what was estimated in the notice of availability for the DEA (72 FR 58793; October 17, 2007) because the proposed critical habitat boundaries for subunits 1B, 1D, and 1E in the DEA were also produced using 100 m grids (see item (3) below). Therefore, the DEA and final economic analysis (FEA) likely overestimate the potential economic costs of this critical habitat designation because this reduction in area is not reflected in either the DEA or FEA.

(2) We revised the location and boundaries of critical habitat Subunit 1B (Agua Tibia Mountain Foothills) on the CNF to reflect updated location information provided by the National Forest. Revised Subunit 1B is in a new location and encompasses approximately 1 ac (<1 ha) of Federal land managed by the CNF, rather than a total of 22 ac (9 ha)—17 ac (7 ha) of United States Forest Service (USFS) land and 5 ac (2 ha) of private land—as originally proposed. Accordingly, we have revised the subunit to reflect this new information (please refer to the Proposed Critical Habitat Designation section of this final rule).

(3) We reevaluated areas previously determined to contain the physical and biological features essential to conservation of *Berberis nevinii* in subunits bordering Vail Lake. We removed areas that do not contain these essential features due to lake-level fluctuations and recurrent, episodic inundation that has lasted for relatively long periods of time. These revisions (as described in the October 17, 2007, notice of availability (72 FR 58793)), along with removing the 328 ft (100 m) grids as described in item (1) above that further refined these two subunits, reduced the area meeting the definition of critical habitat within proposed Subunit 1D (North of Vail Lake) from 22 ac (9 ha) to 5 ac (2 ha) and the area meeting the definition of critical habitat within proposed Subunit 1E (South of Vail Lake/Peninsula) from 251 ac (102 ha) to 112 ac (45 ha). We are excluding both subunits from this final designation under section 4(b)(2) of the

Act (see the Relationship of Critical Habitat to Habitat Conservation Plans (HCPs)—Exclusion Under Section 4(b)(2) of the Act section below for a detailed discussion).

(4) We made technical corrections and clarifications to some of the information found in the following sections of the proposed rule: Background, Primary Constituent Elements, Special Management Considerations or Protection, Proposed Critical Habitat Designation, and Exclusions Under Section 4(b)(2) of the Act for *Berberis nevinii*. These changes include new information or clarifications on the distribution of *B. nevinii*; reproduction strategy and life history; threats to the species and its habitat, particularly as they relate to transportation projects and land development; updated descriptions of the critical habitat units as described above; and a more comprehensive description of the relationship of critical habitat to the approved Western Riverside County MSHCP and the exclusion of private lands covered by this plan.

Critical Habitat

Critical habitat is defined in section 3 of the Act as:

(i) 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

(a) Essential to the conservation of the species and

(b) Which may require special management considerations or protection; and

(c) Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means the use of all methods and procedures that are necessary to bring any endangered or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, translocation, and in the extraordinary case where population pressures within a given ecosystem cannot otherwise be relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the prohibition against Federal agencies

carrying out, funding, or authorizing the destruction or adverse modification of critical habitat. Section 7(a)(2) of the Act requires consultation on Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by private landowners. Where a landowner requests federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) would apply, but even in the event of a destruction or adverse modification finding, the landowner's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time of listing must contain the physical or biological features that are essential to the conservation of the species, and be included only if those features may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (i.e., areas on which are found the PCEs laid out in the appropriate quantity and spatial arrangement for the conservation of the species). Under the Act, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed as critical habitat only when we determine that those areas are essential for the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and

with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not promote the recovery of the species.

Areas that are important to the conservation of the species, but are outside the critical habitat designations, will continue to be subject to conservation actions that we and other Federal agencies implement under section 7(a)(1) of the Act. Areas that support populations are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if information available at the time of these planning efforts calls for a different outcome.

Primary Constituent Elements (PCEs)

In accordance with section 3(5)(A)(i) of the Act and the regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species that may require special

management considerations or protection. We consider the physical or biological features to be the PCEs laid out in the appropriate quantity and spatial arrangement for the conservation of the species. The PCEs include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, and rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

We derive the PCEs required for *Berberis nevadensis* from its biological needs as described below and in the proposed critical habitat designation published in the **Federal Register** on February 6, 2007 (72 FR 5552, pp. 5558-5561). Additional information can also be found in the final listing rule published in the **Federal Register** on October 13, 1998 (63 FR 54956).

Space for Growth and Reproduction

Berberis nevadensis has a limited natural distribution; it typically occurs in small stands (less than 20 individuals, and often only one or two) in scattered locations in Los Angeles, San Bernardino, and Riverside Counties, California, with the largest native occurrence (as defined by CNDDDB) consisting of several stands and totaling about 134 individuals to the south of Vail Lake in Riverside County (Boyd 1987; CNDDDB 2007). Within these areas, *B. nevadensis* requires appropriate soils, topography, cover, and drainage within the landscape to provide space, food, water, air, light, minerals, or other nutritional or physiological requirements for individual and population growth and reproduction.

Characterizing *Berberis nevadensis* habitat is difficult due to the varied soils, bedrock substrates, and topography on which this species naturally occurs. Additionally, this species is known to tolerate a wide range of environmental conditions in cultivation (Mistretta and Brown 1989, p. 6). *Berberis nevadensis* typically occurs at elevations from 900 to 2,000 ft (300 to 650 m) (63 FR 54956), but most native occurrences are between 1,400 and 1,700 ft (427 to 518 m) in elevation (Boyd 1987, p. 2; CNDDDB 2007). One native occurrence on the Big Oak Mountain summit north of Vail Lake in Riverside County is at approximately 2,700 ft (823 m)

elevation, and scattered naturalized occurrences are found outside the 900- to 2,000-foot (300- to 650-m) elevation range (Boyd 1987, pp. 42, 75; CNDDDB 2007). *Berberis nevinii* has been found in varied topography from nearly flat sandy washes, terraces, benches, and canyon floors to gravelly wash margins, steeply-sloped banks of drainages, steep rocky slopes, ridges, and mountain summits (CNDDDB 2007).

Based on 1987 field surveys, native *Berberis nevinii* occurring on slopes in Scott Canyon and south of Vail Lake were found in areas with slopes of 19 to 34 degrees (Boyd 1987, pp. 7, 45, 62, 65, 68). Other *B. nevinii* plants occurring on slopes in the Vail Lake and Oak Mountain area generally occupy slopes of less than 34 degrees, based on Service GIS data (2006). Introduced (i.e., nonnative) occurrences are known to grow on steeper slopes (e.g., 40 to 50 degrees) in San Francisquito Canyon (Boyd 1987, p. 7). *Berberis nevinii* generally occurs on north, northeast, or northwest-facing slopes; however, exceptions to this have been noted, including several occurrences, both native and naturalized, found on south and west-facing slopes (Boyd 1987, pp. 7, 40, 77; Boyd et al. 1989, p. 24; Soza and Boyd 2000, p. 22; CNDDDB 2007).

Berberis nevinii is found on a variety of soils and bedrock substrates. Native occurrences appear to be strongly associated with alluvial soils or soils derived from nonmarine sedimentary based substrates, especially sandy arkose (sandstone derived from granitic material) (Boyd 1987, p. 7; Boyd and Banks 1995, unpaginated; Soza and Boyd 2000, p. 25). Most of the plants at Vail Lake are found in small stands on Temecula arkose soils around the southern end of the lake, with scattered individuals in the "badlands" to the southeast and southwest (Boyd and Banks 1995, unpaginated). Several small, isolated stands on the south flank of Big Oak Mountain are associated with metasedimentary substrates and springs or seeps (Boyd et al. 1989, p. 14; Soza 2003, unpaginated), and two plants at the Big Oak Mountain summit occur on heavy adobe or gabbro type soils with high water-holding capacity formed from metavolcanic geology (Mesozoic basic intrusive rock) (Soza 2003, unpaginated). The CNF occurrence is found at the contact between sedimentary (arkose) and metasedimentary substrates (Boyd and Banks 1995, unpaginated). *Berberis nevinii* has also been found growing on Pelona schist outcrops and granitic knolls (Boyd 1987, p. 7; Soza and Boyd 2000, p. 22).

Overlying occurrence polygons with Natural Resource Conservation Service soils data, native *Berberis nevinii* occurrences appear to be associated with the following soil series:

- Riverwash at the Lopez Canyon site in Los Angeles County;
- Sandy loam of the Saugus series in Scott Canyon and coarse sandy loam of the Metz series from the San Timoteo Canyon location in San Bernardino County; and
- At least 17 different soil series in the Vail Lake and Oak Mountain area in Riverside County, including Monserate sandy loams; Hanford coarse sandy loams; fine sandy loams of the Arlington and Greenfield, Pachappa, and Cajalco series; Cajalco rocky fine sandy loams; rocky loams of the Lodi and Las Posas series; and loams of the Las Posas, San Timoteo, and San Emigdio series (Service GIS data 2006).

Additional soil series found within mapped *B. nevinii* occurrences include gullied land and riverwash primarily south of Vail Lake, and badlands to the north and southeast of Vail Lake. Occurrences north of Vail Lake on the south slopes of Big Oak Mountain and its summit are mapped primarily as Auld clay, 8 to 15 percent slopes; Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded; and Las Posas loam and rocky loam, 8 to 15 percent slopes, eroded. Based on the revised location information received during the public comment period, the *B. nevinii* site on the CNF south of Vail Lake is now mapped as rough broken land and Vasalia gravelly sand loam, with 5 to 9 percent slopes (Service GIS data 2007).

Native occurrences of *Berberis nevinii* are generally found growing in well-drained soils, and are known from xeric slopes and rock outcrops. According to Lenz and Dourley (1981, as cited in Mistretta and Brown 1989, p. 5), *B. nevinii* is considered a drought-tolerant species, but it will also accept large amounts of water in cultivation without apparent damage. Observations of native occurrences suggest that, within its general habitat, *B. nevinii* may be associated with more mesic microhabitats. Niehaus (1977, p. 2) noted that *B. nevinii* occurs mostly at the margins of dry washes in or below the foothill zone, but is not present in the driest portion of a wash. At some sites, *B. nevinii* is associated with species such as *Lepidospartum squamatum* (scale-broom) and *Prunus ilicifolia* (holly-leaved cherry), which require groundwater (Niehaus 1977, p. 2). Many of the plants in the Vail Lake area are growing on mesic north- or northwest-facing slopes. Several stands

are in canyons draining the south flank of Big Oak Mountain and are associated with springs or seepages (Boyd et al. 1989, p. 14). The two plants on the summit of Big Oak Mountain are on clay soils with a high water-holding capacity. In the late spring and early summer, this site may receive greater moisture in the form of condensation from intrusion of marine air (Soza 2003, unpaginated). Information received by a peer reviewer of the proposed critical habitat rule appears to support this association with mesic microhabitats, as it was noted that recruitment of *B. nevinii* is typically into relatively mesic chaparral sites (White 2001, p. 36).

Berberis nevinii occurs in association with the following plant communities: alluvial scrub, cismontane (e.g., chamise) chaparral, coastal sage scrub, oak woodland, and/or riparian scrub or woodland (Boyd 1987, pp. 2, 7; Boyd 1989, pp. 6–8; 63 FR 54958; CNPS 2001, p. 96; CNDDDB 2007). Native *B. nevinii* in Lopez Canyon, Scott Canyon, and San Timoteo Canyon, as well as many of those found in the Vail Lake and Oak Mountain area, occur within the California Wildlife Habitat Relationships (CWHR) landcover described as coastal scrub or mixed chaparral (Service GIS data 2006). *Berberis nevinii* is occasionally found in coastal oak woodland in the Vail Lake/Oak Mountain area, characterized by open to dense stands of the large evergreen *Quercus agrifolia* (coast live oak) in close association with surrounding scrub vegetation (Boyd et al. 1989, p. 7). In the Vail Lake area, this woodland type is found primarily in sandy washes, benches, and canyons on north-facing slopes, near ephemeral stream channels, or associated with springs (Boyd et al. 1989, pp. 7–8). The San Francisquito site, where *B. nevinii* has apparently naturalized, also has some coastal oak woodland, and *Q. agrifolia* is locally common south of *B. nevinii* in the canyon bottom at the Lopez Canyon site (Soza and Boyd 2000, pp. 23, 26). Several stands in the Vail Lake area occur within the CWHR landcover described as valley foothill riparian, and several occurrences are also partly characterized as annual grassland (Service GIS data 2006). The Scott Canyon site is described as having an abundance of annual grasses (Boyd 1987, pp. 44–48, CNDDDB 2007).

Extant, native occurrences of *Berberis nevinii* are often found in association with one or more of the following chaparral and coastal sage scrub species: *Eriogonum fasciculatum* (California buckwheat), *Artemisia californica* (California sagebrush), *Adenostoma fasciculatum* (chamise), *Rhus ovata*

(sugar bush), *R. trilobata* (skunkbrush), *R. integrifolia* (lemonadeberry), *Salvia mellifera* (black sage), *Sambucus mexicana* (elderberry), *Prunus ilicifolia* (hollyleaf cherry), *Rhamnus crocea* (spiny redberry), and *Quercus berberidifolia* (scrub oak) (Boyd 1987, p. 2; CNDDDB 2007). Several native occurrences are associated with coastal oak woodland or riparian/alluvial scrub vegetation, such as *Quercus agrifolia*, *Populus fremontii* (Fremont cottonwood), *Salix laevigata* (red willow), *Platanus racemosa* (western sycamore), *Baccharis glutinosa* (mule-fat), or *Lepidospartum squamatum* (CNDDDB 2007). Boyd (1987, p. 2) has noted that certain desert floral elements such as *Encelia farinosa* (brittlebush), *Chrysothamnus nauseosus* (rubber rabbitbrush), *Artemisia tridentata* (sagebrush), *Chilopsis linearis* (desert willow), *Yucca schidigera* (Mojave yucca), *Opuntia parryi* (snake cholla), and *Atriplex canescens* (fourwing saltbush) are often characteristic of the general area and many of the specific sites where *B. nevinii* occurs in the vicinity of Vail Lake. The presence of typically desert floral elements mixing with cismontane chaparral shrubs likely reflects the transitional nature of these sites between the cismontane area to the west and the Colorado Desert to the east (Boyd et al. 1989, p. 4). One native occurrence is on relatively flat clay lenses in an open grassland area with chaparral nearby. Associated plant species include *Chenopodium californicum* (pigweed), *Avena fatua* (wild oat), *Harpagonella palmeri* (Palmer's grappling hook), *Plantago erecta* (California plantain), *Convolvulus simulans* (bindweed), *Galium porrigens* (climbing bedstraw), and *Delphinium* sp. (Larkspur) (Wallace 2006b, p. 1).

Several observers have noted that seedlings and immature *Berberis nevinii* tend to occur in areas with some measure of protection, either in the shade or cover of another plant (Boyd 1987, pp. 77–78; Mistretta and Brown 1989, p. 10). This suggests the need for some relatively long fire-free period to allow for canopy growth and the creation of conditions conducive to germination, establishment, and recruitment of *B. nevinii* into chaparral. This idea was also proposed by White (2001, p. 36) and reiterated in his review of our proposal (White 2007, p. 1). Boyd et al. (1987, p. 77) noted that mature cultivated individuals were located in areas exposed to full sunlight, and Reiser (2001, unpaginated) noted that mature *B. nevinii* shrubs frequently tower above associated subshrubs. Based on field observations, seedlings

may be shade tolerant, but that as *B. nevinii* matures, it may require more sunlight (Mistretta and Brown 1989, Attachment: "Report on the Population and Ecological Data of Mahonia nevinii" by Joy Nishida, p. 1). A similar shade and sunlight requirement has been noted for several other resprouting chaparral shrub species, where seedlings and saplings are found mostly in the shade of other plants and seldom in the open, but recruitment into the shrub population appears to require the later development of a canopy gap, such as may be created by a fire event (Keeley 1992, p. 1,206).

We have little information about pollinators, seed dispersal mechanisms, or the reproductive biology of this species. *Berberis nevinii* has loose clusters of bisexual yellow flowers that open between March and April, and fleshy, yellowish-red to red berries with plump, brown seeds that are present from May to July (Wolf 1940, unpaginated; Munz 1974, p. 245; Neihaus 1977, p. 1; Morris 2006). Species-specific information on pollinators for *B. nevinii* is lacking. Native bees in the following genera have been collected on species of *Berberis* native to North America: *Andrena*, *Osmia*, *Emphoropsis*, *Synhalonia*, *Melissodes*, and *Ceratina* (Krombein et al. 1979, vol. 2, pp. 1796, 1797, 1835, 2032, 2129, 2152, 2168, 2182). These are generalist taxa; however, their habitat requirements and home ranges relative to the native *Berberis* taxa have not been determined. According to the U.S. Department of Agriculture (2006), native *Berberis* species "provide significant forage for native bees." According to Mussen (2002), California's native *Berberis* species are "visited (and probably pollinated) by honey bees" (*Apis mellifera*).

The genus *Berberis* contains species that are both self-compatible and self-incompatible (Anderson et al. 2001, p. 227), and while we do not know if *B. nevinii* is self-incompatible, we can draw some conclusions based on observed levels of reproduction, or the lack thereof, at known occurrences. As noted by the peer reviewer for the proposed critical habitat rule, several occurrences consist of only a single plant that has existed for years or decades without reproducing (Mistretta and Brown 1989), suggesting a self-incompatible pollination system (White 2001, p. 36). If this is the case, recovery of this species may require pollen transfers among the occurrences with demonstrated low reproductive output.

Berberis nevinii does not appear to reproduce by vegetative means to any great extent if at all (Mistretta and

Brown 1989, p. 5; Boyd 2006); in other words, it does not regularly produce clones (genetically identical direct descendants) that are well separated from the parent individual through the process of rooting at nodes of slender elongate rhizomes, as is the case with some other members of the genus *Berberis*. According to White (2007, p. 1), the now-extirpated *B. nevinii* occurrence in San Timoteo Canyon, previously reported to reproduce vegetatively, was more likely resprouting from a large basal burl (refer to previous discussion of this terminology under the Species Description and Reproduction section above). Because vegetative reproduction appears to be uncommon, Mistretta and Brown (1989, p. 5) concluded that perpetuation of the species is likely dependent on its occasional production of viable seed.

Landscape Ecology and Population Demographics of Berberis nevinii

Many extant occurrences of *Berberis nevinii* are associated with chaparral or coastal sage scrub. Fire is a natural occurrence in southern California shrublands, and plants occurring in these vegetation communities are resilient or adapted to these types of disturbances (Keeley 1991, p. 84; Tyler 1996, p. 2,182). Postfire regeneration mechanisms among California shrubland species can generally be described as obligate seeding, obligate sprouting, or facultative sprouting (Kelly and Parker 1990, p. 114). Mature plants of obligate seeder species are typically killed by fire, and seeds are the only means of regeneration. Most have locally dispersed seeds that persist in the soil seed bank until dormancy is broken by an environmental stimulus, such as intense heat (Keeley 1991, p. 82). Plants of obligate sprouter species, on the other hand, are rarely killed by fire, but rather resprout from roots, lignotubers (burls), or epicormic buds (Kelly and Parker 1990, p. 114). These species have seeds that do not require fire for germination, but require fire-free periods for recruiting new seedlings (Keeley 1991, p. 82). In some species, postfire regeneration occurs by both sprouts and seeds (facultative sprouters), and fire-caused mortality is variable, likely due to characteristics of the individual fire (Kelly and Parker 1990, p. 114).

Based on additional information received through peer review of the February 6, 2007, proposed critical habitat rule (72 FR 5552), *Berberis nevinii* appears to be an obligate sprouter as defined above, and its life history matches Keeley's (1991)

description of the “fire resister” or “nonrefractory seed” syndrome (i.e., seeds germinate without fire-associated cues) (White 2007, p. 1). As stated in the proposed rule, *B. nevinii* resprouts following fire (Soza and Fraga 2003, p. 2; Sanders 2006, unpaginated; Mistretta and Brown 1989, p. 5). According to Soza and Boyd (2003, p. 2), Soza (2006, unpaginated), and the USFS (2005, p. 237), post-fire surveys on ANF and CNF reported *B. nevinii* regeneration by resprouting and recruitment from seeds. However, White (2007, p. 1), did not consider it likely that these seedlings would survive exposure during early post-fire years and would die before reaching reproductive maturity.

Because southern California shrublands are adapted to a natural fire regime, plants within these communities likely require such conditions for long-term survival (63 FR 54961). Comparison of the contemporary fire regime in southern California to that of the natural regime (i.e., pre-fire suppression) shows that fire frequency has increased in the lower coastal valley and foothill zone, and that high fire frequencies tend to occur in those areas where high human densities interface with relatively undeveloped landscape (Keeley et al. 1999, p. 1,831; Keeley and Fotheringham 2001, p. 1,545; Wells et al. 2004, p. 147; Keeley 2006, p. 382). However, fire suppression has kept fires in check so that most stands burn within the range of natural variation (Keeley 2006, p. 382). Coastal sage scrub and chaparral have the largest amount of area that has burned multiple times over the past century and have the highest potential fire frequencies of all vegetation community types; only coastal sage scrub clearly shows an increasing trend in area burned over this time period (Wells et al. 2004, pp. 148, 151).

Berberis nevinii's specific response to altered fire regimes (e.g., changes to fire frequency, timing, or intensity) is unknown (63 FR 54961). However, overly frequent fire on the landscape could potentially kill young *B. nevinii* before they reach their reproductive potential and may adversely affect mature *B. nevinii* (Boyd 1991, pp. 7, 9) by causing repeated resprouting that depletes stored resources faster than they can accumulate during fire-free periods (White 2007, p. 1). Repeated burnings over short intervals could eventually lead to type conversion of chaparral/shrublands to nonnative annual grassland (Boyd 1991, p. 9; Keeley et al. 1999, p. 1,831). This type conversion has been observed in areas surrounding urban centers (Keeley 2006,

p. 382). As noted above, the presence of a seed bank is inconsistent with the “non-refractory seed” (fire resistor) syndrome considered to be represented in *B. nevinii* (White 2007, p. 1); thus, overly frequent fires are not likely to adversely affect the soil seed bank for this species, as suggested in the proposed rule to designate critical habitat (72 FR 5560).

Life history characteristics and population demographics of *Berberis nevinii* are largely unknown and unstudied. *Berberis nevinii* shrubs are long-lived (>50 years) (Mistretta and Brown 1989, p. 5) with low reproductive rates due to sporadic production of fertile seed (Mistretta and Brown 1989, p. 5). It has been suggested that *B. nevinii* may be a paleoendemic relic (meaning that its present distribution is a remnant of a formerly wider distribution) (Reiser 2001, unpaginated), which could explain its limited (small and widely scattered) distribution and low reproductive rates in the wild (Soza 2003).

The ability of *Berberis nevinii* to stump sprout following disturbance (e.g., fire), as well as its great longevity, may play an important role in the persistence of the species. As discussed in Garcia and Zamora (2003, p. 921), there may be a population maintenance trade-off for long-lived plants between replacement of individuals by seeding and persistence of established plants. A persistence strategy may allow plants to survive through unfavorable conditions, potentially to reproduce again when conditions are more favorable (Garcia and Zamora 2003, p. 924). As mentioned previously, sexual or vegetative reproduction appears to be uncommon in many *B. nevinii* occurrences. However, because the species is long-lived, intermittent seed production over the lifespan of a shrub may be more important than annual seed production for perpetuating the species.

Primary Constituent Elements for Berberis nevinii

Based on our current knowledge of the life history, biology, and ecology of *Berberis nevinii* and the habitat requirements for sustaining the essential life history functions of the species, we have determined that *B. nevinii* requires the PCEs described below:

(1) Low-gradient (i.e., nearly flat) canyon floors, washes and adjacent terraces, and mountain ridge/summits, or eroded, generally northeast- to northwest-facing mountain slopes and banks of dry washes typically of less than 70 percent slope that provide space for plant establishment and growth;

(2) Well-drained alluvial soils primarily of non-marine sedimentary origin, such as Temecula or sandy arkose soils; soils of the Cajalco-Temescal-Las Posas soil association formed on gabbro (igneous) or latite (volcanic) bedrock; metasedimentary substrates associated with springs or seeps; and heavy adobe/gabbro-type soils derived from metavolcanic geology (Mesozoic basic intrusive rock) that provide the appropriate nutrients and space for growth and reproduction; and

(3) Scrub (chaparral, coastal sage, alluvial, riparian) and woodland (oak, riparian) vegetation communities between 900 and 3,000 feet (275 and 915 meters) in elevation that provide the appropriate cover for growth and reproduction.

This final designation is defined for the conservation of the physical and biological features essential to the conservation of the species, which support the life history functions of the species, through the identification of the appropriate quantity and spatial arrangement of areas containing the PCEs. Some units contain all of these PCEs and support multiple life processes, while some units contain only a portion of these PCEs, those necessary to support the species' particular use of that habitat. Because not all life history functions require all the PCEs, not all critical habitat units will contain all the PCEs.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the areas within the geographical area occupied by the species at the time of listing contain the physical or biological features essential to the conservation of the species, and whether these features may require special management considerations or protection. As stated in the final listing rule (63 FR 54956, October 13, 1998), threats to the species and its physical and biological features include urban development, off-road vehicle use, human recreation (e.g., horseback riding), highway projects, fire management strategies (suppression measures, brush clearing) that alter natural fire processes to which native plant communities are adapted, and the introduction of invasive, nonnative plants that may compete with *Berberis nevinii* or contribute to combustible fuel loads (63 FR 54961). These threats can directly or indirectly result in the loss, modification, degradation, or fragmentation of *B. nevinii* habitat, thereby eliminating or reducing potential habitat for seed production and germination, seedling

establishment, plant growth and maturation, and population growth. Individually or combined, these threats may require special management considerations or protection of the physical and biological features as addressed here and in more detail within the individual critical habitat unit descriptions that follow.

Urbanization, flood control measures, road widening, and habitat degradation from extensive recreational use have contributed to the loss of *Berberis nevinii* habitat and have apparently resulted in the extirpation of several occurrences, particularly in the San Fernando Valley of Los Angeles County (63 FR 54961). Urban development is currently the primary threat to *B. nevinii* habitat and occurrences in the vicinity of Vail Lake and Oak Mountain in Riverside County. Urbanization may destroy, degrade, fragment, or otherwise alter the topography, soil, and vegetation community structure in ways that make areas less suitable for *B. nevinii*. Land grading for residential development and road projects may affect the topography of the site (PCE 1); alter soil composition and structure (PCE 2); change vegetation community composition and structure through clearing or thinning of vegetation and the introduction of nonnative plants (PCE 3); increase erosion potential (PCE 1 and 2); and change hydrological (drainage and water infiltration) patterns, thereby decreasing the quality and extent of available habitat for *B. nevinii*. Additionally, urban development within or near *B. nevinii* habitat may increase the frequency of fire on the landscape due to increased combustible fuel loads that may result from the incursion and spread of annual nonnative grasses and an increased potential for fire ignition.

In the February 6, 2007, proposed rule (72 FR 5552), we focused primarily on potential indirect impacts of urbanization on *Berberis nevinii* habitat and occurrences in the vicinity of Vail Lake and Oak Mountain (72 FR 5565–5567). Urban development is not expected to directly impact the known occurrences of *B. nevinii* on Federal land in the Vail Lake and Oak Mountain area, although indirect impacts associated with increased urbanization may occur. On the other hand, *B. nevinii* habitat on private land in this area may be subject to some degree of residential development, as described below in the critical habitat subunit descriptions (see the Critical Habitat Designation section of this final rule). However, these private lands are located within the Criteria Area of the Western Riverside County MSHCP and are targeted, in

whole or in part, for acquisition and inclusion in the MSHCP Conservation Area as Additional Reserve Lands. Specifically, the conservation objectives of the MSHCP include conservation and management of at least 8,000 ac (3,238 ha) of suitable habitat, including all known locations of *B. nevinii* in the Vail Lake area (see the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below for a detailed discussion of the MSHCP).

Recreational activities may also impact the physical and biological features essential to the conservation of the species by destroying, degrading, fragmenting, or otherwise altering the topography, soil, and vegetation community in ways that make areas less suitable for *Berberis nevinii*. For example, off-highway vehicle use, hiking, camping, horseback riding, and recreational facility development in or near *B. nevinii* occurrences could alter or destroy surface and subsurface structure through trampling and clearing or thinning of vegetation (PCE 3), the introduction of nonnative plants (PCE 3), soil disturbance or compaction (PCE 2), and increased erosion and changes to hydrological (drainage and water infiltration) patterns that may in turn affect the topography, soil, and vegetation of the site (PCE 1, 2, and 3).

Activities associated with fire management, such as fuel treatments, prescribed burns, and wildfire suppression, may also impact the physical and biological features essential to the conservation of the species. The creation of fuel breaks, brush clearing or thinning, and the use of heavy equipment and off-road vehicles for fire management could physically remove or disturb soils and alter soil composition (PCE 2), remove or destroy vegetation (PCE 3), increase erosion, and alter the topography (PCE 1) and hydrologic patterns in or near *Berberis nevinii* occurrences. Fire management activities could facilitate the incursion or spread of invasive, nonnative plants by potentially dispersing seeds and creating (disturbance) conditions that increase the competitive edge of nonnative species over native species, thereby altering the composition of the vegetation community (PCE 3). As pointed out in the proposed critical habitat rule (72 FR 5552), vegetation community composition and structure could be altered by fire management activities such as prescribed fires that are too frequent or that occur at times of the year atypical of the natural fire regime, or by fire suppression that allows overgrowth of high canopy cover,

limiting or eliminating plant species that require full or partial sun from the plant community (72 FR 5563). *Berberis nevinii*'s life history characteristics indicate that it likely recruits into chaparral during fire-free periods and may require long intervals between fires for recruitment and population increases; thus, overly frequent fire is a substantial and immediate threat to this species (White 2007, p. 1).

While highway projects were identified in the final listing rule (63 FR 54956, October 13, 1998) and proposed critical habitat rule (72 FR 5552; February 6, 2007) as a threat to *Berberis nevinii*, we do not anticipate that this activity will affect designated critical habitat in the foreseeable future. Specifically, the proposed critical habitat rule identified the proximity of Highway 79 as a potential threat to the *B. nevinii* occurrence and habitat on the CNF (Subunit 1B) in part due to proposed highway widening and realignment activities (72 FR 5565). However, we no longer anticipate that these activities will affect Subunit 1B because: (1) There are currently no plans to widen the portion of State Route 79 closest to Subunit 1B, and (2) the revised subunit is now more than 525 ft (160 m) south of the highway, which is far enough away that impacts to the subunit from construction or widening activities are unlikely.

Based on information provided for the economic analysis, nonnative *Arundo donax* (*Arundo*) and other invasive grasses are present in Subunit 1B, and the CNF anticipates an eradication effort based on the weed management strategy in the USFS' Revised Land Management Plan for the Four Southern California National Forests (USFS 2005). Additional information obtained on water storage at Vail Lake indicates that lake level fluctuations could affect proposed subunits bordering Vail Lake (specifically, proposed subunits 1D and 1E). While we revised proposed critical habitat boundaries for these subunits based on the currently permitted storage capacity of Vail Lake (see the Criteria Used to Identify Critical Habitat section in this final rule), fluctuating water levels that surpass permitted storage levels and lake storage capacity could still affect *Berberis nevinii* in subunits that border Vail Lake. However, the occurrences that are located closest to Vail Lake have not been inundated or affected by rising water levels and fluctuations in the recent past (Boyd 2007, p. 1), and we do not anticipate that any *B. nevinii* individuals in this area will be affected.

Criteria Used To Identify Critical Habitat

Berberis nevinii naturally occurs in small, isolated stands across its geographic range, with several known occurrences consisting of only a single large and presumably very old individual. At most sites, there is little to no evidence of reproduction. The Vail Lake and Oak Mountain area in western Riverside County has the highest concentration of native *B. nevinii*, representing several size (age) classes. Plants occur in numerous stands scattered throughout the area, with the largest number of plants located at the south edge of Vail Lake and on the peninsula protruding into the lake. The long-term conservation of *B. nevinii* will depend upon the protection of these core native occurrences and the maintenance of ecological functions within these sites.

We delineated critical habitat for *Berberis nevinii* using the following criteria: (1) Areas occupied by naturally occurring individuals of the species at the time of listing and areas that are currently occupied by naturally occurring individuals; (2) occupied areas within the historical range of the species; (3) areas containing one or more of the PCEs for the species; and (4) areas currently occupied by more than two *B. nevinii* plants that show evidence of reproduction (i.e., fruits with seed, seedlings, or plants of various size or age classes) on site. For sites where there was no information available on reproduction or size/age class distribution, we assumed that reproduction had occurred at some point in the past if multiple *B. nevinii* plants were present. As discussed below, we also considered the ecological uniqueness of sites.

We did not include sites with only one individual or sites with two individuals of the same size/age class because this condition may reflect a lack of successful reproduction and therefore the long-term viability of these occurrences is questionable. As discussed in the proposed critical habitat rule, many *Berberis nevinii* occurrences consist of very few individuals, and sometimes consist of only one or two large (presumably old) shrubs that have persisted on a site for many decades without evidence of reproducing. Because of the lack of evidence of reproduction for these small occurrences, and the low reproductive output of mature plants and limited numbers of surviving juvenile plants in general, we do not consider sites with only one plant or two plants of the same size/age class to represent an occurrence

that exhibits a measurable degree of reproductive success that is likely to contribute to the recovery of the species.

As explained in the Primary Constituent Elements section of this final rule, a self-incompatible pollination system has been suggested (White 2001, p. 36). Additionally, *Berberis nevinii* does not appear to reproduce by vegetative means (Mistretta and Brown 1989, p. 5; Boyd 2006), as is the case with some other members of the genus *Berberis*. Therefore, pollen transfers from plants in different occurrences are likely necessary for reproduction to occur in sites supporting only one plant or two plants of the same size/age class. The habitat requirements and home ranges of potential pollinator species relative to native *Berberis* occurrences have not been determined; however, the lack of evidence of reproduction in these small *B. nevinii* occurrences suggests that pollination may not be occurring or another biological constraint is impacting the occurrences. The fact that reproduction has not been in evidence at these sites in several decades, if at all, suggests that they may not be viable occurrences over the long term. Whether or not these occurrences may contribute to recovery of the species is unknown at this time. We will continue to explore the potential conservation value of these small occurrences, and consider these occurrences in future recovery actions as appropriate.

Whether naturalized occurrences will play a role in conservation of the species is also unknown. However, the naturalized occurrences represent some of the largest (in terms of number of individuals) and most vigorously reproducing occurrences of the species, and could potentially play a role in preserving genetic diversity. At least one occurrence supporting naturalized plants (San Francisquito Canyon, Los Angeles County) may contain an individual or descendants of an individual that originated from a nearby extirpated occurrence (i.e., the San Fernando Valley, Los Angeles County). Thus, we will continue to explore the potential conservation value of introduced occurrences, and consider these occurrences in future recovery actions as appropriate.

We are aware of 39 records for *Berberis nevinii* rangewide documented by the CNDDDB (2007). However, we do not have adequate information to determine the status of six of these occurrences, as described in the Criteria Used to Identify Critical Habitat sections of the proposed rule (72 FR 5552; February 6, 2007, p. 5562), and no additional information regarding these

particular occurrences was provided to us during the public comment period. We considered 19 of the CNDDDB records for *B. nevinii* to be extant, native occurrences, and all of these were known at the time of listing, although each was not specifically described in the final listing rule (63 FR 54956, October 13, 1998). The majority of the extant, native occurrences are in Riverside County in the vicinity of Vail Lake and Oak Mountain, described in the final listing rule as one of the primary geographical areas occupied by the species. Only six of the CNDDDB *B. nevinii* occurrences, all in Riverside County in the vicinity of Vail Lake and Oak Mountain, met our criteria for designating critical habitat. Five of the six occurrences consist of more than two individuals, and evidence of reproduction (multiple size/age classes, seedlings, and/or fruit with seed) is known for three of the occurrences (CNDDDB element occurrences 24, 31, and 38). We do not know if reproduction has occurred at the other three sites (CNDDDB element occurrences 32, 35, and 36), but we believe that it is possible given that these occurrences represent some of the largest groupings of the species.

As discussed in the Background section of the proposed rule (72 FR 5552; February 6, 2007), the Western Riverside County MSHCP database contains 32 records of extant *Berberis nevinii* occurrences from the vicinity of Vail Lake and Oak Mountain alone, as well as one record from the Soboba Badlands (72 FR 5555). However, many of the MSHCP records overlap and some appear to duplicate CNDDDB records. In contrast to the CNDDDB records, the MSHCP records largely do not contain accompanying data, such as number of plants, origin (native versus introduced), and habitat associations, making it impossible to accurately quantify the number of distinct occurrences or plants in this area (Service 2004, pp. 330–331) or determine the specific location of many of these occurrences. Therefore, we did not rely on the MSHCP occurrence records for determining critical habitat, but rather we sought additional information to clarify these records during the public comment period. We did not receive any additional information in this regard.

We evaluated whether geographically peripheral (e.g., Los Angeles and San Bernardino Counties) native occurrences would fit into our criteria for identifying critical habitat. Despite the biological conservation arguments raised by Lesica and Allendorf (1995; pp. 753, 754) to conserve peripheral

populations, we found that these *Berberis nevinii* occurrences did not meet our criteria for designation of critical habitat because they consisted of very few individuals (often only one) and did not appear to be reproducing. For example, the Lopez Canyon (CNDDDB 2007 element occurrence 43) and Scott Canyon (CNDDDB 2007 element occurrence 5) occurrences both consist of single large (old) individuals with no signs of past or current reproduction by seed. The San Timoteo Canyon occurrence (CNDDDB element occurrence 4) has an unknown number of individuals (potentially only one), and reproduction has likely not occurred at this site in many decades (Sanders 2006, unpaginated).

We also considered the ecological uniqueness of sites because occurrences within unique habitats may harbor genetic diversity that allows for persistence in these areas (Lesica and Allendorf 1995, p. 757). We determined that ecologically unique habitats were essential to conservation of *Berberis nevinii*, and we included these areas in designated critical habitat if they were occupied by more than a single large (i.e., mature) individual. Areas occupied by only one large individual represent sites where regeneration is not occurring; thus, we did not consider these areas to be essential to conservation of the species.

We also evaluated whether maintaining adjacent unoccupied habitat or corridors between occurrences may be important to facilitate and allow for pollen and seed dispersal within and between stands of *Berberis nevinii*. Available data indicates that the genus *Berberis* is likely pollinated by generalist bee taxa. However, we do not have any information that suggests a certain quantity of habitat is necessary to maintain the pollinator species associated with *B. nevinii*.

We delineated critical habitat unit boundaries in the following manner:

(1) We identified all areas occupied by the species at the time of listing or currently occupied by *Berberis nevinii* using location data in the CNDDDB (2007);

(2) We classified each of these occurrences as to their origin (native or cultivated), status (extant or extirpated), number of plants, and evidence of reproduction, where possible;

(3) We determined which occurrences contain the physical and biological features essential to the conservation of the species using the criteria described above; and

(4) Using GIS, we overlaid the occurrences identified in number 3

above on aerial imagery and compared the polygon locations for these occurrences with location information from field surveys to narrow and refine the location of *B. nevinii* occurrence polygons. Finally, using aerial photography, we removed areas that did not contain any of the PCEs for the species (e.g., aquatic habitat in Vail Lake).

As described in the Summary of Changes from Proposed Rule section above, in the proposed rule we overlaid 100 m (328 ft) square UTM grids over all essential habitat to delineate the proposed critical habitat boundaries and produce UTM coordinates. In this final rule we delineated critical habitat unit boundaries by screen-digitizing the habitat polygons that we determined contain the physical and biological features essential to the conservation of *Berberis nevinii*. The delineation of critical habitat boundaries through digitizing habitat polygons versus applying 328 ft (100 m) square grids over the areas we determined to be essential to the species reduced the total area from approximately 361 ac (146 ha), which was an overestimate of the area of essential habitat, to 173 ac (70 ha), which is the actual area we determined to be essential to the conservation of the species at the time of the proposed rule.

When delineating proposed critical habitat, we also tried to remove areas from proposed subunits near Vail Lake that were identified as being under water, and therefore did not contain the physical and biological features (72 FR 5562). We based subunit delineations in the proposed rule on USGS 1-meter resolution color-balanced, color infrared aerial photography acquired in May to June 2002 for the Vail Lake area, western Riverside County. For this final rule, we reevaluated proposed critical habitat subunits bordering Vail Lake based on updated aerial photographs and Vail Lake volume data provided by Rancho California Water District (RCWD) during the development of the economic analysis. We removed areas along the shoreline from subunits 1D (North of Vail Lake) and 1E (South of Vail Lake/Peninsula) that do not contain the physical and biological features required by *Berberis nevinii* and are not occupied by the species due to lake-level fluctuations and recurrent, episodic inundation, sometimes for relatively long periods of time based on criteria discussed below. We published these revisions to proposed critical habitat and reopened the comment period in conjunction with the notice of availability for the DEA, published in

the **Federal Register** on October 17, 2007 (72 FR 58793).

As discussed in the October 17, 2007 (72 FR 58793) notice of availability, water levels at Vail Lake can fluctuate greatly, depending on the amount of local runoff reaching the lake, both within any given year and annually, frequently exceeding the 2002 water levels for relatively long periods of time. The RCWD, the entity that owns, operates, and manages Vail Dam and Vail Lake, has a surface water storage permit in the lake for up to 40,000 acre-feet (49,339 cubic-meters) from November 1 to April 30, annually. Thus, we revised proposed critical habitat boundaries for subunits bordering Vail Lake based on lake levels at RCWD's permitted storage capacity. This process, coupled with the removal of the 100 m (328 ft) square grids, resulted in the removal of approximately 17 ac (7 ha) from proposed Subunit 1D and approximately 139 ac (56 ha) from proposed Subunit 1E, leaving approximately 5 ac (2 ha) and approximately 112 ac (45 ha) in proposed subunits 1D and 1E, respectively.

Water volume in Vail Lake has been known to exceed 40,000 acre-feet (49,339 cubic-meters), even filling and surpassing lake storage capacity (50,000 acre-feet (61,674 cubic-meters)) with water flowing over the spillway. The creation of Vail Lake in 1948 may have resulted in the loss of some *Berberis nevinii* individuals; however, the occurrences that are now located closest to Vail Lake have not been inundated or affected by rising water levels and fluctuations in the recent past (Boyd 2007). Thus, the revisions to proposed critical habitat subunits 1D and 1E are not likely to result in *B. nevinii* individuals in this area falling outside the revised subunit boundaries. These revisions will, on the other hand, more accurately represent *B. nevinii* habitat in subunits 1D and 1E.

We are designating critical habitat in areas that contain naturally occurring *Berberis nevinii* plants (i.e., not of cultivated origin or consisting of outplanted individuals). We have determined these areas were occupied at the time of listing and are the appropriate quantity and spatial arrangement of areas containing the PCEs to constitute the physical and biological features essential to the conservation of the species, which support the life history functions of the species.

When determining the critical habitat boundaries for this final rule, we made every effort to avoid including developed areas, such as lands covered

by buildings, pavement, and other structures, because such lands lack PCEs for *Berberis nevinii*. The scale of the maps we prepared under the parameters for publication within the *Code of Federal Regulations* may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the map of this critical habitat rule have been excluded by text in this final rule. Therefore, a Federal action involving these lands would not trigger

section 7 consultation with respect to critical habitat and the requirement of no adverse modification, unless the specific action may affect adjacent critical habitat.

Final Critical Habitat Designation

We are designating one unit with two subunits as critical habitat for *Berberis nevinii*. The critical habitat areas identified below constitute our current best assessment of areas that meet the definition of critical habitat for *B.*

nevini. Table 1 outlines the area determined to meet the definition of critical habitat, including the areas excluded from the final critical habitat designation, and the two areas designated as final critical habitat for *B. nevini*. A brief discussion of each area designated as critical habitat is provided in the unit descriptions below. Additional detailed documentation concerning the essential nature of these areas is contained in our supporting record for this rulemaking.

TABLE 1.—AMOUNT OF LAND DETERMINED TO MEET THE DEFINITION OF CRITICAL HABITAT, AMOUNT OF LAND EXCLUDED FROM THE FINAL CRITICAL HABITAT DESIGNATION, AND AMOUNT OF LAND DESIGNATED CRITICAL HABITAT FOR *Berberis nevini*

[Area is displayed in acres (ac) (hectares (ha)), rounded to the nearest whole number. Numbers may not sum due to rounding]

Critical habitat unit	Land ownership by type	Land meeting the definition of critical habitat	Land excluded from critical habitat	Critical habitat
Unit 1. Agua Tibia/Vail Lake:				
1A. Big Oak Mountain Summit	BLM	5 ac (2 ha)	0 ac (0 ha)	5 ac (2 ha)
1B. Agua Tibia Mountain Foothills	USFS	1 ac (1 ha)	0 ac (0 ha)	1 ac (1 ha)
1C. South Flank Big Oak Mountain	Private	39 ac (16 ha)	39 ac (16 ha)	0 ac (0 ha)
1D. North of Vail Lake	Private	5 ac (2 ha)	5 ac (2 ha)	0 ac (0 ha)
1E. South of Vail Lake/Peninsula	Private	112 ac (45 ha)	112 ac (45 ha) ..	0 ac (0 ha)
1F. Temecula Creek East	Private	11 ac (4 ha)	11 ac (4 ha)	0 ac (0 ha)
Total		173 ac (70 ha)	167 ac (67 ha) ..	6 ac (3 ha)

Section 10(a)(1)(B) of the Act authorizes us to issue permits for the take of listed animal species incidental to otherwise lawful activities. An incidental take permit application must be supported by a habitat conservation plan (HCP) that identifies conservation measures that the permittee agrees to implement for the covered species to minimize and mitigate the impacts of the requested incidental take. Often HCPs also incorporate conservation measures to benefit listed plant species, although take of plant species is not prohibited under the Act. We often exclude non-Federal public lands and private lands that are covered by an existing operative HCP and executed implementation agreement (IA) under section 10(a)(1)(B) of the Act from designated critical habitat where we determine that the benefits of exclusion outweigh the benefits of inclusion as discussed in section 4(b)(2) of the Act. Based on such a determination, we are excluding the private lands covered under the Western Riverside County MSHCP from the final designation of critical habitat for *Berberis nevini* (see the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section for a detailed discussion).

Below, we present a brief description of the areas included in the final

designation and reasons why these areas meet the definition of critical habitat for *Berberis nevini*.

Unit 1: Agua Tibia/Vail Lake

Unit 1 comprises approximately 6 ac (3 ha) and is divided into two subunits: Big Oak Mountain Summit (1A) and Agua Tibia Mountain Foothills (1B). The lands in Unit 1 were occupied at the time of listing, contain the physical and biological features essential to the conservation of *Berberis nevini*, and may be important for maintaining genetic diversity for the species as they include occurrences in ecologically unique areas.

Subunit 1A: Big Oak Mountain Summit

Subunit 1A consists of approximately 5 ac (2 ha) of Federal land managed by the BLM on Big Oak Mountain to the north of Vail Lake in southern Riverside County. Two *Berberis nevini* individuals of different sizes (ages) occur in this subunit on the summit of Big Oak Mountain at approximately 2,700 ft (823 m) elevation (i.e., the lower edge of the marine layer) (PCE 1 and 3). One individual is an old plant that is covered in lichens, and the other individual is considerably smaller and at some distance to the northeast of the older plant. This location is considered unusual (i.e., ecologically unique) for the species in that it is at higher

elevation and on relatively flat clay lenses consisting of heavy adobe/gabbro type soils with high water-holding capacity, derived from Mesozoic basic intrusive rock (PCE 2) (Soza 2003, unpaginated). Soils in this area are classified primarily as Auld clay, 8 to 15 percent slopes, and Las Posas loam, 8 to 15 percent slopes, eroded (PCE 2) (Service GIS data 2006). This occurrence is located in an open grassland area with chaparral nearby. Associated plant species include *Chenopodium californicum*, *Avena fatua*, *Harpagonella palmeri*, *Plantago erecta*, *Convolvulus simulans*, *Galium porrigens*, and *Delphinium* sp.

We are designating this subunit as critical habitat even though it is occupied by only two *Berberis nevini* plants because it represents an ecologically unique site for the species and contains the physical and biological features essential to the conservation of *B. nevini*. Additionally, this site contains naturally occurring *B. nevini* of different sizes (ages). Because this occurrence is on an ecologically unique site, this subunit may be important in terms of preserving genetic diversity throughout the range of the species. *Berberis nevini* occupied this subunit at the time of listing (63 FR 54956; October 13, 1998).

Bureau of Land Management land on Big Oak Mountain consists of three small parcels totaling 888 ac (360 ha) surrounded by private land. The primary threats to *Berberis nevini* habitat in this area are the indirect effects associated with urban and residential development on private lands adjacent to BLM lands, such as increased human recreation; incursion or spread of invasive, nonnative plants; and changes to the natural fire regime (i.e., increased ignitions and fire frequency, and shortened fire return intervals that can lead to type conversion of shrublands to annual grasslands). The BLM Resource Management Plan indicates that these parcels are closed to motorized vehicles and livestock grazing (BLM 1994, p. 28). However, special management considerations or protection for the physical and biological features may be needed to minimize disturbance to the vegetation and soils within this subunit; control invasive, nonnative plants; and maintain the natural hydrologic and fire regime of the area resulting from urban and residential development.

Subunit 1B: Agua Tibia Mountain Foothills

Subunit 1B consists of approximately 1 ac (<1 ha) of federally-owned land managed by the USFS on the CNF near the Agua Tibia Wilderness Area in southern Riverside County, California. Five *Berberis nevini* individuals are known from this area and are located at the edge of a stream channel (PCE 1) growing in association with coast live oak and riparian woodland species (PCE 3). Nearby chaparral includes such species as *Quercus berberidifolia*, *Adenostoma fasciculatum*, and *Haplopappus squarrosus*, and nearby desert species include *Yucca schidigera* (CNDDDB 2007). These *B. nevini* plants are growing under a canopy of *Quercus agrifolia* and *Platanus racemosa* with the following species: *Heteromeles arbutifolia*, *Q. berberidifolia*, *Elymus condensatus*, *Mimulus aurantiacus*, *Lonicera subspicata*, *Pterostegia drymarioides*, and *Epilobium canum*. Soils in this area are classified as rough broken land and Visalia gravelly sandy loam, with 5 to 9 percent slopes (PCE 2) (Service GIS data 2007).

We are designating this subunit as critical habitat because it contains the physical and biological features essential to conservation of *Berberis nevini* and it contains a relatively large natural occurrence of the species. Additionally, Service personnel visited this site in June 2006 while *B. nevini* was in fruit and found that several of the fruits had three to four seeds, which

may be significant for a species that appears to rarely set seed. *Berberis nevini* occupied this subunit at the time of listing, as identified in the final listing rule (63 FR 54956, October 13, 1998).

The *Berberis nevini* occurrence on the CNF is not as well protected as the occurrence on the ANF (USFS 2005, p. 238). The primary threats to *B. nevini* habitat in this area are human recreation (off-highway vehicle use, shooting); wildland fire, including an increased risk of fire ignition due to the proximity of State Highway 79 (USFS 2005, pp. 232, 237); fuels and fire management activities (USFS 2005, p. 237); and invasive, nonnative plants, including potential short-term adverse effects associated with control efforts (USFS 2005, p. 234). This occurrence on the CNF burned in 1996 and vigorously resprouted following the fire (USFS 2005, p. 237). According to the USFS, this location has shown signs of disturbance from road activities, with unauthorized use of off-highway vehicles occurring close to, but not within, the area occupied by the species (USFS 2005, p. 235). Nonetheless, the magnitude of impacts associated with roads and recreational activity in this area appears to be low (USFS 2005, p. 238). Also, the USFS does not anticipate substantial camping and hiking-related impacts to *B. nevini* habitat, and intends to avoid or mitigate these impacts through implementation of Forest Plan standards (USFS 2005, p. 234).

The February 6, 2007, proposed rule (72 FR 5552) identified the proximity of Highway 79 as a potential threat to the *Berberis nevini* occurrence and habitat on the CNF, in part due to proposed highway widening and realignment activities (72 FR 5565). However, we no longer anticipate that these activities will affect Subunit 1B as there currently are no plans for widening or realigning Highway 79 in the section of roadway closest to this subunit. The revised subunit is now more than 525 ft (160 m) south of the highway. As discussed in the Special Management Considerations or Protection section above, the presence of invasive, nonnative plants may impact the *B. nevini* occurrence and habitat at this site. However, the CNF anticipates an eradication effort of the nonnative *Arundo donax* and other invasive grasses (USFS 2005) present in this subunit, which should minimize the impacts of this threat to the species and its habitat.

One of the greatest threats to occupied habitat on the CNF and the physical and biological features contained therein is from wildland fire and the management

of fire and fuels (i.e., fire suppression and prevention activities). This subunit is within the Wildland-Urban Interface (WUI) Defense Zone (USFS 2005, p. 237; Service 2005, p. 127). Some plants or habitat within the WUI Defense Zone could be removed or degraded under the Revised Land and Resource Management Plan due to fuel removal for fire protection or overly frequent fuel treatments (Service 2005, p. 127). Special management considerations or protection of the physical and biological features may be required to minimize disturbance to the vegetation and soils within this subunit; control invasive, nonnative plants; and maintain the natural fire regime of the area.

Subunit 1C: South Flank Big Oak Mountain

We are excluding this subunit from the final designation of critical habitat under section 4(b)(2) of the Act (Table 1). See the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below for a discussion of this exclusion.

Subunit 1D: North of Vail Lake

We are excluding this subunit from the final designation of critical habitat under section 4(b)(2) of the Act (Table 1). See the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below for a discussion of this exclusion.

Subunit 1E: South of Vail Lake/ Peninsula

We are excluding this subunit from the final designation of critical habitat under section 4(b)(2) of the Act (Table 1). See the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below for a discussion of this exclusion.

Subunit 1F: Temecula Creek East

We are excluding this subunit from the final designation of critical habitat under section 4(b)(2) of the Act (Table 1). See the Relationship of Critical Habitat to Habitat Conservation Plan Lands—Exclusions Under Section 4(b)(2) of the Act section below for a discussion of this exclusion.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely

modify designated critical habitat. Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional to serve its intended conservation role for the species.

Under section 7(a)(2) of the Act, if a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that are likely to adversely affect listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. We define “Reasonable and prudent alternatives” at 50 CFR 402.02 as alternative actions identified during consultation that:

- Can be implemented in a manner consistent with the intended purpose of the action,

- Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,

- Are economically and technologically feasible, and

- Would, in the Director’s opinion, avoid jeopardizing the continued existence of the listed species or destroying or adversely modifying critical habitat.

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

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate

consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law). Consequently, Federal agencies may sometimes need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Federal activities that may affect *Berberis nevini* or its designated critical habitat will require section 7(a)(2) consultation under the Act. Activities on State, Tribal, local or private lands requiring a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from us under section 10(a)(1)(B) of the Act) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) are examples of agency actions that may be subject to the section 7(a)(2) consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, Tribal, local or private lands that are not federally funded, authorized, or permitted, do not require section 7(a)(2) consultations.

Application of the “Adverse Modification” Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for *Berberis nevini*. Generally, the conservation role of *B. nevini* critical habitat units is to support native occurrences of the species in the Vail Lake and Oak Mountain area, which in combination with occurrences on private land excluded from critical habitat designation under section 4(b)(2) of the Act, comprise the core viable natural population(s) of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any

proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore should result in consultation for *Berberis nevini* include, but are not limited to (please see Special Management Considerations or Protection section for a more detailed discussion on the impacts of these actions to the listed species):

(1) Activities that would directly or indirectly impact *Berberis nevini* habitat and its physical and biological features. Such activities could include, but are not limited to: Residential or commercial development; fire prevention and suppression activities, such as the creation of fuel breaks and brush clearing or thinning; recreation management activities, including managing authorized recreation and restricting unauthorized recreation through placement of recreational trailheads, signs, barriers, maps, and/or facilities; off-road vehicle use; heavy recreational use; road development, maintenance, or improvement projects, such as road grading, widening, or realignment; flood control projects, such as vegetation stripping; and water storage projects that increase the period that habitat is inundated. These activities could change the physical and biological features of the habitat by: Affecting the topography of the site; physically removing or damaging soils and associated vegetation; altering the natural hydrology of the area; and by introducing and facilitating the spread of invasive, nonnative plant species. Additionally, actions to control or eradicate invasive, nonnative plants may cause temporary direct or indirect adverse impacts to *B. nevini* habitat, although the ultimate outcome may be beneficial by removing species that compete with *B. nevini* and contribute to high combustible fuel loads.

(2) Activities that would alter fire frequency in areas occupied by *Berberis nevini*. Such activities could include, but are not limited to, prescribed burns that are too frequent or poorly timed. These activities could reduce the ability of *B. nevini* to grow and reproduce by altering soil and vegetation community structure and composition (e.g., type conversion of shrublands into grasslands).

(3) Activities that would foster the introduction or spread of nonnative vegetation. These activities could include, but are not limited to: Seeding

areas with nonnative species following a fire; planting nonnative species or using non-weed free hay straw for slope, bank, and soil erosion control; and ground-disturbing activities, such as recreation management projects and road maintenance, improvement, or construction projects. These activities could reduce the ability of *Berberis nevadensis* to grow and reproduce because nonnative plant species may crowd out or otherwise compete with *B. nevadensis*. Additionally, an increase in nonnative plants could change the fire regime by creating conditions prone to frequent fire (e.g., increased fuel loads and continuous fuel beds) and by altering soil composition.

We consider all of the lands designated as critical habitat for *Berberis nevadensis* to contain the physical and biological features essential to the conservation of the species. The two subunits designated as critical habitat are within the geographic range of the species, were occupied at the time of listing, and are currently occupied by *B. nevadensis*. Federal agencies already consult with us on activities in areas occupied by *B. nevadensis* that may affect the species to ensure that their actions do not jeopardize the continued existence of *B. nevadensis*.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary must designate or revise critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the legislative history is clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor. In the following sections, we address a number of general issues that are relevant to the exclusions we have considered.

Benefits of Designating Critical Habitat

The process of designating critical habitat as described in the Act requires that the Service identify those lands on which are found the physical or biological features essential to the

conservation of the species that may require special management considerations or protection, and those areas outside the geographical area occupied by the species at the time of listing that are essential to the conservation of the species. In identifying those lands, the Service must consider the recovery needs of the species, such that, on the basis of the best scientific and commercial data available at the time of designation, the habitat that is identified, if managed, could provide for the survival and recovery of the species.

The identification of those areas that are essential for the conservation of the species and can, if managed, provide for the recovery of a species is beneficial. The process of proposing and finalizing a critical habitat rule provides the Service with the opportunity to determine the physical and biological features essential to the conservation of the species within the geographical area occupied by the species at the time of listing, as well as to determine other areas essential for the conservation of the species. The designation process includes peer review and public comment on the identified physical and biological features and essential areas. This process is valuable to land owners and managers in developing conservation management plans for identified areas, as well as any other occupied habitat or suitable habitat that may not have been included in the Service's determination of essential habitat.

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of critical habitat. As discussed above, Federal agencies must consult with us on discretionary actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Federal agencies must also consult with us on discretionary actions that may affect a listed species and refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species, and in some locations, the outcome of these analyses will be similar, because effects on habitat will often result in effects on the species. However, the regulatory standard is different: The jeopardy analysis looks at the action's impact on survival and recovery of the species, while the adverse modification analysis looks at the action's effects on the designated

habitat's contribution to the species' conservation. This will, in many instances, lead to different results and different regulatory requirements. Thus, critical habitat designations may provide greater regulatory benefits to the recovery of a species than would listing alone.

There are two limitations to the regulatory effect of critical habitat. First, a section 7(a)(2) consultation is required only where there is a Federal nexus (an action authorized, funded, or carried out by any Federal agency)—if there is no Federal nexus, the critical habitat designation of private lands itself does not restrict any actions that destroy or adversely modify critical habitat. Second, the designation only limits destruction or adverse modification. By its nature, the prohibition on adverse modification is designed to ensure that the conservation role and function of those areas that contain the physical and biological features essential to the conservation of the species or of unoccupied areas that are essential for the conservation of the species are not appreciably reduced. Critical habitat designation alone, however, does not require property owners to undertake affirmative actions to promote the recovery of the species.

Once an agency determines that consultation under section 7(a)(2) of the Act is necessary, the process may conclude informally when we concur in writing that the proposed Federal action is not likely to adversely affect critical habitat. However, if we determine through informal consultation that adverse impacts are likely to occur, then we would initiate formal consultation, which would conclude when we issue a biological opinion on whether the proposed Federal action is likely to result in destruction or adverse modification of critical habitat.

For critical habitat, a biological opinion that concludes in a determination of no destruction or adverse modification may contain discretionary conservation recommendations to minimize adverse effects to the physical and biological features essential to the conservation of the species, but it would not suggest the implementation of any reasonable and prudent alternative. We suggest reasonable and prudent alternatives to the proposed Federal action only when our biological opinion results in an adverse modification conclusion.

As stated above, the designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation has been initiated under

section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and/or adverse modification of its critical habitat, but not necessarily to manage critical habitat or institute recovery actions on critical habitat. Conversely, voluntary conservation efforts implemented through management plans may institute proactive actions over the lands they encompass and are often put in place to remove or reduce known threats to a species or its habitat; therefore implementing recovery actions. We believe that in many instances the benefit to a species and/or its habitat realized through the designation of critical habitat is low when compared to the conservation benefit that can be achieved through conservation efforts or management plans. The conservation achieved through implementing HCPs or other habitat management plans can be greater than what we achieve through multiple site-by-site, project-by-project, section 7(a)(2) consultations involving consideration of critical habitat. Management plans may commit resources to implement long-term management and protection to particular habitat for at least one and possibly additional listed or sensitive species. Section 7(a)(2) consultations commit Federal agencies to preventing adverse modification of critical habitat caused by the particular project only, and not to providing conservation or long-term benefits to areas not affected by the proposed project. Thus, implementation of any HCP or management plan that considers enhancement or recovery as the management standard may often provide as much or more benefit than a consultation for critical habitat designation.

Another benefit of including lands in critical habitat is that designation of critical habitat serves to educate landowners, State and local governments, and the public regarding the potential conservation value of an area. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high conservation value for the affected species. In general, critical habitat designation always has educational benefits; however, in some cases they may be redundant with other educational effects. For example, HCPs have significant public input and may largely duplicate the educational benefits of a critical habitat designation. Including lands in critical habitat also would inform State agencies and local governments about areas that could be

conserved under State laws or local ordinances.

Conservation Partnerships on Non-Federal Lands

Most federally listed species in the United States will not recover without the cooperation of non-Federal landowners. More than 60 percent of the United States is privately owned (National Wilderness Institute 1995), and at least 80 percent of endangered or threatened species occur either partially or solely on private lands (Crouse et al. 2002, p. 720). Stein et al. (1995, p. 400) found that only about 12 percent of listed species were found almost exclusively on Federal lands (90 to 100 percent of their known occurrences restricted to Federal lands) and that 50 percent of federally listed species are not known to occur on Federal lands at all.

Given the distribution of listed species with respect to land ownership, conservation of listed species in many parts of the United States is dependent upon working partnerships with a wide variety of entities and the voluntary cooperation of many non-Federal landowners (Wilcove and Chen 1998; Crouse et al. 2002; James 2002). Building partnerships and promoting voluntary cooperation of landowners are essential to our understanding the status of species on non-Federal lands, and necessary for us to implement recovery actions such as reintroducing listed species and restoring and protecting habitat.

Many non-Federal landowners derive satisfaction from contributing to endangered species recovery. We promote these private-sector efforts through the Department of the Interior's Cooperative Conservation philosophy. Conservation agreements with non-Federal landowners (HCPs, safe harbor agreements, other conservation agreements, easements, and State and local regulations) enhance species conservation by extending species protections beyond those available through section 7(a)(2) consultations. In the past decade, we have encouraged non-Federal landowners to enter into conservation agreements, based on the view that we can achieve greater species conservation on non-Federal land through such partnerships than we can through regulatory methods (61 FR 63854; December 2, 1996).

Many private landowners, however, are wary of the possible consequences of attracting endangered species to their property. Mounting evidence suggests that some regulatory actions by the Federal Government, while well-intentioned and required by law, can

(under certain circumstances) have unintended negative consequences for the conservation of species on private lands (Wilcove et al. 1996; Bean 2002; Conner and Mathews 2002; James 2002; Koch 2002; Brook et al. 2003). Many landowners fear a decline in their property value due to real or perceived restrictions on land-use options where threatened or endangered species are found. Consequently, harboring endangered species is viewed by many landowners as a liability. This perception results in anti-conservation incentives, because maintaining habitats that harbor endangered species represents a risk to future economic opportunities (Main et al. 1999; Brook et al. 2003).

According to some researchers, the designation of critical habitat on private lands significantly reduces the likelihood that landowners will support and carry out conservation actions (Main et al. 1999; Bean 2002; Brook et al. 2003). The magnitude of this outcome is greatly amplified in situations where active management measures (such as reintroduction, fire management, control of invasive species) are necessary for species conservation (Bean 2002). We believe that the judicious exclusion of specific areas of non-federally owned lands from critical habitat designations can contribute to species recovery and provide a superior level of conservation.

The purpose of designating critical habitat is to contribute to the conservation of threatened and endangered species and the ecosystems upon which they depend. The outcome of the designation, triggering regulatory requirements for actions funded, authorized, or carried out by Federal agencies under section 7(a)(2) of the Act, can sometimes be counterproductive to its intended purpose on non-Federal lands. Thus, the benefits of excluding areas that are covered by effective partnerships or other conservation commitments can often be high.

Benefits of Excluding Lands With HCPs

The benefits of excluding lands with approved HCPs from critical habitat designation include relieving landowners, communities, and counties of any additional regulatory burden that might be imposed by critical habitat. Many HCPs take years to develop, and upon completion, are consistent with recovery objectives for listed species that are covered within the plan area. Many conservation plans also provide conservation benefits to unlisted sensitive species. Imposing an additional regulatory review as a result

of the designation of critical habitat may undermine conservation efforts and partnerships designed to proactively protect species to ensure that listing under the Act will not be necessary. Our experience in implementing the Act has found that designation of critical habitat within the boundaries of management plans that provide conservation measures for a species is a disincentive to many entities which are either currently developing such plans, or contemplating doing so in the future, because one of the incentives for undertaking conservation is greater ease of permitting where listed species will be affected. Addition of a new regulatory requirement would remove a significant incentive for undertaking the time and expense of management planning. In fact, designating critical habitat in areas covered by a pending HCP or conservation plan could result in the loss of some species' benefits if participants abandon the planning process, in part because of the strength of the perceived additional regulatory compliance that such designation would entail. The time and cost of regulatory compliance for a critical habitat designation do not have to be quantified for them to be perceived as an additional Federal regulatory burden sufficient to discourage continued participation in developing plans targeting listed species' conservation.

A related benefit of excluding lands covered by approved HCPs from critical habitat designation is the unhindered, continued ability it gives us to seek new partnerships with future plan participants, including States, Counties, local jurisdictions, conservation organizations, and private landowners, which together can implement conservation actions that we would be unable to accomplish otherwise. We have found that potential participants are not inclined to participate in such management plans when we designate critical habitat within the area that would be covered by such a management plan, thus having a negative effect on our ability to establish new partnerships to develop these plans, particularly plans that address landscape-level conservation of species and habitats. By excluding these lands, we preserve our current partnerships and encourage additional conservation actions in the future.

We also note that permit issuance in association with HCP applications require consultation under section 7(a)(2) of the Act, which would include the review the effects of all HCP-covered activities that might adversely impact the species under a jeopardy standard, including possibly significant habitat

modification (see definition of "harm" at 50 CFR 17.3), even without the critical habitat designation. In addition, all other Federal actions that may affect the listed species would still require consultation under section 7(a)(2) of the Act, and we would review these actions for possibly significant habitat modification in accordance with the definition of harm referenced above.

The information provided in the previous section applies to all the following discussions of benefits of inclusion or exclusion of critical habitat.

After considering the following areas under section 4(b)(2) of the Act, we are excluding approximately 167 ac (67 ha) of non-Federal lands from the *Berberis nevinii* critical habitat designation in subunits 1C, 1D, 1E, 1F that are within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. A detailed analysis of our exclusion of these lands under section 4(b)(2) of the Act is provided below.

Areas Considered for Exclusion Under Section 4(b)(2) of the Act

At the request of the USFS, we evaluated the appropriateness of excluding Forest Service lands from the final designation of critical habitat for *Berberis nevinii* under section 4(b)(2) of the Act based on management provided for federally listed species, including *B. nevinii*, under the USFS Land Management Plan and the Species Management Guide for *B. nevinii*. As discussed in more detail in our response to Comment 12 in the Public Comments section above, we have concluded that the exclusion of Forest Service lands in this instance does not outweigh the benefits of their designation. Therefore, as previously discussed, we are designating approximately 1 ac of Forest Service lands in subunit 1B as critical habitat for *B. nevinii*.

Exclusions Under Section 4(b)(2) of the Act

When performing the required analysis under section 4(b)(2) of the Act, the existence of a management plan (HCPs as well as other types) that considers enhancement or recovery of listed species as its management standard is relevant to our weighing of the benefits of inclusion of a particular area in the critical habitat designation. The following factors are considered when we evaluate the management and protection provided by such plans:

(1) Whether the plan is complete and provides for the conservation and protection of the physical and biological features essential to the conservation of the species;

(2) Whether there is a reasonable expectation that the conservation management strategies and actions will be implemented for the foreseeable future, based on past practices, written guidance, or regulations; and

(3) Whether the plan provides conservation strategies and measures consistent with currently accepted principles of conservation biology.

As discussed in detail below, we believe that the Western Riverside County MSHCP provides for the conservation of *Berberis nevinii* and its physical and biological features. We have determined that the benefits of excluding essential habitat for *B. nevinii* covered by this plan, based on our partnership with private land owners and local, County, and State jurisdictions, whose commitment to benefiting the species is evident by the management mandated by the MSHCP, outweighs the benefit of including these lands in a critical habitat designation. Furthermore we have determined that exclusion of these lands will not result in the extinction of *B. nevinii*.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

We are excluding from the final critical habitat designation for *Berberis nevinii* all non-Federal lands (approximately 167 ac (67 ha)) covered by the Western Riverside County MSHCP under section 4(b)(2) of the Act. The non-Federal lands that we are excluding include: Approximately 39 ac (16 ha) of private lands on the south flank of Big Oak Mountain (Subunit 1C); approximately 5 ac (2 ha) of private lands directly north of Vail Lake (Subunit 1D); approximately 112 ac (45 ha) of private lands to the south of Vail Lake and on the Vail Lake peninsula, which is the area with the largest known occurrence of *B. nevinii* (Subunit 1E); and approximately 11 ac (4 ha) of private lands north of Temecula Creek and southeast of Vail Lake (Subunit 1F).

The MSHCP is a large-scale, multi-jurisdictional HCP encompassing 1.26-million ac (510,000 ha) in Western Riverside County. The MSHCP addresses 146 listed and unlisted "covered species," including *Berberis nevinii*. Participants in the Western Riverside County MSHCP include 14 cities in Western Riverside County; the County of Riverside, including the Riverside County Flood Control and Water Conservation Agency (County Flood Control), Riverside County Transportation Commission, Riverside County Parks and Open Space District, and Riverside County Waste Department; California Department of

Parks and Recreation; and the California Department of Transportation (Caltrans). The Western Riverside County MSHCP was designed to establish a multi-species conservation program that minimizes and mitigates the expected loss of habitat and the incidental take of covered species. On June 22, 2004, the Service issued an incidental take permit (TE-088609-0) under section 10(a)(1)(B) of the Act to 22 permittees under the MSHCP for a period of 75 years.

The Western Riverside County MSHCP will establish approximately 153,000 ac (61,916 ha) of new conservation lands (Additional Reserve Lands) to complement the approximate 347,000 ac (140,426 ha) of existing natural and open space areas designated by the MSHCP as Public-Quasi-Public (PQP) lands. These PQP lands include those under Federal ownership, primarily managed by the USFS and BLM, and also permittee-owned open-space areas (e.g., State Parks, County Flood Control, and County Park lands). In this final rule, we are designating as critical habitat Federally-owned PQP lands. Collectively, the Additional Reserve Lands and PQP lands form the overall MSHCP Conservation Area in which "covered species," including *Berberis nevinii*, will be protected. The precise configuration of the 153,000 ac (61,916 ha) of Additional Reserve Lands is not mapped or precisely identified in the MSHCP, but rather is based on textual descriptions of a Conceptual Reserve Design within the bounds of a 310,000 ac (125,453 ha) "Criteria Area" that is interpreted as implementation of the MSHCP proceeds.

All private lands that we are excluding from the final critical habitat designation under section 4(b)(2) of the Act are within the MSHCP's Criteria Area and are targeted for inclusion within the MSHCP Conservation Area as potential Additional Reserve Lands. In addition to the lands we have determined to be essential to the conservation of the species, conservation objectives in the MSHCP for *Berberis nevinii* provide for conservation and management of at least 8,000 ac (3,238 ha) of suitable habitat (defined as chaparral and Riversidean alluvial fan sage scrub between 984 and 2,162 ft (300 and 659 m) in elevation) in the Vail Lake area. As discussed in the Background section of the proposed rule (72 FR 5552; February 6, 2007), we were unable to accurately quantify the exact number of *B. nevinii* occurrences or plants within the MSHCP Plan Area (72 FR 5555). Nevertheless, all essential habitat within the MSHCP area are either within existing PQP lands or proposed Additional Reserve Lands.

The goal of the MSHCP is to conserve all known locations of *B. nevinii* in the Agua Tibia/Vail Lake area and the Soboba Badlands, which includes all areas and features that we have determined to be essential to the conservation of the species (Dudek 2002, p. 9–117, Table 9–2).

Furthermore, all private lands that we are excluding from final critical habitat designation are within the MSHCP's Survey Area and will receive conservation benefits under the Additional Survey Needs and Procedures policy. The MSHCP requires surveys for *Berberis nevinii* as part of the project review process for public and private projects where suitable habitat is present within a defined boundary of the Criteria Area (see Criteria Area Species Survey Area Map, Figure 6–2 of the MSHCP, Volume I). For locations with positive survey results, 90 percent of those portions of the property that provide long-term conservation value for the species will be avoided until it is demonstrated that the overall conservation objectives for the species have been met. Therefore, new occurrences that are found as a result of survey efforts and are subsequently determined to be important to the overall conservation of the species may be included in the Additional Reserve Lands.

Numerous processes are incorporated into the MSHCP that allow for Service oversight of MSHCP implementation. These processes include: Annual reporting requirements; joint review of projects proposed within the Criteria Area; participation on the Reserve Management Oversight Committee; and a Reserve Assembly Accounting Process. The Reserve Assembly Accounting Process will be implemented to ensure that the conservation of lands occurs in rough proportionality to development, that lands are assembled in the configuration as generally described in the MSHCP, and that conservation goals and objectives are being achieved (Service 2004, pp. 19–26). The Service is also responsible for reviewing Determinations of Biologically Equivalent or Superior Preservation that are proposed under the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools policy and for reviewing minor amendment projects for consistency with the requirements of the MSHCP (Service 2004, pp. 19–26).

As stated in the final listing rule (63 FR 54956, October 13, 1998), threats to the species and its habitat include urban development, off-road vehicle use, human recreation (e.g., horseback

riding), highway projects, fire management strategies (suppression measures, brush clearing) that alter natural fire processes, and the introduction of invasive, nonnative plants that may compete with *Berberis nevinii* or contribute to combustible fuel loads (63 FR 54961). As described above, the MSHCP provides enhancement of habitat by removing or reducing threats to this species and the physical and biological features essential to the conservation of the species. This MSHCP preserves habitat that supports identified core populations of this species and, therefore, provides for recovery of this species.

Benefits of Exclusion Outweigh the Benefits of Inclusion

As discussed in the Benefits of Designating Critical Habitat section and in the Service Response to Comment 6 above, we believe that the regulatory benefit of designating critical habitat on private lands covered by the Western Riverside County MSHCP would be low and may hinder the effective implementation of the plan. The Western Riverside County MSHCP addresses conservation issues from a coordinated, integrated perspective and will achieve better *Berberis nevinii* conservation than would be achieved through multiple site-by-site, project-by-project, section 7 consultations involving consideration of critical habitat. Furthermore, biological opinions for plants do not include an incidental take statement and, therefore, contain no mandatory reasonable and prudent measures issued to minimize the effect of any predicted loss of plants. Any measures taken to minimize effects to the plant species or its habitat are voluntary. The Western Riverside County MSHCP provides for the proactive monitoring and management of conserved lands (as previously described), reducing known threats to the *B. nevinii* and its habitat.

Conservation and management of *Berberis nevinii* habitat is essential to the survival and recovery of this species. Such conservation needs are typically not addressed through the application of the statutory prohibition on adverse modification or destruction of critical habitat. The Western Riverside County MSHCP provides as much or more conservation benefit to the species than a consultation for critical habitat designation conducted under the standards required by the Ninth Circuit in the *Gifford Pinchot* decision. Furthermore, educational benefits that may be derived from a critical habitat designation are low in

this case and largely redundant to the educational benefits achieved through the significant public, State, and local government input solicited and received during the development of the Western Riverside County MSHCP.

We have developed close partnerships with the 22 MSHCP permittees through the development of this regional HCP that incorporates appropriate protections and management of the physical and biological features essential to the conservation of this species. Those protections are consistent with the mandates under section 7 of the Act to avoid adverse modification or destruction of critical habitat and go beyond that prohibition by including active management and protection of essential habitat areas. By excluding these lands from designation, we are eliminating a largely redundant layer of regulatory review for a limited set of projects on non-Federal lands that are addressed by the MSHCP, and we are helping to preserve our ongoing partnerships with the permittees and encouraging new partnerships with other landowners and jurisdictions. Those partnerships, and the landscape level, multiple-species conservation planning efforts they promote, are critical for the conservation of *Berberis nevinii*. Designating critical habitat on non-Federal lands within the Western Riverside County MSHCP could have a detrimental effect to our partnerships with the 22 MSHCP permittees and could be a significant disincentive to the establishment of future partnerships and HCPs with other partners.

We have reviewed and evaluated the exclusion of 167 ac (67 ha) of non-Federal lands that meet the definition of critical habitat within the Western Riverside County MSHCP plan area from the designation of final critical habitat for *Berberis nevinii* and have determined that the benefits of excluding these lands in subunits 1C, 1D, 1E, and 1F outweigh the benefits of including them. As discussed above, the MSHCP will provide for significant preservation and management of the physical and biological features essential to *B. nevinii* and will help reach the recovery goals for this species.

Exclusion Will Not Result in Extinction of the Species

In keeping with our analysis and conclusion detailed in our biological opinion for the Western Riverside County MSHCP (Service 2004, p. 334), we do not believe that the exclusion of non-Federal lands that meet the definition of critical habitat within the Western Riverside County MSHCP plan area from the final designation of

critical habitat for *Berberis nevinii* will result in the extinction of the species. The MSHCP provides protection and management, in perpetuity, of lands within subunits 1C, 1D, 1E, and 1F, including the physical and biological features essential to the conservation of *B. nevinii*. In addition, the jeopardy standard of section 7 of the Act and routine implementation of conservation measures through the section 7 process also provide assurances that the species will not go extinct.

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific information available and to consider economic and other relevant impacts of designating a particular area as critical habitat. Section 4(b)(2) of the Act allows the Secretary to exclude areas from critical habitat for economic reasons if the Secretary determines that the benefits of such exclusion exceed the benefits of designating the area as critical habitat. However, this exclusion cannot occur if it will result in the extinction of the species concerned.

Following the publication of the proposed critical habitat designation, we conducted an economic analysis to estimate the potential economic effect of the designation. The draft analysis (dated September 4, 2007) was made available for public review between October 17, 2007 and November 16, 2007 (72 FR 58793). We did not receive any public comments related to the draft economic analysis. A final analysis of the potential economic effects of the designation was developed taking into consideration any relevant new information.

The primary purpose of the economic analysis is to estimate the potential economic impacts associated with the designation of critical habitat for *Berberis nevinii*. This information is intended to assist the Secretary in making decisions about whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation. This economic analysis considers the economic efficiency effects that may result from the designation, including habitat protections that may be co-extensive with the listing of the species. It also addresses distribution of impacts, including an assessment of the potential effects on small entities and the energy industry. This information can be used by the Secretary to assess whether the effects of the designation might unduly burden a particular group or economic sector.

The economic analysis focuses on the direct and indirect costs of the rule. However, economic impacts to land use activities can exist in the absence of critical habitat. These impacts may result from, for example, section 7 consultations under the jeopardy standard, local zoning laws, State and natural resource laws, and enforceable management plans and best management practices applied by other State and Federal agencies.

Potential costs associated with invasive, nonnative plant species management, recreation management, fire management, and section 7 consultations comprised all of the quantified impacts in the areas we are designating as critical habitat. The Federal government is expected to bear the entire cost of the anticipated upper-bound future impacts, with the following anticipated split among agencies: BLM, 61 percent; USFS, 35 percent; Service, 4 percent. Similarly, we anticipate that Subunit 1A (Big Oak Mountain Summit), which is managed by BLM, will account for the majority (62 percent) of the total upper-bound future conservation impacts.

Potential costs associated with changes to the management of Vail Lake comprised the majority of the total quantified upper-bound future impacts in areas we are excluding from the designation of critical habitat under section 4(b)(2) of the Act. This cost would have been borne entirely by Rancho California Water District (RCWD), the entity that manages Vail Lake, and is based on the scenario that RCWD would not be able to implement the preferred alternative (Hybrid 1 Alternative) of their Regional Integrated Resources Plan, which calls for additional water storage in Vail Lake so as to cost-effectively meet the future municipal and agricultural demands of customers. Other impacts in areas excluded from the final designation of critical habitat were based on the costs of acquisition, management, biological monitoring, and administration of land to be acquired under the Western Riverside County MSHCP, or impacts associated with development opportunities on private land within the Plan Area for the MSHCP.

We estimated potential economic effects of actions related to the conservation of *Berberis nevinii* under sections 4, 7, and 10 of the Act and those attributable to designating critical habitat to be approximately \$169,000 to \$172,000 in undiscounted dollars over the next 20 years in areas we are designating as final critical habitat (subunits 1A and 1B). Discounted future costs were estimated to be

approximately \$136,000 to \$139,000 (\$10,000 annualized) at a 3 percent discount rate or approximately \$107,000 to \$110,000 (\$11,000 annualized) at a 7 percent discount rate for activities in subunits 1A and 1B. We estimated potential economic effects to be approximately \$1.7 to \$433.5 million in undiscounted dollars over the next 20 years (or 40 years for impacts related to management of Vail Lake) in areas we are excluding from final critical habitat under section 4(b)(2) of the Act based on the Western Riverside County MSHCP (Subunits 1C through 1F). Discounted future costs were estimated at approximately \$1.2 to \$232.5 million at a 3 percent discount rate (\$82,000 to \$10.1 million annualized) or approximately \$0.9 to \$118.1 million at a 7 percent discount rate (\$81,000 to \$8.9 million annualized) for activities in subunits 1C, 1D, 1E, and 1F. The latter impacts would only occur if the areas we proposed for exclusion were instead designated as critical habitat for *B. nevinii*. Note that these cost estimates were based on revisions to the proposed designation of critical habitat subunits 1B, 1D, and 1E as described in the notice of availability for the DEA published on October 17, 2007 (72 FR 58793).

The Service also completed a final economic analysis (FEA) of the designation of critical habitat for *Berberis nevinii* that updates the DEA by removing impacts that were not considered probable or likely to occur and by adding an estimate of the costs associated solely with the designations of critical habitat for *B. nevinii* (incremental impacts). The FEA estimates that the potential economic effects of actions relating to the conservation of *B. nevinii*, including costs associated with sections 4, 7, and 10 of the Act, and including those attributable to the designation of critical habitat, will be \$1.80 million (undiscounted) over the next 20 years. The present value of these impacts, applying a 3 percent discount rate, is \$1.34 million; or \$0.95 million, using a discount rate of 7 percent. This is a reduction from the impacts estimated in the DEA of about \$0.15 million (undiscounted) over the next 20 years. The FEA also estimates total costs attributable solely to the designation of critical habitat for *B. nevinii* (incremental costs) to be \$3,593 (present value at a three percent discount rate). When critical habitat for this species is designated, it is anticipated that the consultation with the USFS regarding their current Land Management Plan will be reinitiated, resulting in

administrative impacts to the USFS. After consideration of the impacts under section 4(b)(2) of the Act, we have not excluded any areas from the final critical habitat designations based on the identified economic impacts.

The final economic analysis is available at <http://www.regulations.gov> and <http://www.fws.gov/carlsbad> or upon request from the Carlsbad Fish and Wildlife Office (see ADDRESSES section).

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866 (E.O. 12866), we evaluate four parameters in determining whether a rule is significant. If any one of the following four parameters are met, the Office of Management and Budget (OMB) will designate that rule as significant under E.O. 12866:

(a) The rule would have an annual economic effect of \$100 million or more or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government;

(b) The rule would create inconsistencies with other Federal agencies' actions;

(c) The rule would materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients; or

(d) The rule would raise novel legal or policy issues. If OMB requests to informally review a rule designating critical habitat for a species, we consider that rule to raise novel legal and policy issues. Because no other Federal agencies designate critical habitat, the designation of critical habitat will not create inconsistencies with other agencies' actions. We use the economic analysis of the critical habitat designation to evaluate the potential effects related to the other parameters of E.O. 12866 and to make a determination as to whether the regulation may be significant under parameter (a) or (c) listed above.

Based on the economic analysis of the critical habitat designation, we have determined that the designation of critical habitat for *Berberis nevinii* will not result in an annual effect on the economy of \$100 million or more or affect the economy in a material way. Based on previous critical habitat designations and the economic analysis, we believe this rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. OMB has not requested to informally review this rule, and thus this action does not raise novel legal or policy issues. In

accordance with the provisions of E.O. 12866, this rule is not considered significant.

Executive Order 12866 directs Federal agencies issuing regulations to evaluate regulatory alternatives (Office of Management and Budget, Circular A-4, September 17, 2003). Under Circular A-4, once an agency determines that the Federal regulatory action is appropriate, the agency must consider alternative regulatory approaches. Because the determination of critical habitat is a statutory requirement under the Act, we must evaluate alternative regulatory approaches, where feasible, when issuing a designation of critical habitat.

In developing our designations of critical habitat, we consider economic impacts, impacts to national security, and other relevant impacts under section 4(b)(2) of the Act. Based on the discretion allowable under this provision, we may exclude any particular area from the designation of critical habitat providing that the benefits of such exclusion outweigh the benefits of specifying the area as critical habitat and that such exclusion would not result in the extinction of the species. We believe that the evaluation of the inclusion or exclusion of particular areas, or a combination of both, constitutes our regulatory alternative analysis for designations.

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

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended RFA to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for *Berberis nevinii* will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration (SBA), small entities

include small organizations, such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; as well as small businesses. Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule, as well as the types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if the rule could significantly affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (e.g., housing development, grazing, oil and gas production, timber harvesting). We apply the "substantial number" test individually to each industry to determine if certification is appropriate. However, the SBREFA does not explicitly define "substantial number" or "significant economic impact." Consequently, to assess whether a "substantial number" of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the number of small entities potentially affected, we also consider whether their activities have any Federal involvement.

Designation of critical habitat only affects activities conducted, funded, or permitted by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they fund, permit, or implement that may affect *Berberis nevini* (see Section 7

Consultation section). Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (see Application of the "Adverse Modification" Standard section).

The FEA examined the potential for *Berberis nevini* conservation efforts to affect small entities. This analysis was based on the estimated impacts associated with the listing of *B. nevini* and proposed critical habitat designation and evaluated the potential for economic impacts related to transportation projects; land development; management of Vail Lake; recreation; fire management; and invasive, nonnative plant species management. The FEA also estimated the costs associated solely with the designation of critical habitat for *B. nevini* (incremental impacts). Overall, the FEA estimates that the potential economic effects of actions relating to the conservation of *B. nevini*, including costs associated with sections 4, 7, and 10 of the Act, and including those attributable to the designation of critical habitat, will be \$1.80 million (undiscounted) over the next 20 years. The present value of these impacts, applying a 3 percent discount rate, is \$1.34 million; or \$0.95 million, using a discount rate of 7 percent. This is a reduction from the impacts estimated in the DEA of about \$0.15 million (undiscounted) over the next 20 years. The FEA also estimates total costs attributable solely to the designation of critical habitat for *B. nevini* (incremental costs) to be \$3,593 (present value at a three percent discount rate). Impacts to small entities are not anticipated because the final designation of critical habitat for *B. nevini* includes only Federal lands, and costs associated with modifications to activities will be borne entirely by the Federal government (USFS or BLM) as we do not anticipate any applicants would be involved in consultations regarding impacts to the designated critical habitat (please refer to section Appendix B of the FEA for a full discussion of potential economic impacts to small entities).

Transportation projects that are reasonably foreseeable within the 20-year analysis period are not anticipated to impact areas within designated critical habitat and were not considered.

In summary, we have considered whether this designation would result in a significant economic effect on a substantial number of small entities.

The entire designated critical habitat is owned and managed by the Federal government, which is not considered a small business entity. Therefore, based on the above reasoning and currently available information, we certify that this rule will not have a significant economic impact on a substantial number of small entities. A regulatory flexibility analysis is not required.

Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 801 et seq.)

Under SBREFA, this rule is not a major rule. Our detailed assessment of the economic effects of this designation is described in the economic analysis. Based on the effects identified in the economic analysis, we believe that this rule will not have an annual effect on the economy of \$100 million or more, will not cause a major increase in costs or prices for consumers, and will not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises. Refer to the final economic analysis for a discussion of the effects of this determination (see ADDRESSES for information on obtaining a copy of the final economic analysis).

Executive Order 13211—Energy Supply, Distribution, or Use

On May 18, 2001, the President issued an Executive Order (E.O. 13211; Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute "a significant adverse effect" when compared without the regulatory action under consideration. The final economic analysis finds that none of these criteria are relevant to this analysis. Thus, based on information in the economic analysis, energy-related impacts associated with *B. nevini* conservation activities within the final critical habitat designation are not expected. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

Unfunded Mandates Reform Act

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.), we make the following findings:

(a) This rule will not produce a Federal mandate. In general, a Federal

mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or [T]ribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and [T]ribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding," and the State, local, or Tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; AFDC work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program."

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat

shift the costs of the large entitlement programs listed above onto State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments because it will not produce a Federal mandate of \$100 million or greater in any year, that is, it is not a "significant regulatory action" under the Unfunded Mandates Reform Act. Furthermore, all lands designated as critical habitat in this rule are managed by BLM and USFS, which are not considered small entities or small governments. The designation of critical habitat imposes no obligations on State or local governments. As such, a Small Government Agency Plan is not required.

Takings

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating approximately 6 ac (3 ha) of lands in Riverside County, California, as critical habitat for *Berberis nevadensis* in a takings implications assessment. The takings implications assessment concludes that this final designation of critical habitat does not pose significant takings implications for lands within or affected by the designation.

Federalism

In accordance with E.O. 13132 (Federalism), this final rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this final critical habitat designation with appropriate State resource agencies in California. We received one comment from a local agency during the public comment period for the proposed critical habitat rule. This commenter supported the proposed exclusion of private lands within the boundaries of the Western Riverside County MSHCP plan area from the designation of final critical habitat, but was concerned that this area could still be included in the final designation if the Secretary determined that the benefits of including these lands outweigh the benefits of excluding them. We have determined that the benefits of excluding these private lands covered by the Western Riverside County MSHCP outweigh the benefits of designating critical habitat in these areas, and that this exclusion will not result in the extinction of *Berberis nevadensis*; therefore, we have excluded all

private lands from this final designation (please refer to the Public Comments section of this final rule for a detailed discussion of this comment and our response).

The entire designated critical habitat is owned and managed by the Federal government and, therefore, is unlikely to have any incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical and biological features essential to the conservation of the species are more clearly defined, and the PCEs necessary to support the life processes of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Civil Justice Reform

In accordance with E.O. 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. This final rule uses standard property descriptions and identifies the physical and biological features essential to the conservation of the species within the designated areas to assist the public in understanding the habitat needs of *Berberis nevadensis*.

Paperwork Reduction Act of 1995

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act

It is our position that, outside the jurisdiction of the Circuit Court of the United States for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the

Federal Register on October 25, 1983 (48 FR 49244). This assertion was upheld by the Circuit Court of the United States for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), E.O. 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly

with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We have determined that there are no Tribal lands that meet the definition of critical habitat for *Berberis nevinii*. Therefore, we have not designated critical habitat for *B. nevinii* on Tribal lands.

References Cited

A complete list of all references cited in this rulemaking is available on the Internet at <http://www.regulations.gov> and <http://www.fws.gov/carlsbad/>.

Author(s)

The primary authors of this rulemaking are staff of the Nevada Fish and Wildlife Office, Reno, Nevada, and the Carlsbad Fish and Wildlife Office, Carlsbad, California.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—[AMENDED]

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

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

■ 2. In § 17.12(h), revise the entry for “*Berberis nevinii*” under “FLOWERING PLANTS” in the List of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historical range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*		*
<i>Berberis nevinii</i>	Nevin's barberry	U.S.A. (CA)	Berberidaceae	E	648	17.96(a).	
*	*	*	*	*	*		*

■ 3. Amend § 17.96(a) as follows:

■ a. Add “Family Berberidaceae” in alphabetical order of the family names; and

■ b. Add a critical habitat entry for “*Berberis nevinii* (Nevin's barberry)” under Family Berberidaceae to read as set forth below.

§ 17.96 Critical habitat—plants.

(a) Flowering plants.

* * * * *

Family Berberidaceae: *Berberis nevinii* (Nevin's barberry)

(1) Critical habitat is depicted for Riverside County, California, in the text and on the map below.

(2) The primary constituent elements of critical habitat for *Berberis nevinii* are the habitat components that provide:

(i) Low-gradient (i.e., nearly flat) canyon floors, washes and adjacent terraces, and mountain ridge/summits, or eroded, generally northeast to northwest-facing mountain slopes and banks of dry washes typically of less than 70 percent slope that provide space for plant establishment and growth;

(ii) Well-drained alluvial soils primarily of non-marine sedimentary origin, such as Temecula or sandy arkose soils; soils of the Cajalco-Temescal-Las Posas soil association formed on gabbro (igneous) or latite (volcanic) bedrock; metasedimentary substrates associated with springs or seeps; and heavy adobe/gabbro-type soils derived from metavolcanic geology (Mesozoic basic intrusive rock) that provide the appropriate nutrients and space for growth and reproduction; and

(iii) Scrub (chaparral, coastal sage, alluvial, riparian) and woodland (oak, riparian) vegetation communities between 900 and 3,000 feet (275 and 915 meters) in elevation that provide the appropriate cover for growth and reproduction.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) Critical habitat map. Data layers defining map units were created on a

base of USGS 1:24,000 maps and critical habitat units were then mapped using a 100-meter grid to establish Universal Transverse Mercator (UTM) North American Datum 1927 (NAD 27) coordinates which, when connected, provided the boundaries of the unit. All acreage calculations were performed using GIS.

(5) Unit 1: Agua Tibia/Vail Lake Unit, Riverside County, California.

(i) Subunit 1A: Big Oak Mountain Summit. From USGS 1:24,000 quadrangle Sage, lands bounded by the following UTM NAD27 coordinates (E, N): 502153, 3708505; 502157, 3708510; 502167, 3708519; 502179, 3708526; 502192, 3708532; 502205, 3708534; 502219, 3708535; 502233, 3708533; 502246, 3708528; 502258, 3708522; 502269, 3708513; 502278, 3708503; 502286, 3708491; 502291, 3708478; 502294, 3708465; 502294, 3708451; 502292, 3708437; 502288, 3708424; 502281, 3708412; 502272, 3708401; 502262, 3708392; 502250, 3708384; 502237, 3708379; 502224, 3708376; 502210, 3708376; 502196, 3708378; 502183, 3708382; 502171, 3708389;

502160, 3708398; 502151, 3708408;
502143, 3708420; 502138, 3708432;
502135, 3708446; 502135, 3708460;
502137, 3708474; 502141, 3708487;
502148, 3708499; 502153, 3708505;
thence returning to 502153, 3708505.

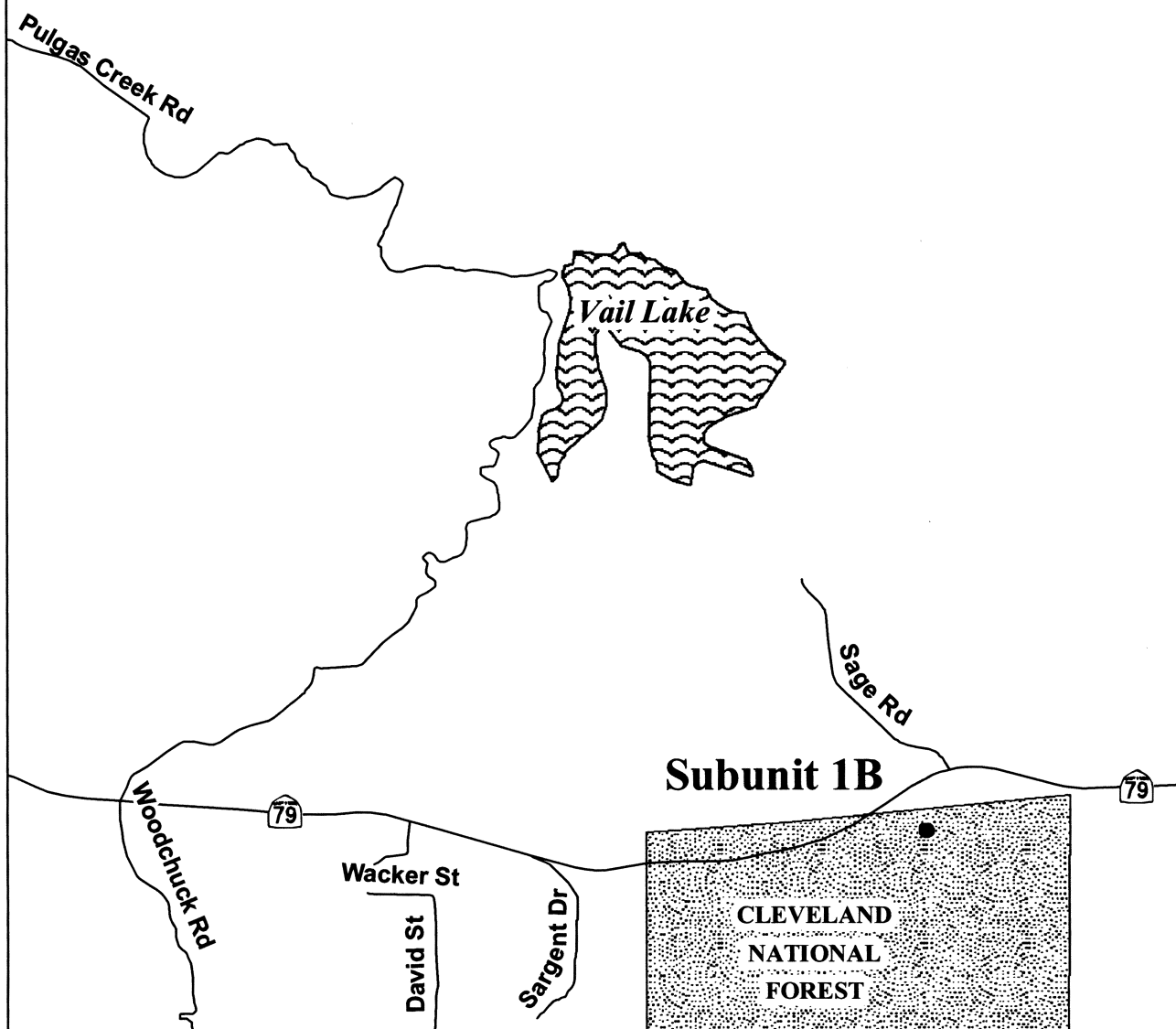
(ii) Subunit 1B: Agua Tibia Mountain
Foothills. From USGS 1:24,000
quadrangle Vail Lake, lands bounded by
the following UTM NAD27 coordinates
(E, N): 504200, 3702900; 504300,
3702900; 504300, 3702800; 504200,

3702800; thence returning to 504200,
3702900.

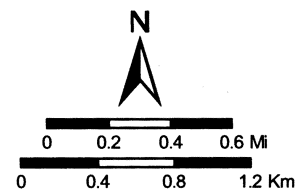
(iii) Note: Map of Unit 1 follows:

Map of
Critical Habitat for *Berberis nevinii* (Nevin's barberry)
Unit 1, Subunits 1A and 1B, Riverside County, California

Subunit 1A ●



- Final Critical Habitat
- ▨ Cleveland National Forest
- 〰 Lakes
- Roads



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Dated: January 31, 2008.

Lyle Lavery,
*Assistant Secretary for Fish and Wildlife and
Parks.*

[FR Doc. 08-523 Filed 1-12-08; 8:45 am]

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