

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 17**

FWS-R8-ES-2007-0005; 92210-1117-0000-B4

RIN 1018-AV09

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Peninsular Bighorn Sheep and Determination of a Distinct Population Segment of Desert Bighorn Sheep (*Ovis canadensis nelsoni*)****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), designate revised critical habitat for the Peninsular bighorn sheep, a distinct population segment (DPS) of desert bighorn sheep (*Ovis canadensis nelsoni*) occupying the Peninsular Ranges of Southern California, under the Endangered Species Act of 1973, as amended (Act). In total, approximately 376,938 acres (ac) (152,542 hectares (ha)) fall within the boundaries of the critical habitat designation. This revised designation of critical habitat for Peninsular bighorn sheep reduces the 2001 designation by approximately 467,959 ac (189,377 ha). The revised critical habitat is located in Riverside, San Diego, and Imperial Counties, California.

**DATES:** This rule becomes effective on May 14, 2009.

**ADDRESSES:** The final rule, final economic analysis, and map of critical habitat will be available on the Internet at <http://www.regulations.gov>. 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, Suite #101, 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 (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

designation of critical habitat for Peninsular bighorn sheep in this final rule. For more information on the taxonomy, biology, and ecology of Peninsular bighorn sheep, refer to the final listing rule published in the **Federal Register** on March 18, 1998 (63 FR 13134), the original final critical habitat rule published in the **Federal Register** on February 1, 2001 (66 FR 8650), the proposed rule to revise critical habitat published in the **Federal Register** on October 10, 2007 (72 FR 57740), and the August 26, 2008 (73 FR 50498), notice of availability of the draft economic analysis (DEA) that announced revisions to the proposed critical habitat designation.

The listed entity treated in this rule is a DPS of desert bighorn sheep (*Ovis canadensis nelsoni*). We will refer to this entity as Peninsular bighorn sheep, or as a DPS (not species or subspecies).

As stated in the October 10, 2007, proposed critical habitat rule, we are formally recognizing the listed entity as Peninsular bighorn sheep, a DPS of the desert bighorn sheep (*Ovis canadensis nelsoni*). This is the currently accepted taxonomic placement of these animals. We submitted this as a change for inclusion in the Code of Federal Regulations (CFR). The taxonomic revision does not affect discreteness and significance of Peninsular bighorn sheep as a DPS. In the 1998 final listing rule, Peninsular bighorn sheep were listed as a DPS of the species *Ovis canadensis*. At the time of listing at least six subspecies of bighorn sheep (*Ovis canadensis*) were named, including *Ovis canadensis cremnobates*, which is a name that previously had been applied to the Peninsular bighorn sheep. However, because of ongoing questions regarding the distinctiveness of the subspecific taxa at that time, the Peninsular Ranges population was considered a distinct population segment (DPS) of the species *O. canadensis* rather than as a subspecies or a DPS of a particular subspecies.

Relevant information regarding the systematic relationships of the infraspecific (below species rank) taxa of bighorn sheep at or near the time of listing was based on morphometric (variation in size and shape) assessments, as well as molecular analyses, such as mitochondrial DNA (mtDNA) assessments (Wehausen and Ramey 1993; Ramey 1993; Ramey 1995; Boyce *et al.* 1999) and microsatellite and histocompatibility complex loci analysis (Boyce *et al.* 1997; Gutierrez-Espeleta *et al.* 1998). While the discriminatory value of these various approaches was not addressed in the recovery plan (USFWS 2000), the

Service concluded in the morphology and taxonomy section of the Recovery Plan (USFWS 2000, p. 3) that the currently recognized subspecies for desert bighorn sheep, *Ovis canadensis nelsoni*, includes the Peninsular bighorn sheep. This taxonomic placement was recognized in the final critical habitat designation for the Peninsular bighorn sheep published in 2001 (USFWS 2001, p. 8650). In that rule, we described the range of the DPS as coincident with the U.S. portion of the formerly recognized *Ovis canadensis cremnobates*. The current known range for the Peninsular bighorn sheep remains the same, as does its status as a DPS of the desert bighorn sheep (*Ovis canadensis nelsoni*).

Regardless of its systematic affiliation, the Peninsular bighorn sheep continues to meet the criteria for consideration as a DPS. Within this document, we refer to the listed entity as a distinct population segment (DPS) of desert bighorn sheep (*Ovis canadensis nelsoni*), not as a subspecies as we did within the discussion portion of the October 10, 2007, proposed critical habitat rule. We will continue to use the common name Peninsular bighorn sheep when referring to this DPS. No discussions or references to the Peninsular bighorn sheep DPS are intended to apply to any other portions of the range (*e.g.*, San Bernardino Mountains, Joshua Tree National Park, the desert mountains of southwestern Nevada and northwestern Arizona) of the desert bighorn sheep (*Ovis canadensis nelsoni*). For a detailed discussion of the DPS analysis for Peninsular bighorn sheep, see the Distinct Vertebrate Population Segment section of the 1998 final listing rule (March 18, 1998, 63 FR 13134). Therefore, we are changing the listed entity from a DPS of the species *Ovis canadensis*, to a DPS of the subspecies *Ovis canadensis nelsoni*. This final rule includes a change to the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h) to reflect this change.

**DPS Description, Life History, Distribution, Ecology, and Habitat**

No new substantial information pertaining to the DPS description, life history, ecology, or habitat of Peninsular bighorn sheep was received following the 2007 proposed rule to revise critical habitat for this DPS. Therefore, please refer to the final listing rule published in the **Federal Register** on March 18, 1998 (63 FR 13134), and the proposed rule to revise critical habitat published in the **Federal Register** on October 10, 2007 (72 FR 57740), for a discussion of the DPS's description, life history, ecology, and habitat.

### DPS Distribution

During the first public comment period for the proposed rule, we received new information regarding occurrence data that had been collected within the past year. The areas in which new sheep occurrence data was received include the South Santa Rosa Mountains along Grave Wash and the Jacumba Mountains near Interstate 8. The occurrence data received falls within the boundary of the 2001 critical habitat designation and the 2000 Recovery Plan area; therefore, we do not believe this new information markedly affects the known distribution of Peninsular bighorn sheep. However, we considered this new occurrence data and revised our proposed designation to include these areas recently used by Peninsular bighorn sheep (see the Notice of Availability (NOA), August 26, 2008, 73 FR 50498). The areas represented by the new occurrence data are included in this final designation (see the "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat to This Final Rule to Revise Critical Habitat" section of this final rule).

### Previous Federal Actions

As discussed in the proposed rule to revise critical habitat for this DPS, a July 31, 2006, court-approved consent decree enacted a limited partial vacatur of tribal, mining, and Desert Riders lands and remanded the critical habitat designation back to the Service for new rulemaking. The Service was obligated under the consent decree to submit a proposed revised critical habitat designation to the **Federal Register** on or before September 30, 2007, and a final revised critical habitat designation on or before September 30, 2008. We published a proposed revised critical habitat designation in the **Federal Register** on October 10, 2007 (72 FR 57740), and accepted public comments on the proposed revised designation for 60 days, ending December 10, 2007. Because significant new information was received, the parties agreed to extend the due date to the **Federal Register** of the final revised critical habitat rule to March 30, 2009. On August 26, 2008 (73 FR 50498), we opened a second public comment period on the proposed revised critical habitat designation and announced our intention to hold two public hearings on the proposed rule that were held in Palm Desert, California, on September 10, 2008. In the same **Federal Register** notice we announced the availability of our Draft Economic Analysis (DEA) (dated June 9, 2008) and announced

changes to the proposed rule. We accepted public comments during the second open comment period for 60 days, ending October 27, 2008. For more information on previous Federal actions concerning Peninsular bighorn sheep, refer to the final listing rule published in the **Federal Register** on March 18, 1998 (63 FR 13134), the final critical habitat designation published in the **Federal Register** on February 1, 2001 (66 FR 8650), and the proposed rule to revise critical habitat published in the **Federal Register** on October 10, 2007 (72 FR 57740).

### Summary of Comments and Recommendations

We requested written comments from the public during two comment periods on the proposed rule to revise critical habitat for Peninsular bighorn sheep. The first comment period opened October 10, 2007 (72 FR 57740), and closed December 10, 2007, and was associated with the publication of the proposed rule. We received several requests for a public hearing during this comment period. The second comment period opened August 26, 2008 (73 FR 50498), and closed October 27, 2008, and was associated with the notice of availability of the DEA, announcement of revisions to the proposed critical habitat, and a notice of public hearings that were held September 10, 2008. During these two public comment periods, we contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule to revise critical habitat for this DPS and the associated DEA.

During the first comment period, we received 212 public comments directly addressing the proposed revision of critical habitat: 1 from a Federal agency, 2 from State agencies, 1 from an elected official, and 208 from organizations and individuals. During the second comment period and the September 10, 2008, public hearings, we received 5,092 comments directly addressing the proposed revision of critical habitat for this DPS or the DEA: 1 from an elected official, 2 from State agencies, 3 from local governments, and 5,086 from organizations and individuals.

### Peer Review

In accordance with our policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we solicited expert opinions from five knowledgeable individuals with scientific expertise that included familiarity with the DPS, the geographic region in which it occurs, and

conservation biology principles. We received responses from all five of the peer reviewers.

We reviewed all comments received from the peer reviewers and the public for substantive issues and new information regarding critical habitat for Peninsular bighorn sheep. These comments are addressed below and incorporated into the final rule as appropriate.

### Peer Reviewer Comments

*Comment 1:* Several peer reviewers stated the proposed critical habitat is flawed because it does not provide for connectivity. One peer reviewer stated further that the proposal fragments the habitat available to the Peninsular bighorn sheep. Several peer reviewers asserted that, although essential habitat (as identified by the Peninsular bighorn sheep Recovery Team and depicted in the 2000 Peninsular bighorn sheep Recovery Plan) and critical habitat originally designated in 2001 promoted habitat connectivity among all subpopulations, the proposed critical habitat essentially severs the San Jacinto Mountains subpopulation (Unit 1) and the Carrizo Canyon subpopulation (Unit 3) from the remainder of the range (Units 2A and 2B). One peer reviewer also noted that movement of Peninsular bighorn sheep has been documented between these areas. According to the same peer reviewer, a collared ram from the San Jacinto Mountains was observed during July and August 2008 on several different occasions in the northern Santa Rosa Mountains with other bighorn sheep there. The peer reviewer concluded that not including these areas as critical habitat incorrectly suggests that these areas are not critical to the long-term recovery or survival of the population.

Another peer reviewer stated that movement between Units 1, 2A, 2B, and 3 is important and that critical habitat should be extended to protect corridors connecting the units. The same peer reviewer maintained that if any unit is isolated, the subpopulation may not be viable and that critical habitat should be expanded to include corridors for movement between units. One peer reviewer noted an extensive and irrefutable body of scientific literature that illustrates the importance of habitat connectivity. Two peer reviewers stated that, despite the acknowledgement in the proposed rule that connectivity is vital for this species' recovery, the revised critical habitat designation decreases connectivity or does not include corridors for movement. One peer reviewer asserted that habitat fragmentation will only promote the

decline of this DPS and goes directly against the recommendations of the Recovery Plan that the Service adopted.

*Our Response:* We agree with the peer reviewers that habitat connectivity is important to allow for movement between ewe groups and to maintain genetic variation. We also agree with the peer reviewer that an extensive amount of scientific evidence illustrates the importance of habitat connectivity, and we considered this information during the development of this critical habitat designation. We acknowledge that areas potentially providing connectivity between Units 1 and 2A and between Units 2B and 3 were included in the 2001 critical habitat designation; however, based on our reevaluation of the data available at the time of the 2001 designation, data obtained since, and our revised methodology for delineating critical habitat, we find that those areas do not meet the definition of critical habitat because the available data do not identify specific areas between these units that contain the physical or biological features essential to the conservation of the DPS.

The best available data do not provide any information indicating what areas, if any, Peninsular bighorn sheep use as connectivity corridors within the expansive areas between Units 1 and 2A and Units 2B and 3. Although the peer reviewers presented data showing that at least one collared ram has moved between Units 1 and 2A, we do not have occurrence data suggesting a specific corridor between these units. In addition, we have no data documenting natural sheep movement between Units 3 and 2B. As such we have not included specific corridors between Units 1 and 2A or between Units 3 and 2B in the designation. However, we will continue to monitor movement between these units to determine if specific movement corridors exist. In contrast, where the available data do support the identification of specific areas utilized by the DPS as movement corridors, such as between the ewe groups in the Santa Rosa Mountains and the Vallecito Mountains ewe group, those areas are included in the critical habitat designation.

We recognize this finding is different than what is outlined as essential habitat in the 2000 Recovery Plan and what was designated as critical habitat in the 2001 designation (which largely adopted the boundary delineated in the Recovery Plan). The Recovery Plan and 2001 critical habitat rule note that allowing for ram movement between ewe groups is important for maintaining genetic variation in the Peninsular bighorn sheep metapopulation. While

we believe connectivity areas are important for the Peninsular bighorn sheep's recovery, we have significantly more data available today than when the Recovery Plan and 2001 critical habitat were finalized. We have utilized the currently available data to more precisely identify areas meeting the definition of critical habitat; in particular, areas related to connectivity. Such areas are included in this designation where the data support the determination that such areas contain the physical and biological features essential to the conservation of the DPS. For other potential connectivity areas that were included in the 2001 designation, the available movement and occurrence data we have for those areas do not support the identification of specific areas that provide a movement corridor that is essential for the conservation of the DPS.

We believe it is important to note that critical habitat designation is a different process than development of a recovery plan. A critical habitat designation is a specific regulatory action that defines specific areas as critical habitat in accordance with the statutory definition. A recovery plan is a guidance document developed in cooperation with partners, which provides a roadmap with detailed site-specific management actions to help conserve listed species and their ecosystems. The term "essential," as used in the recovery plan, is not necessarily used in the same manner as it is used in the definition of critical habitat. The recovery plan provides important information about the species and the actions that are needed to bring about its recovery, while critical habitat identifies specific areas that are essential for the species' conservation.

The deviation from the Peninsular bighorn sheep Recovery Plan boundary and the 2001 final critical habitat designation is primarily the result of using a revised methodology to delineate critical habitat. Our revised methodology incorporates new information to best identify areas that meet the definition of critical habitat (see "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" section for more discussion). As a result, the final revised critical habitat boundary does not include areas the Recovery Plan identified as necessary for the conservation of the Peninsular bighorn sheep that we since determined (based on the best available data at this time) are not essential for the conservation of this DPS. Therefore, we believe the final revised critical habitat boundary more precisely maps

the physical and biological features that occur within the geographical area occupied by the Peninsular bighorn sheep at the time of listing, which includes those areas containing preferred habitat for sheep use.

There are likely additional areas outside of the final revised critical habitat boundary that contain some of the PCEs, including areas identified in the Recovery Plan and 2001 critical habitat. We recognize that areas outside of the critical habitat boundary are likely utilized by Peninsular bighorn sheep (primarily for movement of rams between ewe groups). However, as stated above, the data available at this time do not support the identification of specific areas containing the essential features that provide a movement corridor between Units 1 and 2A or between Units 2B and 3. Additionally, Unit 2A is continuous with Unit 2B and these units contain a large contiguous portion of the Peninsular Ranges allowing for movement between six ewe groups with these units. Furthermore, although we do not have information to identify specific movement corridors, the areas between Units 1 and 2A or between Units 2B and 3 are steep, rugged, and remote and there are no perceived threats in these areas. Therefore, we are confident that these areas will still be available for any natural sheep movements between units allowing for genetic connectivity.

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 Peninsular bighorn sheep, and critical habitat designations do not signal that habitat outside the designation is unimportant or may not contribute to recovery. Areas outside the final revised critical habitat designation will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and regulatory protections afforded by the section 7(a)(2) jeopardy standard and the prohibitions of section 9 of the Act if actions occurring in these areas may affect sheep; these protections and conservation tools will continue to contribute to recovery of the DPS.

Please see the "Criteria Used To Identify Critical Habitat" and "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" sections of this final rule for further discussion of this topic.

*Comment 2:* Two peer reviewers stated that exclusion of areas under the Agua Caliente Band of Cahuilla Indians Tribal Habitat Conservation Plan (Tribal HCP) and Coachella Valley Multiple

Species Habitat Conservation Plan (Coachella Valley MSHCP) is inappropriate because the Coachella Valley MSHCP and the Tribal HCP are not yet approved, and therefore provide absolutely no protection to Peninsular bighorn sheep or their habitat at this time. One peer reviewer stated it would be pre-decisional to exclude critical habitat based on these plans. Another peer reviewer suggested that managers and those making policy decisions should have solid documentation that the Peninsular bighorn sheep will receive the same level of enforceable protection from the Tribal HCP and the Coachella Valley MSHCP as provided by the Endangered Species Act. One peer reviewer stated that the proposed exclusion of tribal lands and lands covered by the Coachella Valley MSHCP are not supported by the best available science and that removal of these areas from critical habitat will increase the threats to the persistence and recovery of Peninsular bighorn sheep.

*Our Response:* We believe the exclusion of the identified tribal lands and the lands covered by the Coachella Valley MSHCP, which is now final, is appropriate based on the potential impacts associated with designating these areas as critical habitat. Section 4(b)(2) of the Act states that the "Secretary shall designate critical habitat, and make revisions thereto, on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat." The Act further states that the Secretary may exclude any 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 and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.

We believe that critical habitat designation would negatively impact the working relationships and conservation partnerships we have formed with permittees, the Tribe, and other private landowners (*i.e.*, other relevant impacts), and could result in decreased voluntary conservation efforts to benefit the Peninsular bighorn sheep. Additionally, as explained in detail in the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final rule, we believe these conservation partnerships will provide as much or more benefit than consultation under

section 7(a)(2) related to the critical habitat designation (the primary benefit of a designation).

The exclusion of Agua Caliente Band of Cahuilla Indians lands is not based on the 2007 draft Tribal HCP, but is primarily based on the importance of our government-to-government relationship with the Agua Caliente Band of Cahuilla Indians, our conservation partnership with the Tribe, and their current management of tribal lands as described in the 2001 Tribal Conservation Strategy (adopted by the Tribe on November 12, 2002, and implemented since its adoption). Furthermore, in accordance with the Secretarial Order 3206, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act" (June 5, 1997); the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951); Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2), we believe that fish, wildlife, and other natural resources on tribal lands are better managed under tribal authorities, policies, and programs than through Federal regulation wherever possible and practicable. Based on this philosophy, we believe that, in most cases, designation of tribal lands as critical habitat provides very little additional benefit to threatened and endangered species. Conversely, such designation is often viewed by tribes as unwarranted and an unwanted intrusion into tribal self governance, thus compromising the government-to-government relationship essential to achieving our mutual goal of managing for healthy ecosystems upon which the viability of threatened and endangered species populations depend. As an indication of the success of our partnership with the Agua Caliente Band of Cahuilla Indians and their commitment to natural resources management, a regional HCP is being developed, which incorporates protections and management of this DPS's essential physical and biological features.

The protections provided by the Coachella Valley MSHCP and the Tribe's resource management are consistent with the mandates under section 7 of the Act to avoid destruction or adverse modification of critical habitat and go beyond that prohibition by including active management and protection of essential habitat areas. These established partnerships demonstrate a continued commitment to conservation and aid in fostering

additional partnerships for the benefit of all sensitive species on tribally-owned or controlled lands, Coachella Valley MSHCP permittee-owned/controlled lands, and other private lands. Finally, we determined that the Tribe's management of its resources provides protection and management, in perpetuity, of lands that meet the definition of critical habitat for Peninsular bighorn sheep in Units 1 and 2A, and the Coachella Valley MSHCP provides further evidence of this partnership and continued protection of these features. Furthermore, we determined that the routine implementation of conservation measures in these units, combined with protections provided under the jeopardy standard of section 7 of the Act in these two occupied units, provide assurances that the DPS will not go extinct as a result of these exclusions.

Please see the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final rule for additional discussion of the Coachella Valley MSHCP and tribal conservation strategies and the benefits provided to Peninsular bighorn sheep.

*Comment 3:* Several peer reviewers stated that alluvial fans and low-elevation habitat provide important resources for Peninsular bighorn sheep and noted that the proposed critical habitat does not include extensive areas of alluvial fans and other low-elevation habitat that were included in the 2001 critical habitat designation. Two peer reviewers stated that, based on a geographic information systems (GIS) evaluation of proposed critical habitat by California Department of Parks and Recreation staff, nearly 250,000 ac (101,172 ha) of habitat have been removed from the eastern side of critical habitat, as compared to critical habitat designated in 2001. The peer reviewers further stated this area includes alluvial fans, washes, bajadas (*i.e.*, converging alluvial fans), canyon bottoms, and open playas, which provide important forage resources and which are used during movement between more mountainous terrain. One peer reviewer stated that the fact that bighorn sheep use gentle terrain, such as alluvial fans and washes, despite potentially increasing their risk of predation, provides strong evidence that these areas provide critically important resources.

Another peer reviewer commented that the 2007 proposed revision eliminates key low-slope areas and raises the boundary upslope, which they assert is a contradiction to the best available science. One peer reviewer noted there are contradictions of slope

condition in the rule based on straight lines drawn on the critical habitat maps, even though the text in the proposed rule describes the importance of gentle slopes to bighorn sheep.

*Our Response:* We agree that low-elevation habitat is important for Peninsular bighorn sheep because these areas can provide seasonal abundance of forage vegetation and water resources. In our August 26, 2008, NOA (73 FR 50498), we announced a revision to our criteria used to identify critical habitat to include occurrence data from 1988 to 2008. Because of comments received from peer reviewers and the public about low-elevation habitat and the revision of our criteria used to identify critical habitat to include a larger occurrence data set, we reevaluated and revised our proposed revised critical habitat boundary. In our August 26, 2008, NOA (73 FR 50498), we announced changes to the proposed critical habitat revision, including the addition of 36,240 ac (14,667 ha) of habitat for Peninsular bighorn sheep, the majority of which is low-elevation, low-slope, or alluvial-fan habitat on the eastern edge of the Peninsular Ranges. We acknowledge there are some low-elevation areas included in the 2001 designation of critical habitat that are not included in this final designation. However, currently available data do not support a determination that these areas outside the geographical area occupied by the species at the time of listing are essential for the conservation of the sheep; therefore these areas do not meet the definition of critical habitat.

Please see the "Criteria Used To Identify Critical Habitat," the "Summary of Changes From the 2001 Critical Habitat Designation to the 2007 Proposed Rule To Revise Critical Habitat," and the "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat to This Final Rule To Revise Critical Habitat" sections of this final rule for further discussion of this topic.

*Comment 4:* One peer reviewer objected to the statement in the proposed critical habitat rule that essential habitat delineated in the Recovery Plan (and in the 2001 critical habitat designation) included a "buffer" of 0.5 mile (mi) (0.8 kilometer (km)) around slopes greater than or equal to 20 percent. The peer reviewer stated that buffer areas identified in the Recovery Plan were added as "essential habitat" (as defined in the Recovery Plan) because these areas include important resources for bighorn sheep; they were not added as a buffer around essential habitat. The peer reviewer

reiterated what was written in the Recovery Plan (*i.e.*, that bighorn sheep have been observed at great distances from slopes of greater than or equal to 20 percent, and the recovery team chose to define essential habitat as those areas within 800 m (2,625 ft) of slopes of greater than or equal to 20 percent). Additionally, the peer reviewer stated that the Peninsular bighorn sheep recovery team recognized that this area would capture the majority of Peninsular bighorn sheep use in these areas and that inclusion of these areas represented inclusion of important resources.

*Our Response:* The Recovery Plan acknowledges that the 800-m (2,625-ft) area around slopes greater than or equal to 20 percent is a buffer. Page 157 of the Recovery Plan describes the process of delineating these areas as follows: "A buffer of 0.8 kilometer (0.5 mile) was then applied to the perimeter of all areas of slope [greater than or equal to 20 percent] in the derivative grid." The inclusion of this area around 20 percent slopes adds expanses of land to the Recovery Plan area and the 2001 critical habitat designation, but we have relatively little to no occurrence data indicating that sheep use those areas. By including these 0.5-mi (0.8-km) buffers in the Recovery Plan, a boundary was developed that included almost any location that a Peninsular bighorn sheep could possibly roam, but such a buffer would not meet the statutory definition of "critical habitat," because such areas are not essential for the conservation of the DPS. As stated in section 3(5)(C) of the Act, except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species. Please see the "Criteria Used To Identify Critical Habitat," and the "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" sections of this final rule for further discussion of this topic.

*Comment 5:* One peer reviewer stated that the proposed delineation does not appear to be based on good science or conservation principles and that the major reduction in area (as compared to the original critical habitat delineated in 2001) will jeopardize the chances of recovery and survival of this population. A second peer reviewer stated that the proposal to remove over 50 percent of critical habitat is contrary to the PCEs as well as the Recovery Plan. A third peer reviewer believes the revised critical habitat is geared towards sustaining the current, low population

level of Peninsular bighorn sheep, rather than planning for recovery. Finally, a fourth peer reviewer stated it is unclear what changed between the time of the 2000 Recovery Plan and today that would cause certain areas to be eliminated that were previously determined as essential for the DPS's recovery.

*Our Response:* The designation of critical habitat for Peninsular bighorn sheep is based on the best scientific data available regarding the DPS, including: (1) A compilation of data from peer-reviewed, published literature; (2) unpublished or non-peer reviewed survey and research reports; and (3) opinions of biologists knowledgeable about Peninsular bighorn sheep and their habitat. Consequently, the PCEs, as described in this final rule, represent our best assessment of what habitat components are essential for the conservation of Peninsular bighorn sheep, and we believe that our final revised designation is adequate to ensure the conservation of this DPS throughout its extant range.

The Act defines critical habitat as (1) the specific areas within the geographical area occupied by the species at the time it is listed 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 (2) 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. Consistent with section 3(5)(C) of the Act, the designation does not include the entire geographical area which can be occupied by Peninsular bighorn sheep, but is limited to those areas that we determined meet the definition of critical habitat. The reduction in total area from what was identified as important for the Peninsular bighorn sheep in the Recovery Plan and designated in 2001 is primarily the result of: (1) Exclusions of habitat under section 4(b)(2) of the Act; (2) revision of the primary constituent elements; (3) revision of our criteria used to identify critical habitat; (4) removal of lands within the geographical area occupied by the DPS at the time it was listed that do not contain the physical or biological features as identified by the PCEs in the appropriate quantity and spatial arrangement essential to the conservation of the DPS; and (5) removal of lands outside the geographical area occupied by the DPS at the time it was listed that are not

essential for the conservation of the DPS.

The 2001 critical habitat designation was predominantly based on the 2000 Recovery Plan, and we used the best available scientific information at that time to delineate critical habitat. Since 2001, we received significant additional occurrence data and formulated a better understanding about specific habitat requirements of this DPS that was not known when we first designated critical habitat for the Peninsular bighorn sheep. We utilized this new information to appropriately revise the PCEs and criteria used to identify critical habitat, consistent with the Act. Additionally, case law has developed since 2001 regarding the Act's requirements and the definition of critical habitat (e.g., *The Cape Hatteras Access Preservation Alliance v. U.S. Dep't of the Interior*, 344 F. Supp. 2d 108 (D.D.C. 2004); *Home Builders Ass'n of N. Cal. v. U.S. Fish and Wildlife Service*, U.S. Dist. LEXIS 80255 (E.D. Cal. 2006); and *Arizona Cattle Growers' Ass'n v. Kempthorne*, 534 F. Supp. 2d 1013 (D. Ariz. 2008)).

Therefore, we refined our approach to this critical habitat designation, including identification of the geographical areas occupied by the DPS at the time of listing, identification of physical or biological features essential to the conservation of the DPS, determination of any areas outside the geographical area occupied by the DPS at the time of listing that are essential for the conservation of the DPS, and appropriate exclusions under section 4(b)(2) of the Act. A complete discussion of how data collected since the 2001 designation were utilized to refine the proposed designation can be found in the "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" and "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat To This Final Rule To Revise Critical Habitat" sections of this final rule.

We delineated critical habitat for the Peninsular bighorn sheep using the criteria presented in the "Criteria Used To Identify Critical Habitat" section of this final rule. Application of these criteria results in the determination of the physical and biological features that are essential to the conservation of this DPS, identified as the DPS's PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the DPS. Therefore, not all areas supporting the identified PCEs will meet the definition of critical habitat.

Refer to our response to Comment 1 for a discussion on the difference between critical habitat designation and development of a Recovery Plan.

Our proposed designation, in combination with our August 26, 2008, NOA, which announced the addition of areas to the proposed designation, and this final designation accurately describe all specific areas meeting the statutory definition of critical habitat for Peninsular bighorn sheep. See the "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" and "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat To This Final Rule To Revise Critical Habitat" sections of this final rule for more information.

*Comment 6:* Two peer reviewers pointed out that the proposed critical habitat rule states that researchers have documented movement of rams "between up to three ewe groups." The peer reviewers suggested this statement incorrectly cites Rubin *et al.* (1998), which documented male movement among at least six groups, and the proposed rule therefore underestimates the importance of connectivity throughout the range. The peer reviewers stated that researchers have documented movement of radio collared males and females among all eight subpopulations, demonstrating that these subpopulations are currently linked via animal movement. One peer reviewer stated that historic ram movement data between the northern Santa Rosa Mountains and the San Jacinto Mountains was not used in delineating proposed critical habitat. The peer reviewer further stated that they believe the Service has had this data for years and, if used, they believe the Service would not have developed a critical habitat designation lacking connectivity between critical habitat units.

*Our Response:* We corrected the section of the critical habitat designation involving the Rubin *et al.* (1998) citation mentioned above and included the additional information on the metapopulation structure of Peninsular bighorn sheep into the PCEs discussion in this rule. With regard to historic ram movement data and connectivity, see our response to Comment 1 and the "Criteria Used To Identify Critical Habitat" and "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" sections of this final rule for further discussion.

*Comment 7:* One peer reviewer believes that the critical habitat

designation should encompass areas of historical occupancy if it is intended to aid in the recovery of the Peninsular bighorn sheep.

*Our Response:* Please refer to our response to Comment 5 for the statutory definition of critical habitat. The Service may designate as critical habitat areas outside the geographical area occupied by a species at the time it was listed (i.e., historical habitat) only when we can determine that those areas are essential for the conservation of the species (section 3(5)(A)(ii) of the Act). We have determined that designating critical habitat solely within the geographical area occupied by the DPS at the time it was listed will provide for the conservation of the Peninsular bighorn sheep. We, therefore, did not include areas of historical occupancy that were outside of these areas. As previously mentioned in this final rule, critical habitat designations do not signal that habitat outside the designation is unimportant or may not contribute to a species' recovery. See our response to Comment 5 above and the "Criteria Used To Identify Critical Habitat" section of this final rule for more information.

*Comment 8:* One peer reviewer had concerns about designating critical habitat based on occupancy at the time of listing. The peer reviewer identified what the peer reviewer believed to be two shortcomings of this approach, as follows: (1) Critical habitat is designated based on the distribution of a species at its lowest abundance level, and most likely its most limited spatial distribution, thereby reducing the probability of encompassing areas required for full recovery; and (2) designated critical habitat assumes that all areas have been sufficiently surveyed to document occupancy and doesn't address false absences. Another peer reviewer believes that the Service failed to recognize false absences as a result of this approach, and that this is a grave error because the peer reviewer believes many important areas may not be included in the critical habitat designation.

*Our Response:* In response to the peer reviewer's comment and other public comments related to the delineation of critical habitat based on occupancy at the time of listing, we revised our criteria used to delineate critical habitat as announced in the NOA published in the **Federal Register** on August 25, 2008 (73 FR 50498). As a revision to our criteria, we included areas with occupancy data indicating they are currently occupied or areas with occupancy data indicating they were occupied at some point between 2008

(present time) and 1988 (*i.e.*, the time of listing (1998) less 10 years, which is the average lifespan of Peninsular bighorn sheep). Use of a data set that considers a larger time-span of occurrence data accounts for the large fluctuations in Peninsular bighorn sheep population levels over the last two decades, and provides a reasonable delineation of the geographical area occupied by the species at the time of listing. After rangewide estimates were made in the 1970s, the population was estimated as high as 1,171 in 1974 (Weaver 1974, p. 5). The population was estimated at 570 individuals in 1988 (Weaver 1989, p. 11). We reported in the final listing rule for Peninsular bighorn sheep that the population at that time (1998) was approximately 280 individuals (March 18, 1998, 63 FR 13134). The most recent estimate from 2006 puts the population at approximately 800 individuals (Torres 2007, p. 1). By considering occurrence data between 1988 and the present, we are not designating critical habitat based on the distribution of the DPS at its lowest abundance level, nor its most limited spatial distribution as the peer reviewer suggested.

We realize that false absences can result from rangewide surveys for Peninsular bighorn sheep. Additionally, we are aware that not all areas within the range of the DPS have been surveyed or studied equally. For example, there is a disproportionate amount of data from the northern half of the Peninsular Ranges in the United States, compared to the southern half that has not been studied as thoroughly. Regardless, we used the best available scientific information and occurrence data in determining areas occupied by Peninsular bighorn sheep. No information is available to indicate which portions of the DPS's range might include false absences.

*Comment 9:* One peer reviewer believes that delineation of critical habitat must not rely on simple occurrence data alone, but should also rely on robust methods of identifying and mapping critical habitat based on habitat features.

*Our Response:* We agree with the peer reviewer's statement. We delineated critical habitat based on occurrence data and a combination of habitat features. We designated critical habitat for the Peninsular bighorn sheep within areas that we determined were occupied at the time of listing and that contain the physical and biological features essential to the conservation of the DPS. Lands were designated based on sufficient essential features being present to support the life processes. Please see our response to Comment 5

and the "Criteria Used To Identify Critical Habitat" section of this final rule for detailed discussions.

*Comment 10:* One peer reviewer noted a large number of known Peninsular bighorn sheep locations (documented post-listing) that were not included in the proposed revised critical habitat and further stated that it was unclear why these areas were not included. Another peer reviewer listed multiple areas that are documented as occupied at or since the time of listing but were not included in the proposed critical habitat designation. The peer reviewer indicated that occurrence data documenting occupancy were provided to the Service prior to the delineation of proposed critical habitat, and further stated that these areas provide lambing habitat, foraging areas, connectivity between mountainous areas, and important water sources. The peer reviewer determined that nearly 1,000 of these locations were not included in the proposed critical habitat following an examination of occurrence data collected during 2001 to 2003 with the use of Global Positioning System (GPS) collars in areas between Highway 74 and the southern edge of the Vallecito Mountains. Finally, another peer reviewer believes there are large areas without location data of Peninsular bighorn sheep that are included as critical habitat and areas with bighorn sheep location data that are not included as critical habitat.

*Our Response:* Upon receiving the peer reviewers' comments, we examined the occurrence data considered in the delineation of the proposed revised critical habitat and found that a set of data was missing from our GIS database. Subsequently, we included that occurrence data into our GIS database and double-checked to ensure that all occurrence records submitted to the Service were included for our analyses. In light of this data and our revised criteria used to identify critical habitat (*i.e.*, a data set that includes data since 1988), we revised our proposed critical habitat boundary, as reported in the NOA, to include the areas represented by the location data (August 26, 2008, 73 FR 50498).

*Comment 11:* One peer reviewer suggested the proposed revised critical habitat could have been improved had it been an "open process" that included the expertise of biologists on the Recovery Team, as well as others who have worked with bighorn sheep for decades, like what was done for the Peninsular bighorn sheep Recovery Plan. The peer reviewer believes that the resulting proposed critical habitat designation reflects a hurried process

that used arbitrary decision-making, is not scientifically based, and contradicts the Services' Recovery Plan for the DPS.

*Our Response:* Contrary to the opinion of the peer reviewer, designating critical habitat is an open process. We solicited additional expert opinion and public comment through publication of our proposed revised rule that was developed using the best scientific data available at that point in time. As stated in the proposed rule, comments and materials received, as well as supporting documentation used in the preparation of the proposed rule, are available for public inspection at the Carlsbad Fish and Wildlife Office. In accordance with section 4(5)(A) of the Act and the regulations at 50 CFR 424.16(c)(1), the Secretary shall—

(i) Publish notice of the proposal in the **Federal Register**;

(ii) Give actual notice of the proposed regulation (including the complete text of the regulation) to the State agency in each State in which the species is believed to occur, and to each county or equivalent jurisdiction therein in which the species is believed to occur, and invite the comment of each such agency and jurisdiction;

(iii) Give notice of the proposed regulation to any Federal agencies, local authorities, or private individuals or organizations known to be affected by the rule;

(iv) Insofar as practical, and in cooperation with the Secretary of State, give notice of the proposed regulation to list, delist, or reclassify a species to each foreign nation in which the species is believed to occur or whose citizens harvest the species on the high seas, and invite the comment of such nation;

(v) Give notice of the proposed regulation to such professional scientific organizations as the Secretary deems appropriate; and

(vi) Publish a summary of the proposed regulation in a newspaper of general circulation in each area of the United States in which the species is believed to occur. Further, the regulations at 50 CFR 424.16(c)(2) state that at least 60 days shall be allowed for public comment following publication in the **Federal Register** of a rule proposing the listing, delisting, or reclassification of a species, or the designation or revision of critical habitat.

On May 14, 2007, representatives from the Carlsbad Fish and Wildlife Office and the Regional Office, including the Regional Director, met with recovery team members in part to inform members that we were initiating work to propose revisions to designated critical habitat for the Peninsular

bighorn sheep. At that meeting, we requested that recovery team members submit any data they wanted us to consider in our proposed revision. We received data from one recovery team member in response to this request.

During the development of this revision to critical habitat for the Peninsular bighorn sheep, we followed the appropriate guidance and regulations regarding inclusion of expert biologists and other appropriate entities, including the general public. In accordance with our policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we solicited expert opinions from five knowledgeable individuals with scientific expertise that included familiarity with the DPS, the geographic region in which it occurs, and conservation biology principles. We reviewed all comments received from the peer reviewers and the public for substantive issues and new information regarding the designation of critical habitat for Peninsular bighorn sheep.

Under section 4(f)(2) of the Act, the Secretary may procure the services of appropriate public and private agencies and institutions and other qualified persons in developing and implementing recovery plans. However, the Act limits the use of recovery teams appointed under this subsection to the development and implementation of recovery plans. The Act does not contain a provision for development of critical habitat teams. However, the Service could set up a critical habitat team, but it would be subject to the Federal Advisory Committee Act (FACA), unlike a recovery team that is exempt from FACA. Since the Act contains specific timeframes for completion of critical habitat designations, creating a critical habitat team would slow the process of designation of critical habitat causing us to be out of compliance with the statutory requirements of the Act. However, consistent with our peer review policy and the Act's standard of using the best available scientific data, we openly and publically solicited information for consideration in rule development and solicited peer review of our proposal.

In total, we received comments from all five peer reviewers that we solicited comments from, and we received 5,299 comments from the general public during two public comment periods and two public hearings. Therefore, we believe we followed an open process during development of the Peninsular bighorn sheep revised critical habitat designation.

Regarding the peer reviewer's beliefs that the proposed critical habitat designation reflects a hurried process that used arbitrary decision-making and was not scientifically based, we disagree with this comment. As noted above, we solicited information from the entire Peninsular bighorn sheep recovery team prior to the proposed revisions to the designation. We also solicited expert opinions from five knowledgeable individuals with scientific expertise that included familiarity with the DPS, the geographic region in which it occurs, and conservation biology principles. Additionally, the designation of critical habitat for Peninsular bighorn sheep is based on the best scientific data available regarding the DPS, including: (1) A compilation of data from peer-reviewed, published literature; (2) unpublished or non-peer reviewed survey and research reports; and (3) opinions of biologists knowledgeable about Peninsular bighorn sheep and their habitat (see our response to Comment 5 and the "Criteria Used To Identify Critical Habitat" section for additional discussion on use of available scientific data and how this data was used to develop criteria for identifying critical habitat).

*Comment 12:* One peer reviewer believes it is impossible to duplicate the delineation of the revised critical habitat based on the Service's poorly described methods and an inadequate explanation of how the PCEs were used to delineate critical habitat. Another peer reviewer believes the proposed rule does not provide specifics on how proposed revised critical habitat was delineated, nor does it include discussion of the actual methods of identifying and mapping the PCEs. The same peer reviewer stated that along several sections of the proposed revised critical habitat boundary, the boundary line follows a perfectly straight course, which does not appear to conform to (or follow) any obvious biological or topographical feature; therefore, the peer reviewer questioned how this boundary line was placed. Another peer reviewer could not identify the specific methods used to create the revised boundary of the proposed rule and further stated that the boundary lines give the appearance of being hand-drawn, rather than based on a scientific method.

*Our Response:* As discussed in our response to Comment 5 above and the "Criteria Used To Identify Critical Habitat" section of this final rule, we delineated critical habitat for the Peninsular bighorn sheep using the following criteria: (1) Areas that contain the PCEs required by the DPS as

determined from aerial imagery and GIS data on vegetation, elevation, and slope; (2) areas within the ewe group distribution (*i.e.*, subpopulations) boundaries identified by Rubin *et al.* (1998); (3) areas occupied by the subspecies between 2008 (present time) and 1988; and (4) areas where occupancy data points indicate repeated Peninsular bighorn sheep use, but which were not captured within the ewe group distribution boundaries identified by Rubin *et al.* (1998). Application of these criteria results in the determination of the physical and biological features that are essential to the conservation of this DPS, identified as the DPS's PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the DPS. Since the 2007 proposed rule, we revised the "Criteria Used To Identify Critical Habitat" section of this rule to provide more detail and description of the stepwise process used, data considered, habitat features mapped, and method used to delineate critical habitat boundaries. The boundaries were drawn with GIS software using detailed aerial imagery maps and data layers of occurrences and habitat information. Any straight lines along the boundary of critical habitat are the result of following habitat features that are naturally straight in appearance.

*Comment 13:* One peer reviewer asked if a model was employed, and if so, describe the type and state whether it was based on expert opinion.

*Our Response:* We did not use a model to delineate critical habitat for the Peninsular bighorn sheep. For more information on how we delineated critical habitat, see the "Criteria Used To Identify Critical Habitat" section of this final rule.

*Comment 14:* One peer reviewer inquired as to whether or not PCEs were weighted in the process of revising critical habitat.

*Our Response:* The PCEs were not weighted in the process of revising critical habitat.

*Comment 15:* One peer reviewer expressed concern that Anza Borrego Desert State Park's vegetation maps were not utilized in the critical habitat revision. The peer reviewer believes that vegetation has a critical influence on what type of habitat the Peninsular bighorn sheep use; therefore, he asserts that this information would have been instrumental in delineating a more accurate critical habitat boundary. Another peer reviewer asked which vegetation layer was used in delineating critical habitat.

*Our Response:* We believed it was important to use a GIS vegetation data



layer that provided a consistent analysis over the entire extent of the Peninsular bighorn sheep range. Any vegetation layers that were prepared for a specific entity, including a park (such as Anza Borrego Desert State Park) or individual county, were not all-encompassing and therefore inappropriate for the analysis. The proposed and final revised critical habitat includes land in three separate counties (Imperial, Riverside, and San Diego). Therefore, the GIS layer that we used for the vegetation analysis portion of defining proposed critical habitat for the Peninsular bighorn sheep was the Fire and Resource Assessment Program layer created by the California Department of Forestry and Fire Protection. For further information on this vegetation data, see their Web site at: <http://frap/cdf/ca/gov>. This vegetation layer was most appropriate because it extended over the entire area of the Peninsular Ranges and allowed for consistency in our analysis of vegetation across the range of this DPS.

*Comment 16:* One peer reviewer was concerned that our methodology included an elevation cut-off of 4,600 ft (1,400 m) to guide the critical habitat boundary line. The peer reviewer stated that, at times, Peninsular bighorn sheep rely on areas higher than this, especially on the western side of the Santa Rosa Mountains.

*Our Response:* We acknowledge that Peninsular bighorn sheep have occasionally been observed above 4,600 ft (1,400 m) elevation; however, it is commonly accepted that sheep within the Peninsular Ranges are primarily restricted to lower elevations (see the "Primary Constituent Elements (PCEs)" section for more information). We do not have evidence to suggest that areas above 4,600 ft (1,400 m) elevation are essential for the conservation of this DPS, and the commenter did not provide information to support the assertion that sheep rely on higher elevations. As previously mentioned in this final rule, critical habitat designations do not signal that habitat outside of the designation is unimportant or may not contribute to recovery (see our response to Comment 1 above).

*Comment 17:* One peer reviewer stated that the rule indicates that areas with canopy cover greater than 30 percent were not included as critical habitat. The peer reviewer asked what information was used to determine this cut-off point and what GIS data layer was used to identify these areas.

*Our Response:* Generally, bighorn sheep primarily rely on their sense of sight to detect predators. Research shows that bighorn sheep will avoid

habitat where dense vegetation reduces visibility and, instead, prefer to use habitat with vegetative canopy cover less than or equal to 30 percent (Risenhoover and Bailey 1985, p. 799; Etchberger *et al.* 1989, p. 906; Dunn 1996, p. 1). Bighorn sheep in the Peninsular Ranges avoid higher elevations (above 4,600 ft (1,400 m)), likely due to decreased visibility (and therefore increased predation risk) associated with denser vegetation (i.e., chaparral and conifer woodland) found at higher elevations (Service 2000, p. 10).

The GIS layer that was used for the vegetation analysis for the proposed revised critical habitat designation for the Peninsular bighorn sheep was the Fire and Resource Assessment Program layer created by the California Department of Forestry and Fire Protection. With this layer, we were able to highlight areas likely to have vegetative canopy cover over 30 percent (i.e., chaparral and conifer woodland). Subsequently, we used detailed aerial imagery to focus on those areas and visually confirm whether or not those areas had canopy cover above 30 percent. If areas appeared to have canopy cover over 30 percent, those areas were removed from the critical habitat delineation. Therefore, vegetated areas within the final revised critical habitat designation include only those areas that provide lower density vegetation and better visibility to detect potential predators.

*Comment 18:* One peer reviewer inquired as to how we identified areas unlikely to be used by Peninsular bighorn sheep.

*Our Response:* As required by section 4(b)(2) of the Act, we used the best scientific data available in designating critical habitat, and more specifically (as per section 3(5)(A) of the Act), in determining the specific areas within the geographical area occupied by the DPS at the time of listing that contain the physical or biological features essential to the conservation of the DPS which may require special management considerations or protection, as well as in determining if any specific areas outside the geographical area occupied by the DPS at the time of listing are essential for the conservation of the DPS. Areas unlikely to be used by Peninsular bighorn sheep were identified by Service biologists using detailed aerial imagery maps of the Peninsular Ranges with GIS information on vegetation, elevation, slope, and sheep occurrence data from 1988 to 2008. Please see our responses to Comments 5, 16, and 17 and the "Criteria Used To Identify Critical

Habitat" section for additional information related to how we used the data to delineate critical habitat.

*Comment 19:* One peer reviewer noted that the proposed rule (72 FR 57740, October 10, 2007) includes language describing how the delineation of critical habitat is supported by a draft habitat model provided to the Service by Peninsular bighorn sheep biologists, because areas designated as critical habitat "roughly fall within the upper level habitat suitability classes derived from the preliminary model." The peer reviewer believes the Service incorrectly interpreted the draft model, suggesting that the Service did not understand the model results. The peer reviewer also stated that although the recent models are based on two years of GPS data from a subset of the total population, and may therefore underestimate use of some areas, they provide support for the essential habitat line and the original (2001) critical habitat line. The peer reviewer believes that the models do not provide support for the currently proposed revised critical habitat delineation.

*Our Response:* As stated in the proposed rule, we did not adopt the above mentioned predictive habitat model in our critical habitat delineation process because: (1) It was in draft form and had not been peer reviewed; and (2) it was based on only two years of GPS data from a subset of the Peninsular bighorn sheep population. In response to comments received from peer reviewers and the public, we reanalyzed the draft predictive habitat model. However, we continue to believe it is inappropriate to draw conclusions on whether the model supports or does not support our revised critical habitat designation for this DPS because there are limitations in the data set used to create the model (i.e., only two years of GPS data), the model is in draft form, and has not been peer reviewed.

*Comment 20:* One peer reviewer believes that the proposed rule (as written) suggests that the proposed critical habitat delineation was based partially on ewe group delineations in Rubin *et al.* (1998). The peer reviewer noted that the Rubin *et al.* (1998) ewe group delineation was intended to document the approximate known distribution of ewe groups at that time. The peer reviewer further stated the ewe group delineation was not intended to represent essential habitat, it does not include additional areas used by rams, and it does not represent areas of connectivity. The peer reviewer clarified that the ewe group delineation in Rubin *et al.* (1998) was based on a small number of radiocollared sheep

(GPS collars had not been used in the study at that time), it did not include locational information on sheep in the San Jacinto Mountains, and it was based on data collected in the mid-1990s when the population of Peninsular bighorn sheep was at its smallest known size. Finally, the peer reviewer contends that the proposed rule is implying that ewe-group delineations in Rubin *et al.* (1998) were based on animal locations collected during 1971–1996 (p. 57747). However, the peer reviewer stated that ewe-group delineations were actually based on data collected during 1993–1996; Rubin *et al.* (1998) did use data collected since 1971, but those data were only represented by water-hole count data (used to examine long-term abundance trends). Therefore, the peer reviewer believes that the ewe group delineations in Rubin *et al.* (1998) present a minimum distribution of bighorn sheep in the Peninsular Ranges.

*Our Response:* As stated in this final rule and the “Criteria Used To Identify Critical Habitat” section of the NOA (73 FR 50498, August 26, 2008), we mapped ewe group areas from Rubin *et al.* (1998) over GIS imagery of the Peninsular Ranges to delineate the distribution of ewe groups in the proposed revised critical habitat as an initial step in the delineation process. We consider Rubin *et al.* (1998) to be the best available data on Peninsular bighorn sheep ewe group distribution. The ewe group delineations presented in Rubin *et al.* (1998) were based on data collected during 1993 to 1996 (not 1971 to 1996 as incorrectly stated in the proposed rule (72 FR 57740, October 10, 2007)), when the population of Peninsular bighorn sheep was at historically low levels. Therefore, the ewe group delineations present a minimum distribution of bighorn sheep in the Peninsular Ranges. However, this is the only data we are aware of that identifies the distribution of ewe groups and subgroups within the Peninsular Ranges. Furthermore, we believe that the ewe groups presented in Rubin *et al.* (1998) accurately depict the general locations of the known ewe groups in these ranges and provide a logical starting point for the delineation of critical habitat.

*Comment 21:* One peer reviewer believes that climate change will undoubtedly have an effect on habitat, and changes in temperature and precipitation will likely increase the importance of upper elevation habitats. Additionally, the peer reviewer believes the proposed revision to critical habitat excludes some high elevation areas currently occupied by bighorn sheep and reduces the protection of habitat

that will be essential for conservation of the Peninsular bighorn sheep in the future.

*Our Response:* Peninsular bighorn sheep generally do not use the upper elevation habitats of the Peninsular Ranges at this time because those areas are more densely vegetated and provide conditions of poor visibility. For further discussion, see our responses to Comments 16 and 17.

We acknowledge that climate change could result in changes in the resources and habitat condition along an elevational gradient in the Peninsular Ranges. However, the scientific evidence available at this time does not suggest that upper elevation habitats in the Peninsular Ranges will become more visually open (*i.e.*, more suitable for Peninsular bighorn sheep) as a result of a climate change scenario like that described by the peer reviewer. The peer reviewer did not submit any specific data supporting the contention for the need to expand critical habitat to include currently unoccupied upper elevation habitat. We are unaware of any studies or data that would indicate this request is appropriate. In fact, Epps *et al.* (2004, p. 111) applied a climate change model that assumed an increase in temperature of 2 degrees Celsius and a decrease in precipitation of 12 percent and found no change in the probability of extinction for sheep in those ranges supporting the Peninsular bighorn sheep. Should additional data become available, we may revise this final critical habitat designation, subject to available funding and other conservation priorities.

*Comment 22:* One peer reviewer agreed with the Service regarding correction of an earlier error to recognize this listed entity as a DPS of the subspecies *Ovis canadensis nelsoni*. The peer reviewer also stated that no attempt was made by the Service in the proposed rule to give the reader a full geographic picture of how this DPS fits into the larger distribution of that subspecies. The peer reviewer believes that this animal should be referred to as a DPS, avoiding the term subspecies. The peer reviewer believes that if Peninsular bighorn sheep is defined as simply “bighorn sheep in the Peninsular Ranges,” then the word Peninsular in that phrase is redundant and unnecessary. The peer reviewer believes the problem is that the use of Peninsular bighorn sheep in this context gives the reader a false impression that there is something unique and different about this subspecies. The peer reviewer suggested this could be avoided by referring to the animal as “bighorn sheep in the Peninsular Ranges.”

Another peer reviewer stated that the commonly accepted vernacular name for *Ovis canadensis nelsoni* is Nelson’s bighorn sheep and not Peninsular bighorn sheep. The peer reviewer suggested the Service refer to this DPS throughout the rule as “Nelson’s bighorn sheep in the Peninsular Ranges.”

*Our Response:* As discussed in the Background section of this final rule, we are formally changing the listed entity as a DPS of the desert bighorn sheep, *Ovis canadensis nelsoni*, and this final rule includes such change to the list of Endangered and Threatened Wildlife at 50 CFR 17.11(h). Within this final rule, we believe it is appropriate to continue to refer to these sheep with the common name Peninsular bighorn sheep. Further, we will refer to this listed entity as a DPS, not a species or subspecies as we have in previous **Federal Register** publications. We also have included information on the geographic distribution of the desert bighorn sheep subspecies, of which Peninsular bighorn sheep are a DPS, in the “Background” section of this final rule.

*Comment 23:* One peer reviewer noted that in the proposed rule the Service stated it “has been hypothesized that desert bighorn sheep can survive without a permanent water source,” although the Service did not provide a citation. The peer reviewer believes the most appropriate citation should have been Krausman *et al.* (1985), which demonstrated this to be true for a Sonoran Desert population. The peer reviewer further believes that more meaningful discussion would have compared high temperatures for the population studied by Krausman *et al.* (1985) with those in the Peninsular Ranges, from which a greater need for water could be surmised. The same peer reviewer noted that the Service also did not provide a citation in the proposed rule when referring to water as “especially important to lactating ewes. \* \* \*” The peer reviewer believes that Bleich *et al.* (1997) refuted this as a myth.

*Our Response:* In light of the peer reviewer’s comment, we included the citation of Krausman *et al.* (1985) into our discussion of water in the “Primary Constituent Elements (PCEs)” section of this final rule. All other variables (*e.g.*, vegetation, elevation, climate, terrain) being the same, we agree with the peer reviewer that it could be assumed that sheep living in ranges with higher temperatures would have a greater need for water. However, we are not aware of an analysis comparing the Peninsular Ranges to the Little Harquahalas studied

by Krausman *et al.* (1985, p. 26). Regarding the peer reviewer's comment regarding Bleich *et al.* (1997), we reevaluated the available literature on the importance of water to lactating ewes. As a result, we revised the discussion of water in the "Primary Constituent Elements (PCEs)" section of this final rule.

*Comment 24:* One peer reviewer stated the proposed rule lists sites for breeding and space for mating as key habitat elements, but the peer reviewer believes there is no evidence to suggest that lack of breeding is a limiting factor for these sheep. The peer reviewer also believes there is no evidence that breeding takes place in any habitat other than where normal activities occur during the months in which breeding and mating take place.

*Our Response:* We acknowledge the peer reviewer's concerns regarding Peninsular bighorn sheep breeding habitat. We did not suggest in the proposed rule that lack of breeding is a limiting factor for Peninsular bighorn sheep or that breeding occurs exclusively in a specific type of habitat. Rather, our intention was to highlight the importance of maintaining space for individual and population growth and normal behavior, which includes breeding.

*Comment 25:* One peer reviewer believes the document could be strengthened by using primary literature (versus grey literature) and citing original sources.

*Our Response:* Consistent with section 4(b)(2) of the Act, the Secretary shall use the best scientific data available when making critical habitat determinations. Data reviewed by the Secretary may include, but are not limited to, scientific or commercial publications, administrative reports, maps or other graphic materials, information received from experts on the subject, and comments from interested parties. Designation of critical habitat for Peninsular bighorn sheep includes a compilation of data from peer-reviewed, published literature; unpublished or non-peer reviewed survey and research reports; and opinions of biologists knowledgeable about Peninsular bighorn sheep and their habitat. We use primary literature whenever possible, although in some cases grey literature provides timely and detailed information that may otherwise not be available. Therefore, in this final revised critical habitat designation we have used the best scientific information available at this time, including updated information provided by peer reviewers and commenters, which is incorporated into this rule where appropriate.

*Comment 26:* One peer reviewer believes the distribution of critical habitat could be more exact (and defensible) based on locations of sheep. The peer reviewer further stated that the Service should consider documented sheep locations approximately 500–1,000 m (1,640–3,280 ft) in any direction as the boundary of critical habitat, because the peer reviewer believes this would be defensible given the accuracy of the radio and GPS collar generated locations. Finally, the peer reviewer suggested other defensible options for a more exact critical habitat delineation, including the use of minimum convex polygons or 95 percent adaptive kernel techniques (and the connectivity between them).

*Our Response:* Consistent with 50 CFR 424.12(b), when considering the designation of critical habitat, the Secretary shall focus on the principal biological or physical constituent elements within the defined area that are essential to the conservation of a given species and that may require special management considerations or protection. Additionally, as per section 3(5)(A)(ii) of the Act, critical habitat also includes specific areas outside the geographical area occupied by the species at the time it is listed if such areas are essential for the conservation of the species. While delineating critical habitat, we not only considered Peninsular bighorn sheep locations, but also a combination of habitat features. We believe that drawing circles around occurrence points as the commenter has suggested (by delineating the critical habitat boundary as 500–1,000 m (1,640–3,280 ft) in any direction of a sheep location) would not accurately reflect essential habitat for this DPS because collared sheep represent a subset of the total number of sheep in the Peninsular Ranges. Additionally, there are a disproportionate number of collared animals in the northern extent of the DPS's range compared to the southern extent of its range. Therefore, we believe basing critical habitat only on occurrence data would lead to an underrepresentation of the habitat essential to the whole population.

Both the minimum convex polygons or 95 percent adaptive kernel techniques could be valid options for determining a species' habitat or home range; however, we believe our criteria used to identify critical habitat gives a more precise delineation of essential habitat based on occurrence data and the physical or biological features essential to the conservation of Peninsular bighorn sheep (see "Criteria Used To Identify Critical Habitat"). We did consider the use of other techniques

to delineate critical habitat, including minimum convex polygons or 95 percent adaptive kernel techniques such as the peer reviewer suggested. However, those techniques can yield broad and irregularly shaped polygons of habitat inclusive of expanses of areas that lack occurrence data.

We delineated critical habitat boundaries as described in the "Criteria Used To Identify Critical Habitat" section of this final rule. Please see this section for a detailed discussion of the delineation process used for this rule.

*Comment 27:* One peer reviewer stated it was not clear in the proposed rule how the distribution of bighorn sheep and occupied areas were determined. The peer reviewer believes the "Methods" section does not define occupied habitat. The peer reviewer believes that if sheep are regularly using an area, it is important for the Service to define occupied habitat. However, if sheep have not used an area in more than 5 to 10 years and there is no suitable habitat adjacent to that area, the peer reviewer believes it would be difficult to defend this area as critical. The peer reviewer suggested an in-depth cumulative effects examination to address this issue.

*Our Response:* We agree with the peer reviewer that areas of regular, repeated sheep use are important to this DPS; however, we disagree with the peer reviewer's assertion that areas not used by sheep in more than 5 to 10 years will be difficult to defend as critical habitat. Section 3(5)(A)(i) of the Act defines critical habitat as the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of 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. As a revision to our criteria announced in the NOA (73 FR 50498, August 26, 2008), we included areas with occupancy data indicating they are currently occupied or areas with occupancy data indicating they were occupied at some point between 2008 (present time) and 1988 (i.e., the time of listing (1998) less 10 years, which is the average lifespan of Peninsular bighorn sheep).

Use of a data set that considers a larger time-span of occurrence data accounts for the large fluctuations in Peninsular bighorn sheep population levels over the last two decades. Because the average lifespan of sheep is approximately 10 years (Botta 2008a, p. 1), areas occupied 10 years prior to listing should be considered occupied at listing. Therefore, we appropriately

included areas supporting the essential physical and biological features that may require special management considerations or protection that are within areas occupied at the time of listing. We did not include areas that were unsuitable or otherwise did not support physical and biological features essential to the conservation of the species. Please see our response to Comment 8 and “Criteria Used To Identify Critical Habitat” section of this rule for additional discussion on occupancy and methodology used to develop critical habitat.

With regard to the assertions about a cumulative effects analysis, the peer reviewer may be confusing a cumulative effects analysis under section 7 of the Act or NEPA with the process for designating critical habitat. A “cumulative effects” analysis is not required under section 4 of the Act. Under section 4(b)(2) of the Act, we did consider the economic, national security, and other relevant impacts of designating critical habitat.

*Comment 28:* One peer reviewer believes that bighorn sheep habitat along the border could be altered by illegal immigrants and the Border Patrol (or other agents that pursue illegal immigrants). The peer reviewer also believes that future economic growth could further infringe on the bighorn sheep’s habitat in the southern part of its range as it has in the northern part of its range. The peer reviewer believes that these issues should be addressed in a cumulative effects analysis.

*Our Response:* When delineating critical habitat for Peninsular bighorn sheep, we used the best available scientific information to determine those areas that meet the definition of critical habitat. We do not have any data indicating that activities associated with the Border Patrol activities or illegal immigration threaten Peninsular bighorn sheep habitat along the border, nor did the peer reviewer supply data to support this assumption. The DEA analyzed projected economic growth and associated economic impacts, and the majority of projected growth is expected to occur in the northern part of the range. We recognize the potential threat of development in the “Special Management Considerations or Protection” section of this final rule. Again, the peer reviewer may be confusing a cumulative effects analysis under section 7 of the Act or NEPA with the process for designating critical habitat.

*Comment 29:* One peer reviewer did not agree with our discussion of the potential negative effects of roads to Peninsular bighorn sheep as stated in

the 2007 proposed rule. The peer reviewer believes that the citation of Epps *et al.* (2005, p. 1035) in the proposed rule is inappropriate to this DPS because that study was concerned with the effects of major fenced highways, and the roads in question in the Peninsular Ranges are smaller two-lane roads that Peninsular bighorn sheep cross regularly.

*Our Response:* In light of the above comment, we revised our discussion of the effects of roads on Peninsular bighorn sheep and revised our citation of Epps *et al.* (2005). Please see the “Special Management Considerations or Protection” section of this final rule.

*Comment 30:* One peer reviewer believes that the discussion in the 2007 proposed rule of behavioral interactions between humans and bighorn sheep is not objective and lacks a real analysis of the problem as its basis. The peer reviewer believes that an analysis is required regarding our statement that “disturbance could modify the sheep’s behavior or cause bighorn sheep to flee an area.” The peer reviewer believes this statement falsely implies that such an incident is detrimental to the conservation of this animal.

Additionally, the peer reviewer suggested we provide an alternative statement indicating that bighorn sheep in the Peninsular Ranges are a good example of a DPS that can readily habituate to human activities that are non-threatening and geographically predictable.

*Our Response:* The opening paragraphs of our proposed revised critical habitat designation clearly state that the rule is not intended to serve as a comprehensive review of desert bighorn sheep ecology and conservation, and such reviews can be found elsewhere. The proposed rule briefly discusses the natural history and management of bighorn sheep, and then concentrates upon the methodology used to designate critical habitat. The effects of human activities on bighorn sheep have been discussed and debated by many biologists and managers for decades; thus, we included a brief synopsis of the topic. We recognized there were differences of opinion, and thus we were careful to include words such as “potential.” It should be noted that we were discussing human activity in a general sense, and we listed a variety of activities as examples.

A careful review of the literature reveals that bighorn sheep group or individual responses to human activity are highly variable and influenced by local factors and local history. Therefore, generalized statements extending to all bighorn sheep are

inappropriate. An overwhelming majority of biologists have expressed concern and have recommended limiting or managing human activities in bighorn sheep habitat. The peer reviewer is correct in asserting that much of the literature consists of opinions and that there is a need for additional well-designed studies that provide stronger inferences. However, considering the volume of opinions on the potential impacts that human activities may have on bighorn sheep, it was appropriate to include discussion of these potential impacts when considering if the physical or biological features essential to the conservation of the Peninsular bighorn sheep may require special management considerations or protection.

*Comment 31:* One peer reviewer made the following statement: “Conspicuous by its absence in this proposal is any reference to the recent Turner *et al.* [2004] published habitat analysis of bighorn sheep in the northern Peninsular Ranges, the Ostermann *et al.* [2005] rebuttal to that, and the response by Turner *et al.* [2005].” The peer reviewer further stated that a subsequent unpublished preliminary habitat analysis by Rubin *et al.* was referenced in the proposed rule instead, with a statement that it was not adopted because of its preliminary nature; yet it was used as validation of the critical habitat boundaries, which effectively is stating that it was adopted. The peer reviewer pointed out that in discussing why the new proposal includes much less habitat, the Service stated that many areas in the original critical habitat did not support features essential to the conservation of the Peninsular bighorn sheep or otherwise contain suitable habitat for the DPS. The peer reviewer stated this is the same point made by Turner *et al.* (2004), and regardless of whether the Service accepts the details of their habitat modeling, the peer reviewer believes it would be appropriate to cite them as having arrived at the same conclusion. Finally, the peer reviewer stated that, without advocating one study over the other, this is not objective, and there should be a discussion addressing why the Turner *et al.* analysis was not used, while an unpublished preliminary analysis was used.

*Our Response:* We considered the papers cited above (Turner *et al.* 2004; 2005; and Ostermann *et al.* 2005), but they did not play a role in the development of the critical habitat designation. Therefore, they were not cited and discussed in the proposed rule. Turner *et al.* (2004) based their model primarily upon data collected

from a subpopulation that exhibited atypical habitat selection patterns. Approximately 90 percent of the data points utilized were collected from a group of bighorn sheep that frequented urban areas in the vicinity of Rancho Mirage. Furthermore, 79 percent of the data points utilized were collected over only a seven-year period when bighorn sheep use of urban areas was most pronounced. This fact also biased the data from a spatial standpoint because point locations were much easier to collect in urban settings. Approximately 80 percent of the point locations utilized were obtained within 1.9 mi (3 km) of an artificial water source, which was located next to a residential community. Additionally, Turner *et al.* (2004) assumed that the density of bighorn sheep point locations in a given area accurately reflected habitat quality, and they did not account for variations in sampling effort and detection. Finally, the Turner *et al.* (2004) model utilized a subset of the available data. Only a small amount of the data utilized was collected from other bighorn sheep groups that exhibited behavior and habitat use patterns typical of bighorn sheep inhabiting the remainder of the Peninsular Ranges.

For the reasons stated above, the Turner *et al.* (2004) model should not be considered a general model for identifying or ranking bighorn sheep habitat in the Peninsular Ranges. Its validity is specific to the small group of sheep that frequented urban areas in Rancho Mirage from 1994–2000. The Turner *et al.* (2005) rebuttal to Ostermann *et al.* (2005) did not fully address the above issues, but instead aired past grievances with the Service and addressed aspects of Peninsular bighorn sheep recovery that were not specific to their model or Ostermann *et al.* (2005).

The preliminary habitat analysis conducted by Rubin *et al.* (2007) utilized point locations collected from bighorn sheep not closely associated with urban areas, and their efforts utilized different and recently developed methodology. The preliminary results were presented by Rubin *et al.* to our office and examined. However, the Rubin *et al.* (2007) preliminary results were not used to adjust the boundaries of the proposed critical habitat designation (see our response to Comment 20 above). The peer reviewer is justified in asserting that if the preliminary results of Rubin *et al.* (2007) were mentioned in the proposed rule, then the Turner *et al.* (2004) model, plus rebuttals, also should have been discussed. However, since neither model was used to

designate the proposed critical habitat, we removed further discussion of the models (e.g., Rubin *et al.* 2007; Turner *et al.* 2004) from this final rule.

#### Public Comments

##### Comments Related to Criteria Used To Identify Critical Habitat

*Comment 32:* Two commenters stated that upon examination of occurrence data and the original critical habitat (2001), they believe that the original critical habitat was overdrawn. The commenters further believe that the original critical habitat contains large areas of land that have no evidence of current or historic bighorn sheep activity or that have had only a handful of observations over the past 30 years. The commenters noted that the Service's attempt to base the proposed critical habitat on more technical, state-of-the-art distributional information appears to be a step toward resolving some of these issues. The commenters believe the methodology used in the proposed rule is vague, and the sources of information do not appear to be publicly available. For example, one commenter questioned how the ewe group delineation from Rubin *et al.* (1998) was compared to all occupancy data collected since the time of listing on GIS imagery maps. Both commenters also questioned how ewe group delineation was expanded to include areas where occupancy data points indicate repeated Peninsular bighorn sheep use and recent sheep movements.

*Our Response:* We acknowledge that the 2001 critical habitat designation contains large areas of land that have no evidence of current or historic bighorn sheep activity or have had only a handful of observations over the past 30 years. A complete discussion of how information and data collected since the 2001 designation was utilized to refine the proposed designation and the steps used in the delineation process (*i.e.*, methodology) can be found in the "Criteria Used To Identify Critical Habitat," "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat," and "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat To This Final Rule To Revise Critical Habitat" sections of this final rule.

*Comment 33:* Two commenters believe it is disconcerting that the proposed rule expands areas of occupancy (from E. Rubin's ewe group determination) to include areas where there are only a handful of sightings, where sighting data are unverifiable, and where bighorn sheep have been

recently released. The commenters believe this suggests that critical habitat can be "created" by releasing bighorn sheep into previously unoccupied areas. The commenters further stated that the expansion of the northernmost ewe group delineation in the San Jacinto Mountains could be justifiable; however, they believe there is no way to objectively evaluate the information used in support of this expansion. The commenters provided the example that several bighorn sheep sightings in Chino Canyon were the result of helicopter pursuits driving animals onto the valley floor. The commenters questioned if these coerced observations were included in the database. Additionally, the commenters believe the proposed rule expanded the southernmost ewe group delineation near Interstate 8 based on consistent, recent sightings of uncollared Peninsular bighorn sheep and asked the Service if this includes ewes, lambs, and rams. The commenters stated that their understanding was that California Department of Fish and Game (CDFG) personnel suggest these are occasional sightings of rams. The commenters believe that since these are uncollared animals, it is unknown if these "consistent sightings" are of one or a few individuals being repeatedly seen or from multiple groups colonizing the area and further indicated that subjective statements such as this by the Service are unacceptable in a final rule.

*Our Response:* We believe it was necessary and justifiable to explore and consider additional available scientific information because the ewe group delineations from Rubin *et al.* (1998) were intended to document the approximate known distribution of ewe groups at that time and were based on only a few years of data. Using the ewe group delineations as a starting point, we expanded our proposed critical habitat boundary from the ewe group delineations using a much larger set of occurrence data from 1988 to 2008 and information on essential habitat features. See our response to Comment 20 and the "Criteria Used To Identify Critical Habitat" section of this final rule for more discussion on the methodology and expanded critical habitat boundary.

In response to the commenters' assertion that we included areas where there are only a handful of sightings, where sighting data are unverifiable, and where bighorn sheep have been recently released, we used the best available scientific data in determining whether the areas in question meet the definition of critical habitat. A captive breeding program has been maintained by the Bighorn Institute since 1984 in

cooperation with CDFG and the Bureau of Land Management (BLM). Captive-bred Peninsular bighorn sheep have been released in the northern Santa Rosa Mountains and the San Jacinto Mountains (Ostermann *et al.* 2001, p. 751) solely into areas currently and historically occupied by the DPS. We recognize that a small percentage of data points considered may be those of released sheep from the captive breeding program; however, we do not suggest that critical habitat can be created by releasing sheep into previously unoccupied areas, as the commenters have asserted. Furthermore, all areas included in the designation contain data points from non-captive-bred sheep. In regard to the commenters' concerns and assertions about the data considered, we are not aware of any "coerced" observations in our database. Finally, the recent bighorn sheep sightings near Interstate 8 include multiple ewes and lambs in groups of varying sizes.

*Comment 34:* Several commenters expressed concern about the draft habitat model mentioned in the proposed rule.

*Our Response:* We did not use the draft habitat model in our critical habitat delineation for the proposed rule or this final rule. See our response to Comment 19 above.

*Comment 35:* Two commenters questioned why the Service does not mention in the proposed rule the three current peer reviewed papers on bighorn sheep critical habitat in the northern Peninsular Ranges (i.e., Turner *et al.* 2004; 2005; Ostermann *et al.* 2005). The commenters believe this is incongruous, as the critical habitat delineated in the proposed rule most closely approximates the conclusions of Turner *et al.* (2004).

*Our Response:* Please see our response to Comment 31 for a discussion of these papers.

*Comment 36:* Several commenters believe that the proposed revised critical habitat is flawed because it fails to consider historic and recent known Peninsular bighorn sheep locations. One commenter believes the current proposal fails to include and adequately consider the vast majority of known Peninsular bighorn sheep locations prior to the listing of the DPS as endangered in 1998, when the Peninsular bighorn sheep population was at a historic low point and their range was severely constricted. The commenter also believes that omitting historic locations of Peninsular bighorn sheep from critical habitat designation ensures that the distribution of the DPS will remain severely limited in relation

to its historic distribution and is contrary to the Act. The commenter suggested that to promote recovery of the DPS, it is essential that Peninsular bighorn sheep be able to re-inhabit their historic range which, given the rapid expansion of human development in the area, will be impossible if sufficient historic habitat is not protected as critical habitat.

Additionally, one commenter believes the critical habitat designation in the proposed rule does not accurately take into account multiple sheep locations recorded since Peninsular bighorn sheep were listed in 1998. The commenter noted that conservation groups have been informed by the Peninsular bighorn sheep recovery team members that the proposed revised critical habitat fails to consider known sheep locations that were made available to the Service by members of the Peninsular bighorn sheep recovery team. The commenter noted their belief that the consequence of this omission (whether purposeful or inadvertent) is that significant areas of currently occupied habitat essential to the DPS are omitted from the proposed rule.

*Our Response:* Regarding the commenters' concern about a flawed proposal and assertions about historic and known sheep locations not considered in the proposed revised critical habitat designation, we revised our criteria in light of these concerns and similar comments from peer reviewers about the limited dataset used in the proposed rule. The revisions were announced in the NOA published in the **Federal Register** on August 26, 2008 (73 FR 50498). We revised our criteria to consider occurrence data between 2008 (present time) and 1988 (i.e., the time of listing (1998) less 10 years, which is the average lifespan of Peninsular bighorn sheep). Use of a data set that considers a larger time-span of occurrence data accounts for the large fluctuations in Peninsular bighorn sheep population levels over the last two decades. See our response to Comment 8 above.

Regarding the concerns that critical habitat should include the historical range of the DPS, the Service may designate as critical habitat areas outside of the geographical area occupied by a species at the time it was listed (i.e., historical habitat) only when we can demonstrate that those areas are essential for the conservation of the species (section 3(5)(A)(ii) of the Act). Likewise, we can designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to the species' present range would be inadequate to ensure the conservation of

the species (50 CFR 424.12(e)). Refer to our response to Comment 7 for further discussion.

We believe that we considered a scope of occurrence data that is reflective of the large population fluctuations of Peninsular bighorn sheep over the past two decades, not just occurrence data from a "historic low point" when the range of this DPS was "severely constricted," as the commenter suggests. See our response to Comment 8 above for a detailed discussion.

With regard to the commenter's concerns of the omission of occurrence data previously provided to the Service, we examined the occurrence data considered in the delineation of the proposed revised critical habitat and found that a set of data was missing from our GIS database. Subsequently, we included that occurrence data into our GIS database and double-checked to ensure that all occurrence records submitted to the Service were included for our analyses. Please see our response to Comment 10 above.

*Comment 37:* One commenter asserted that instead of including the full catalogue of known locations, the Service's proposed revised critical habitat gives greater weight to occurrence data acquired remotely through radio telemetry and GPS. The commenter believes that this nonrandom sampling inevitably biases the assessment of habitat selection by Peninsular bighorn sheep towards more intensively studied groups and that it cannot be construed as representative of habitat use throughout the range.

*Our Response:* We realize that much of the occurrence data for this DPS is based on data acquired remotely through radio telemetry and GPS. Additionally, we are aware that not all areas within the range of the DPS have been surveyed or studied equally (see our response to Comment 8). For example, the extreme southern portion of the Peninsular Ranges has not been studied as heavily with radio telemetry and GPS collar technology as in the north. Therefore, we use a variety of occurrence data such as photographic evidence, scat data, and field notes collected from Service biologists and other species experts to determine occupied habitat. The designation of critical habitat for Peninsular bighorn sheep is based on the best scientific data available regarding the DPS, including a compilation of data from peer-reviewed, published literature; unpublished or non-peer-reviewed survey and research reports; and opinions of biologists knowledgeable about Peninsular bighorn sheep and their habitat.

*Comment 38:* One commenter believes the proposed rule is flawed because it uses uncertain and unclear methodology, and another commenter believes the Service failed to consider the best scientific and commercial data available. Additionally, one commenter believes that the failure to provide a clear and transparent methodology prevents independent validation of the proposed changes insofar as scientists and other members of the public are unable to conduct a comprehensive appraisal of the methods and determinations.

Several commenters stated that it is unclear how the Service utilized the PCEs identified in the proposed rule to ascertain whether specific habitat should be categorized as critical. One commenter stated that he was unable to assess how the Service derived the maps of critical habitat, as they contain features not consistent with known topography or known bighorn sheep locations. The commenter further noted that the critical habitat maps in the proposed rule show several lengthy and inexplicable straight line edges of habitat, notably adjacent to Borrego Springs and south of Route 78, which do not conform to the terrain and for which no biological explanation or justification is provided in the proposed rule; they added that bighorn sheep habitat does not naturally occur in such a linear fashion. The commenter had concerns that these boundaries may have been based on political and economic reasoning rather than sound science.

*Our Response:* As discussed in our responses to Comments 5 and 12 above and the “Criteria Used To Identify Critical Habitat” section of this final rule, we delineated critical habitat for the Peninsular bighorn sheep using the following criteria: (1) Areas that contain the PCEs required by the DPS as determined from aerial imagery and GIS data on vegetation, elevation, and slope; (2) areas within the ewe group distribution (*i.e.*, subpopulations) boundaries identified by Rubin *et al.* (1998); (3) areas occupied by the DPS between 2008 (present time) and 1988; and (4) areas where occupancy data points indicate repeated Peninsular bighorn sheep use, but which were not captured within the ewe group distribution boundaries identified by Rubin *et al.* (1998). Application of these criteria results in the determination of the physical and biological features that are essential to the conservation of this DPS, identified as the DPS’s PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the DPS. Since the 2007

proposed rule, we revised the “Criteria Used To Identify Critical Habitat” section of this rule to provide more detail and a description of the stepwise process used, data considered, habitat features mapped, and method used to delineate critical habitat boundaries. Any boundaries of the proposed critical habitat designation that seem straight in appearance are the result of our criteria used to identify critical habitat and are not the result of political or economic reasoning.

*Comment 39:* Many commenters stated that the methods were not designed by or made in consultation with members of the Peninsular bighorn sheep recovery team who are most familiar with Peninsular bighorn sheep ecology and habitat and that they diverge significantly from those methods previously used in the Recovery Plan to determine critical habitat for the DPS.

*Our Response:* In accordance with our policy on peer review published on July 1, 1994 (59 FR 34270), we solicited expert opinions from five knowledgeable individuals (some of which were on the recovery team) with scientific expertise that included familiarity with the DPS, the geographic region in which it occurs, and conservation biology principles. We reviewed all comments received from the peer reviewers and the public for substantive issues and new information regarding the designation of critical habitat for Peninsular bighorn sheep. Furthermore, on May 14, 2007, representatives from the Carlsbad Fish and Wildlife Office and the Regional Office, including the Regional Director, met with recovery team members in part to inform members that we were initiating work to propose revisions to designated critical habitat for the Peninsular bighorn sheep. At that meeting, we requested that recovery team members submit any data they wanted us to consider in our proposed revision. Therefore, we believe that we followed the appropriate guidance and regulations regarding inclusion of expert biologists and others during development of this critical habitat designation. See our response to Comment 11 above.

*Comment 40:* One commenter believes that the 0.5-mi (0.8-km) buffer zone around slopes equal or greater than 20 percent as described in the Recovery Plan is not necessary, and they expressed support for the Service not to include this buffer in the final critical habitat designation.

*Our Response:* The areas of the 0.5-mi (0.8-km) zone around 20 percent slopes were included in the Recovery Plan and

2001 final critical habitat designation because they may contain resources for the DPS, and bighorn sheep have on occasion been observed to wander great distances from areas of 20 percent slope. The inclusion of these areas resulted in the addition of large expanses of land to the Recovery Plan area and the 2001 critical habitat designation. However, based on the best scientific information currently available and our criteria used to identify critical habitat, those areas do not meet the definition of critical habitat. As a result, we are not including some areas that were previously designated as critical habitat that are within this 0.5-mi (0.8-km) zone around 20 percent slopes. See our response to Comment 4 above, and the “Criteria Used To Identify Critical Habitat” and “Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat” sections of this final rule for further discussion.

*Comment 41:* One commenter had concerns about the occurrence data considered in our criteria used to identify critical habitat. The commenter stated that no scientifically based reason is identified for why occurrence data from 1988 to present is used. The commenter followed that Peninsular bighorn sheep occurred in the area for millennia prior to 1988 and were in decline by the 1970’s. The commenter was also concerned that our use of occupancy data points was restricted to those indicating repeated Peninsular bighorn sheep use. The commenter stated that given the incomplete records for the location of all bighorn sheep at all times, especially in the southern part of the range, they believe it is unreasonable that only the repeated occupancy data points were used for the designation.

*Our Response:* As stated in our response to Comment 27 above, we considered areas with occupancy data indicating that they are currently occupied or areas with occupancy data indicating they were occupied at some point between 2008 and 1988 (*i.e.*, the time of listing (1998) less 10 years, which is the average lifespan of Peninsular bighorn sheep). Use of a data set that considers this time span of occurrence data accounts for the large fluctuations in Peninsular bighorn sheep population levels over the last two decades. Because the average lifespan of sheep is approximately 10 years (Botta 2008a, p. 1), areas occupied 10 years prior to listing should be considered occupied at listing. Regarding the concerns over using repeated occupancy data given the incomplete records in the southern part

of the range, we are aware that not all areas within the range of the DPS have been surveyed or studied equally (see our response to Comment 8 above). Regardless, we used the best available scientific information and occurrence data in determining areas occupied by Peninsular bighorn sheep. Please see the “Criteria Used To Identify Critical Habitat” section of this rule for more information.

*Comment 42:* In response to our August 26, 2008, NOA announcing changes to the proposed rule, one commenter wrote; “The proposed expansion of critical habitat beyond the boundaries, beyond those in the October 2007 critical habitat proposed rule, relies on essentially the same qualitative, opinion-based approach that led to the remand of critical habitat for new rulemaking by the Court (*Agua Caliente v. Scarlett*).”

*Our Response:* The commenter implies that the consent decree and associated remand of critical habitat reflect a court judgment supporting their opinion that the methodology used in delineating critical habitat is inappropriate. However, the court order upholding the approval of the consent decree states, “It is also well established that in approving a consent decree, the Court does not delve into the merits of the case, but rather limits its review to determine if the settlement is fair, reasonable, and equitable.” There was no court “ruling” that the methodology used to designate the critical habitat boundary was inappropriate. The parties agreed to a settlement to avoid the mutual risks and expenses of protracted litigation. Additionally, issues other than the methodology for delineating critical habitat, such as the economic analysis and tribal sovereignty, played important roles in the case.

#### Comments Related to the Primary Constituent Elements

*Comment 43:* One commenter believes that information about how PCEs are quantified, the models used for their application, and the methods applied to point-by-point determination of exclusion from critical habitat are not described in the proposed rule and are arbitrary. The commenter noted that some critical habitat was added in comparison to the critical habitat identified based on essential habitat designation in the Recovery Plan, and much habitat was deleted. The commenter inquired if there is a difference in the PCEs of these two groups (*i.e.*, areas added and areas deleted).

*Our Response:* In our responses to Comments 5, 12, and 38 and in the “Criteria Used To Identify Critical Habitat” section of this final revised rule, we explain how we delineated critical habitat for the Peninsular bighorn sheep. In response to the commenter’s inquiry if PCEs were different for areas added than for those deleted from critical habitat, the same set of PCEs for Peninsular bighorn sheep were used in the process of determining areas to include and not include as critical habitat in this designation.

*Comment 44:* One commenter believes the PCEs set forth an almost unlimited area, confined only by certain upper-level altitudes.

*Our Response:* Some PCEs may extend beyond the boundary of critical habitat; however, we used ewe group delineations, occurrence data, and habitat features, in addition to the PCEs, to delineate the boundary of critical habitat. We believe that this process has resulted in critical habitat units that contain the PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the DPS. See the “Criteria Used To Identify Critical Habitat” section of this final rule for further discussion of the use of PCEs to delineate critical habitat.

#### Comments Related to DPS Biological Information

*Comment 45:* Two commenters believe the proposed rule gives a false impression that this population is a unique species or subspecies through weak use of nomenclature and erroneous information. The commenters also stated that in numerous places, the proposed rule refers to this DPS as if it were a subspecies or species. The commenters believe that the proposed rule incorrectly refers to this DPS as “Peninsular bighorn sheep (*Ovis canadensis nelsoni*)” in the title and body of the text; however, *Ovis canadensis nelsoni* is the Latin trinomial for “desert bighorn sheep” and the term “Peninsular bighorn sheep” was the common name for the now synonymized subspecies; *Ovis canadensis cremnobates*. The commenters believe this is a matter of peer-reviewed scientific literature and the proposed rule should use correct terminology and refer to this DPS as desert bighorn sheep (*Ovis canadensis nelsoni*) in the Peninsular Ranges of California (Wehausen and Ramey 1993; Ramey 1995).

*Our Response:* See our response to Comment 22 above. We are updating the listed entity to a DPS of desert bighorn sheep (*Ovis canadensis nelsoni*).

However, we believe it is appropriate to continue to refer to these sheep with the common name Peninsular bighorn sheep within this rule. Additionally, we revised our discussion of the taxonomy of the listed entity in the “Background” section of this final rule.

*Comment 46:* Two commenters believe the proposed critical habitat rule includes overstatements that have little or no basis in fact about the negative impacts of human disturbance on bighorn sheep.

*Our Response:* Please see our response to Comment 30 above. We do not believe that the discussion in the proposed rule overstates impacts, and we based our discussion on a variety of widely discussed and debated impacts.

*Comment 47:* Two commenters stated that while it is important to minimize the effects or impacts of any construction project on bighorn sheep habitat, they believe the assertions in the proposed rule about power lines degrading and fragmenting habitat are without factual substantiation. The commenters also stated that once constructed, power lines and support structures are inanimate objects in the environment, and they believe there is no empirical evidence that power lines fragment bighorn sheep habitat or preclude movements under the power line.

*Our Response:* We agree with the commenters that it is important to minimize the effects or impacts of any construction project on bighorn sheep habitat. Our discussion of power lines in the proposed rule in relation to the threat of disturbance to Peninsular bighorn sheep and their habitat was limited to disturbance that would occur during power line construction. Once constructed, power lines become part of the inanimate landscape and may not impede sheep movement. Contrary to the commenters’ assertions, we did not suggest or state in the proposed rule that sheep movement is precluded by power lines once constructed.

*Comment 48:* Two commenters noted the discussion in the proposed rule of roads fragmenting bighorn sheep habitat in which Epps *et al.* (2005) is cited as “showing that nuclear genetic diversity of desert bighorn sheep populations was negatively correlated with the presence of human-made barriers (highways), which essentially eliminated dispersal.” The commenters believe this is incorrect, stating that the study found there was a negative effect with fenced highways (*e.g.*, Interstates 10, 15, and 40; and State Highway 62), not roads in general.

*Our Response:* In light of the above comment, we revised our discussion of



the effects of roads on Peninsular bighorn sheep and revised our citation of Epps *et al.* (2005) to reflect that the study was of fenced highways, not roads in general. Please see the “Special Management Considerations or Protection” section of this final rule.

*Comment 49:* One commenter believes the proposed critical habitat designation does not take into consideration the effects of either natural or anthropogenic environmental variations and perturbations on the habitat requirements and utilization of Peninsular bighorn sheep, including changes due to development, fire and fire management, exotic species infestations, and climate change. The commenter asserted that the Service should revise and re-analyze the proposed critical habitat designation, taking into account these factors and ensuring that any new designation includes sufficient critical habitat to allow for Peninsular bighorn sheep recovery in light of the changes brought by climate change and other natural and anthropogenic alterations to sheep habitat across its range.

*Our Response:* As discussed in the “Special Management Considerations or Protection” section of this rule, when designating critical habitat, we assessed whether the geographical area occupied at the time of listing contains features that are essential to the conservation of the DPS and that may require special management considerations or protection. We considered the effects of anthropogenic factors (*i.e.*, development and expansion of urban areas, human disturbance related to recreation, construction of roadways and power lines, and mineral extraction and mining operations) on the essential features in the delineation of critical habitat. Additionally, we discussed the issue of climate change in our response to Comment 21 above. At this time, the available scientific evidence regarding potential effects of climate change on Peninsular bighorn sheep habitat does not warrant modification of this critical habitat delineation. We recognize that the threats faced by Peninsular bighorn sheep (including climate change and anthropogenic effects) may change in the future; however, we base our critical habitat designations on the best scientific information available at the time of the designation and do not speculate as to what areas may be found essential if better information becomes available or what areas may become essential over time.

Conservation (*i.e.*, recovery) is achieved when a five-factor analysis performed pursuant to section 4(a)(1) of the Act indicates that current and future

threats have been minimized to an extent that the species is no longer threatened with extinction in the foreseeable future. Recovery is a dynamic process requiring adaptive management of threats, and there are many paths to accomplishing recovery of a species. We recognize that recovery efforts will occur both within and outside the boundaries of this final critical habitat designation. However, we believe that conservation of Peninsular bighorn sheep would be achieved if threats to this DPS, as described in the “Special Management Considerations or Protection” section of this rule, were reduced or removed due to management and protection of those areas.

*Comment 50:* One commenter stated that in recent years, climate science has advanced considerably, and the Service should take into account the current predictions for impacts to Peninsular bighorn sheep habitat based on global climate change, which includes dramatic vegetation shifts, significantly altered fire regimes, and effects on precipitation (California Climate Change Center 2006). The commenter believes that each of these climate change elements may adversely impact Peninsular bighorn sheep and its existing habitat. The commenter cited a study by Kelly and Goulden (2008) showing that the average elevation of the dominant plant species increased by 65 meters between the surveys of 1977 and 2006–2007 (a 30-year interval) in the Santa Rosa Mountains; this elevational shift in vegetation is attributable to global climate change. The commenter believes that this significant distributional movement of plant species in a relatively short time period indicates that a very dynamic change is occurring in Peninsular bighorn sheep habitat. The commenter also cited a study by Seeger *et al.* (2007) that concluded a broad consensus among climate models indicates that southwestern North America will become more arid in the 21st century due to global climate change. The commenter believes that as a result of these data, the Service should require additional areas and a robust critical habitat designation to provide refuge for Peninsular bighorn sheep during these changing times.

According to the commenter, a study on the effects of climate change on desert bighorn sheep in California by Epps *et al.* (2004, p. 110) concluded that “global warming could have serious consequences for desert bighorn sheep, particularly if coupled with decreases in precipitation.” The commenter further stated that the Epps *et al.* (2004) study

found that an average increase of 3.6 degrees Fahrenheit combined with a 12 percent decrease in precipitation increased the likelihood of extinction in desert sheep from 20 percent to 30 percent over the next 60 years. Therefore, the commenter believes that the Service should revise and re-analyze the proposed critical habitat designation, while taking into account these climate change factors, to ensure that any new designation includes sufficient critical habitat that provides for bighorn recovery.

*Our Response:* We acknowledge that recent data indicate that plant distributional changes may be occurring in the Peninsular Ranges; however, we are unaware of data indicating a shift in the resource use and distribution of sheep in the Peninsular Ranges that would correlate with the change in plant distribution. By considering sheep occurrence data over the past 20 years, we are likely capturing recent shifts in sheep distribution that may have resulted from changes in plant distribution in the Peninsular Ranges. Additionally, we acknowledge that recent climate studies indicate that the Southwestern United States may experience decreases in precipitation and increases in temperature in the coming years. If in the future, data reveal that sheep are experiencing a shift in distribution to areas outside of the critical habitat designation, in association with changing plant distribution resulting from climate change, we may revise the critical habitat designation at that time, subject to available funding and other conservation priorities.

With regard to the citation of Epps *et al.* (2004), we agree that the study concluded that global warming could have serious consequences for desert bighorn sheep populations. Here, we would like to expand on the commenter’s shortened description of Epps *et al.* (2004). The modeled 2.0 degree Celsius temperature increase, combined with a 12 percent precipitation decrease, resulted in an average increased extinction risk of 0.21 to 0.30 for desert bighorn sheep across California; however, the modeled climate scenario did not appear to markedly change the extinction probability for sheep occupying the Peninsular Ranges. Epps *et al.* (2004, p. 111) reported a 0–0.2 extinction probability for sheep in the Peninsular Ranges over the next 60 years under two scenarios, one being no further climate change and the other being the 2 degree temperature increase combined with the 12 percent precipitation decrease (see also our response to Comment 21

above). We cannot conclude from Epps *et al.* (2004) that the Peninsular bighorn sheep population will be under a greater risk of extinction from the modeled climate change scenario, and we do not believe it appropriate to revise and reanalyze our critical habitat designation at this time. Critical habitat designations do not signal that habitat outside of the designation is unimportant or may not contribute to recovery in the future. Should additional data become available, we may revise this critical habitat designation, subject to available funding and other conservation priorities.

*Comment 51:* A number of commenters believe that the proposed revision of critical habitat will have a negative impact on sheep recovery because it excludes habitat that supports processes essential to metapopulation survival. One commenter believes that maintaining and reestablishing habitat connectivity to provide long-term genetic and demographic connection between ewe groups is crucial to recovering the Peninsular bighorn sheep and notes that it is a Priority 1 strategy in the Recovery Plan (Service 2000, p. 113). Several commenters noted that connectivity of habitat, as well as the resulting facilitation of animal movements and gene flow among metapopulations, are recognized as crucial elements for recovery by the Service. Several commenters further stated that they believe the proposed rule fails to identify critical habitat in regions that are confirmed linkages between metapopulation subsegments, based on data and materials provided to the Service by the Bighorn Institute and by bighorn sheep researchers, such as Dr. Esther Rubin. Several commenters believe that the proposal would eliminate critical habitat crucial for maintaining connectivity between Unit 1 and Unit 2A (thereby isolating the Peninsular bighorn sheep population in the San Jacinto Mountains) and between Units 2B and 3 (thereby isolating the Carrizo Canyon population).

One commenter believes that connectivity between bighorn population sub-segments in the Peninsular Ranges has been predicted from preliminary genetic studies and verified by both radio tracking and GPS collar data. The commenter also stated that failure to identify critical habitat between the Northern Santa Rosa Mountains (Unit 2A) and the San Jacinto Mountains (Unit 1) and between the Fish Creek Mountains (Unit 2B) and Coyote Mountains (Unit 3) would result in a failure to apply the protections that the Service is required to afford to a recovering endangered species through

the designation of essential habitat and critical habitat. The commenter further believes that such a failure would be especially pronounced in the case of the bighorn sheep, when the Recovery Plan and the best available science indicate that the protection of Peninsular bighorn sheep critical habitat connectivity is a crucial element for recovery to allow for its downlisting or delisting. Another commenter believes that failing to maintain critical habitat in these areas is a serious flaw of the proposed revised critical habitat designation and could jeopardize the persistence of isolated herds and preclude recovery of the Peninsular bighorn sheep.

*Our Response:* We agree with the commenters that habitat connectivity is important to allow for movement between ewe groups and to maintain genetic variation; however, we do not have occurrence data suggesting specific travel corridors connecting the units discussed by the commenters, and we are unable to identify specific areas containing physical or biological features essential to the conservation of the DPS. Please see our responses to Comments 1, 5, and 7 and the "Criteria Used To Identify Critical Habitat" section of this final rule for further discussion.

*Comment 52:* One commenter indicated that the population of Peninsular bighorn sheep dropped from possibly two million in 1800 to about 1,200 in the 1970s, and then to about 300 at the time of listing in 1998. The commenter believes that limiting Peninsular bighorn sheep habitat to 420,487 ac (170,166 ha) (as stated in the proposed rule) would not protect the entire range of the species.

*Our Response:* Our understanding is that the commenter may be confusing a possible estimate of all bighorn sheep in North America in 1800 with the Peninsular bighorn sheep DPS. As we stated in our response to Comment 8 above, when rangewide estimates were made in the 1970's, the population was estimated as high as 1,171 in 1974 (Weaver 1974, p. 5). At no point in history was the population of Peninsular bighorn sheep near two million. In this rulemaking, we are designating critical habitat for the Peninsular bighorn sheep and not the entire population of bighorn sheep that exists in various parts of North America. We believe the acreage we are designating in this final rule (376,938 ac (152,542 ha)) is adequate to provide for the conservation of the Peninsular bighorn sheep DPS.

Comments Related to Proposed Exclusions Under Section 4(B)(2) of the Act

*Comment 53:* One commenter stated that conservation groups disagree with the Service's assertion that it is appropriate to exclude some habitats from critical habitat designation because those areas are encompassed by the Coachella Valley MSHCP and draft Agua Caliente Band of Cahuilla Indians Tribal HCP. The commenter also believes that tribal lands should be retained in critical habitat for many reasons, including that the Tribal HCP is in draft form and not yet approved, nor is it found to adequately conserve the DPS. The commenter asserted that critical habitat should be designated even in areas where these plans may overlap to some degree in order to provide a safety net for habitat conservation for this endangered DPS. Several additional commenters also questioned the proposed exclusion of lands owned by the Agua Caliente Band of Cahuilla Indians Tribe.

One commenter noted that the proposed rule states (as reason for excluding critical habitat encompassed by the Agua Caliente HCP), "The designation of critical habitat would be expected to adversely impact our working relationship with the Tribe and we believe that Federal regulation through critical habitat designation would be viewed as an unwarranted intrusion into tribal natural resource programs (October 10, 2007, 72 FR 57750)." The commenter believes this argument is not acceptable because it fails to take the conservation and recovery goals of the Act adequately into account.

*Our Response:* We believe the exclusion of lands under the Coachella Valley MSHCP and Agua Caliente Band of Cahuilla Indians' lands is appropriate based on the potential impacts associated with designating these areas as critical habitat (see "Exclusions Under Section 4(b)(2) of the Act" section of this final rule for a detailed discussion). Section 4(b)(2) of the Act allows the Secretary to exclude areas from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of 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. We believe that critical habitat designation could negatively impact the working relationships and conservation partnerships we have formed with the

Coachella Valley MSHCP permittees, the Tribe, and other private landowners.

This belief is supported by the following statement from the Tribe received during the comment period for the proposed rule, "Contrary to the requirements of the ESA, Executive Order 13175, and the Secretarial Order, the proposed rule fails to defer to the tribe's own established standards, it discourages the Tribe from developing its own policies, and it intrudes on tribal management of its lands. Designation of critical habitat could delay approval of the 2007 draft Tribal HCP, thus adding to the costs of preparing the Tribal HCP and undermining significant protections for the bighorn sheep. Designation of critical habitat also can be expected to increase the amount of time and financial resources necessary to undertake covered activities described in the Tribal HCP, yet it is unlikely to yield material benefits for the bighorn sheep."

Additionally, as explained in detail in the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final rule, we believe these conservation partnerships through the Coachella Valley MSHCP and tribal conservation programs will provide as much or more benefit than consultation under section 7(a)(2) related to the critical habitat designation (the primary benefit of a designation). See our response to Comment 2 above for additional discussion. With regard to the commenter's assertion that this argument is not acceptable because it fails to take the conservation and recovery goals of the Act adequately into account, we take conservation into account when determining areas that meet the definition of critical habitat and in considering the benefits of specifying any particular area as critical habitat. After weighing the benefits of excluding a particular area against the benefits of including such area as critical habitat, the Secretary may exclude the area from critical habitat if he determines that the benefits of exclusion outweigh the benefits of inclusion and that the failure to designate such area as critical habitat will not result in the extinction of the species concerned. Thus, at the end of the analysis under section 4(b)(2) of the Act, we consider whether an exclusion will result in extinction of the species, not whether the exclusion could impact recovery goals.

*Comment 54:* One commenter stated opposition to the Service's policy of relying on section 4(b)(2) of the Act to exclude habitat that may be covered by

management plans or conservation plans under the logic that these areas do not need "special management" pursuant to section 3(5)(A) of the Act. The commenter referred to this approach as "belt and suspenders" and reminded the Service that the district court of Arizona struck down this approach in *Center for Biological Diversity, et al. v. Norton* (D. Ariz. 2003). The commenter believes that all Peninsular bighorn sheep essential habitat needs special management because of the variety of impacts to its habitat (e.g., impacts from development, grazing, fire management activities, and off-road vehicle use). The commenter believes that current or future management actions provided for the Peninsular bighorn sheep or its habitat by management plans or conservation plans are not a reasonable justification for excluding these areas from the protection that a designation of critical habitat provides. The commenter further stated that the Act defines critical habitat as an area that may need special management, and therefore areas that are receiving management under a management plan or conservation plan meet the definition of critical habitat and should not be excluded if the necessary management is being provided under a plan. The commenter concluded that the Service should include in the final critical habitat designation all areas within the boundaries of conservation or management plans for Peninsular bighorn sheep because these areas meet the definition of critical habitat by nature of their need for special management.

*Our Response:* The commenter appears to be confusing the purposes of sections 3(5)(A) and 4(b)(2) of the Act. Section 3(5)(A) provides the requirements for identifying critical habitat, while section 4(b)(2) directs the Secretary to consider the impacts of designating such areas as critical habitat and provides the Secretary with discretion to exclude particular areas if the benefits of exclusion outweigh the benefits of inclusion. In this final revised rule, we did not state that areas do not meet the definition of critical habitat under 3(5)(A) of the Act because they are being adequately managed. However, we consider the management of particular areas that do meet the definition of critical habitat in our analyses under section 4(b)(2) of the Act.

We explain our criteria for designating critical habitat in our response to Comment 6 above, as well as the "Criteria Used To Designate Critical Habitat" section below. We

believe our criteria captures all areas that meet the definition of critical habitat under section 3(5)(A) of the Act, in particular those areas that were occupied at the time of listing, and contain the physical and biological features essential to the conservation of the DPS that may require special management considerations or protection. We will focus our response to this comment on our exclusion of lands under section 4(b)(2) of the Act that we determined met the definition of critical habitat under section 3(5)(A) of the Act.

Section 4(b)(2) of the Act states that the Secretary shall designate critical habitat, and make revisions thereto, under subsection (a)(3) on the basis of the best scientific data available and after taking into consideration the economic impact, the impact to national security, and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude any 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 and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned. Therefore, consistent with the Act, we must consider the relevant impacts of designating areas that meet the definition of critical habitat using the best available scientific data prior to finalizing a critical habitat designation.

After determining the areas that meet the definition of critical habitat under section 3(5)(A) of the Act as described above, we took into consideration the economic impact, the impact on national security, and other relevant impacts of specifying any particular area as critical habitat for Peninsular bighorn sheep. In this final revised designation, we recognize that designating critical habitat in areas where we have partnerships with landowners that have led to conservation or management of listed species on non-Federal lands has a relevant perceived impact to landowners and a relevant impact to future partnerships and conservation efforts on non-Federal lands. These impacts are described in detail in the "Conservation Partnerships on Non-Federal Lands" section below. Based on these relevant impacts, we weighed the benefits of designating areas as critical habitat against the benefits of excluding these areas from the critical habitat designation. Please see the "Application of Section 4(b)(2) of the Act" and "Exclusions Under Section 4(b)(2) of the

Act” sections of this final revised rule for a detailed discussion of the benefits of excluding lands covered by management plans versus the benefits of including these areas in a critical habitat designation.

Upon weighing the specific benefits of inclusion against specific benefits of exclusion, we determined that the benefits of excluding a portion of Units 1 and 2A outweigh the benefits of including these areas in the final critical habitat designation. When weighing the benefits of including an area in the critical habitat designation, we fully consider the regulatory benefits provided to the species under section 7(a)(2) of the Act based on the statutory difference between a jeopardy analysis and an adverse modification analysis. In this analysis, we consider the recovery standards and the benefits associated with designation. Further, we determined that the exclusion of these areas will not result in extinction of Peninsular bighorn sheep. This determination to exclude areas where the benefits of exclusion outweigh the benefits of inclusion and where we determined that the exclusion will not result in the extinction of the DPS, is consistent with the statutory obligations of the Act. Therefore, we believe these exclusions are in full compliance with the Act.

*Comment 55:* One commenter stated that the exclusion of areas covered under the Coachella Valley MSHCP has some merit, but notes that the conservation areas in that plan are based on the 2001 critical habitat designation for bighorn sheep, which the commenter asserts incorporated the 0.5-mi. (0.8-km) buffer zone from areas of 20 percent slope as described in the 2000 Recovery Plan. The commenter asserted that this presents a potential inconsistency of conservation boundaries and recommends that the Service take steps to assure that the inappropriate buffer zone is removed from the Coachella Valley MSHCP.

*Our Response:* It is inappropriate to compare the boundaries of HCP conservation areas to the boundaries of a critical habitat designation. These two areas serve two different functions with regard to the conservation of species and should not be synonymized. Furthermore, critical habitat designations do not signal that habitat outside of the designation is unimportant or may not contribute to recovery. This includes habitat outside of the critical habitat designation but inside Coachella Valley MSHCP modeled Peninsular bighorn sheep habitat.

*Comment 56:* One commenter supported the exclusion of lands covered by HCPs under section 4(b)(2) of the Act and suggested that the Service exclude from critical habitat lands covered under the East County MHCP.

*Our Response:* At this time, the HCP for east San Diego County (East County MHCP) is being developed, and a draft plan is not available for public review. We understand the commenters’ concern that a designation of critical habitat in areas that may be addressed in the future by the East County MHCP may have a negative effect on entities pursuing the HCP and deter its completion. This concern is consistent with our discussion of conservation partnerships in the “Exclusions Under Section 4(b)(2) of the Act” section of this final rule. However, we also recognize that there is a regulatory and recovery benefit to designating critical habitat in areas that are not protected through existing management or conservation plans. Exclusions under section 4(b)(2) of the Act must be considered on a case-by-case basis. Because a draft of the East County MHCP has not been released for public comment or formally evaluated by the Service, it is not clear that this framework plan will adequately address the conservation needs of Peninsular bighorn sheep. Additionally, it is unclear to us at this time which areas will actively develop subarea plans under the East County MHCP. Therefore, we cannot determine that the regulatory and recovery benefits of a critical habitat designation in these areas would be minimized by the measures provided under this future plan, and as such, we did not exclude these lands from critical habitat (portions of Units 2B and 3 in San Diego County). However, if this designation is revised in the future, we will re-evaluate these areas for potential exclusion at that time. We are committed to continue working with all East County MHCP partners to minimize any additional regulatory burden attributable to this critical habitat designation.

*Comment 57:* One commenter supported the exclusion of lands within the boundaries of the Coachella Valley MSHCP. The commenter suggested that all lands, including lands owned by such entities as the California Department of Fish and Game and the BLM, should be excluded from critical habitat. The commenter further stated that the Service agreed, in signing the Implementing Agreement, that all lands within the boundary of the Coachella Valley MSHCP would be excluded from critical habitat designation. The commenter indicated that failure to

exclude these lands will violate the Service’s agreement with the cities and signatories to the Implementing Agreement. Another commenter stated that Federal lands within the Coachella Valley MSHCP area owned by the BLM and Forest Service should be excluded from critical habitat designation, and failure to do so could result in unnecessary duplication of regulatory requirements. The commenter further stated that the BLM and Forest Service are participating in the Coachella Valley MSHCP as partners and that each of these agencies will participate in cooperative management and coordination of habitat conservation for covered species.

*Our Response:* Contrary to the commenter’s assertion, Section 14.9 of the Implementing Agreement does not absolutely preclude critical habitat designation, and we disagree with the assertion that the failure to exclude all lands within the Coachella Valley MSHCP boundary will violate the Service’s agreement with the signatories to the Implementing Agreement.

Consistent with the Implementing Agreement, we excluded lands under the jurisdiction of the permittees addressed by the Coachella Valley MSHCP in Unit 1 and Unit 2A from this final revised critical habitat designation because the benefits of exclusion outweigh the minimal benefits of inclusion. See our responses to Comments 53 and 55 above, and “Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships” section below for more information regarding why we excluded 38,759 ac (15,685 ha) in Unit 1 and Unit 2A.

Finally, regarding the commenter’s concern that Federal lands (owned by the BLM and the Forest Service) within the Coachella Valley MSHCP area should also be excluded from critical habitat designation, we acknowledge that these Federal landowners are Cooperating Agencies of the Coachella Valley MSHCP, and as such, are providing Complementary Conservation according to section 7.3 of the Implementing Agreement. We appreciate and commend the efforts of the BLM and the Forest Service to work with the Coachella Valley MSHCP permittees and to conserve federally listed species on their lands.

The Secretary has the discretion to 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. Based on the record before us, we have elected not to exclude the BLM and Forest Service lands and are designating these lands as critical habitat for the Peninsular bighorn sheep.

Consistent with the “No Surprises” assurances provided to the Coachella Valley MSHCP permittees under section 10 of the Act, we do not expect that additional regulatory actions or measures will be required by the BLM or Forest Service due to designation of these lands as critical habitat.

#### Comments on Lands Designated as Critical Habitat

*Comment 58:* One commenter believes that if both the area north of Chino Canyon and near Interstate 8 are to be included in the final designation, then the observations used in support of these “expansions” should be presented in a table and copies of the original field notes used in support of this observation should be available for public inspection. Two commenters stated that if critical habitat is to be “expanded,” the raw data used to make such decisions should be made publicly available and open to inspection and independent validation.

*Our Response:* All occurrence data and other information used in the delineation of critical habitat for Peninsular bighorn sheep were available to the public during the comment periods and are on file at the Carlsbad Fish and Wildlife Office and available for public inspection (see **FOR FURTHER INFORMATION CONTACT** section of this rule).

*Comment 59:* Several commenters believe that the proposed critical habitat designation fails to protect habitat essential for Peninsular bighorn sheep recovery. One commenter stated the proposed rule excludes significant areas of habitat essential for the DPS and fails to support the goals called for in the Recovery Plan to promote population growth and protect, acquire, enhance, and restore habitat. Several commenters believe the proposal is contrary to the Recovery Plan as well as inconsistent with promoting the survival and recovery of the DPS. One commenter asserted that if Peninsular bighorn sheep were recovered within the newly proposed critical habitat, it would still be threatened or endangered in a significant portion of its range. The same commenter indicated that for critical habitat to facilitate recovery as it was designed to do, the designation should maintain all current critical

habitat and be expanded to include reaches in all other areas identified as having recovery value as identified in the Recovery Plan. The commenter further stated that by proposing to exclude currently designated critical habitat, they believe the Service is failing in its obligation to provide for the recovery of Peninsular bighorn sheep because the value of the critical habitat to the recovery of the DPS will be diminished by these omissions. Finally, another commenter believes the Service should designate as critical habitat sufficient areas to allow for full recovery of Peninsular bighorn sheep.

*Our Response:* It is important to note that the designation of critical habitat is a different process than the development of a recovery plan. A critical habitat designation is a specific regulatory action that defines specific areas within the geographical area occupied by the species at the time of listing containing physical or biological features essential to the conservation of a species, and areas outside the geographical area occupied by the species at the time of listing that are essential for the conservation of the species. In contrast, a recovery plan is a guidance document developed in cooperation with partners and provides a roadmap with detailed site-specific management actions to help conserve listed species and their ecosystems.

Conservation (i.e., recovery) is defined in section 3 of the Act as the “use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.” In accordance with section 4(a)(1) of the Act, we determine if any species is an endangered or threatened species (or revise its listed status) because of any of the five threat factors identified in the Act. Therefore, conservation, or recovery, is achieved when a five-factor analysis indicates that current and future threats are minimized to an extent that the species is no longer in danger of extinction or likely to become endangered in the foreseeable future. Recovery is a dynamic process requiring adaptive management of threats, and there are many paths to accomplishing recovery of a species. We believe that the lands identified in this rule as meeting the definition of critical habitat are adequate to ensure the conservation of Peninsular bighorn sheep throughout their extant range based on the best available scientific information at this time.

Additionally, we recognize that the designation of critical habitat may not

include all of the habitat that may be determined to be necessary for the recovery of Peninsular bighorn sheep, and critical habitat designations do not signal that habitat outside of the designation is unimportant or may not contribute to recovery. Areas outside the final critical habitat designations will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act, as well as regulatory protections afforded by the section 7(a)(2) jeopardy standard and the prohibitions of section 9 of the Act if actions occurring in these areas may affect sheep. See the “Criteria Used To Identify Critical Habitat,” “Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat,” and “Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat To This Final Rule To Revise Critical Habitat” sections of this final rule for more information. Please also see additional discussion regarding recovery plans and conservation of Peninsular bighorn sheep in our responses to Comments 1, 5, 6, 7, and 53 above.

*Comment 60:* Several commenters stated that the proposed rule calls for eliminating large swaths of essential habitat, including a large area of low-elevation habitat along the eastern slopes of the bighorn’s range that is considered by scientists familiar with Peninsular bighorn sheep to be essential habitat for the DPS and requisite for their recovery. Several commenters stated that the proposed critical habitat designation would eliminate alluvial-fan habitat (about 249,000 ac (100,767 ha), as noted by several commenters), much of which is the most important Peninsular bighorn sheep habitat in need of protection due to threats of housing and golf course projects. One commenter believes that not including these areas stands in stark contrast to the discussion in the proposed rule itself which acknowledges that: “Special management considerations or protection may be needed to alleviate the effects of development on Peninsular bighorn sheep habitat, especially lower elevation habitat, alluvial fans, and areas of possible ewe group connectivity near urban areas (October 10, 2007, 72 FR 57746).” The same commenter believes that this retraction of habitat ignores management actions currently in place (e.g., restrictions on trails, prohibitions on dogs) to limit disturbance in habitat so that this DPS could re-colonize historically used areas. Several commenters indicated that it is

important to the sheep's recovery that low-elevation alluvial areas remain critical habitat.

*Our Response:* We agree that low-elevation habitat is important for Peninsular bighorn sheep, and where occurrence data indicated sheep use, we revised our proposed revision of critical habitat to include additional areas, including habitat along the eastern edge of the Santa Rosa Mountains (August 26, 2008, 73 FR 50498). We included low-elevation, low-slope, and alluvial-fan habitat in the designation of critical habitat where the available data support a determination that those areas contain the physical and biological features essential to the conservation of the DPS. See our response to Comment 3 and the "Criteria Used To Identify Critical Habitat" and "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat To This Final Rule To Revise Critical Habitat" sections of this final rule for further discussion of this topic.

*Comment 61:* One commenter believes that the Service eliminated from critical habitat a number of important water sources for Peninsular bighorn sheep. The commenter asserted that most of the 20 springs and seeps documented by the South Coast Regional Water Quality Control Board within existing Peninsular bighorn sheep habitat in the Santa Rosa and San Jacinto National Monument would not be in the proposed critical habitat designation. These springs include Agua Alta Spring, Cottonwood Spring, Potrero Spring, Agua Bonita Spring, Mesquite Flats Spring, Mad Women Spring, Dos Palmas Spring, Indian Spring, East Fork Spring, Palm Canyon Spring, Palm Canyon Hot Spring, West Fork Creek, Engbacha Spring, Trading Post Spring, and Murray Canyon Spring. The commenter further stated that important perennial streams such as Andreas Creek, West Fork Palm Canyon Creek, Cedar Creek, and Snow Creek have also been eliminated in the proposed designation. Finally, the commenter believes that these water sources should remain in critical habitat due to their present value to bighorn sheep recovery and because they will become increasingly important as climate change alters bighorn habitat and likely reduces available water.

*Our Response:* During the process of delineating critical habitat, we used water source information from U.S. Geological Survey's National Hydrography Dataset geodatabase (downloaded January 2007). When delineating boundaries of critical habitat, we made sure to include water sources within critical habitat (see

"Criteria Used To Identify Critical Habitat" section of this rule). We believe we included sufficient water sources within the designation to account for the water needs of Peninsular bighorn sheep. Additionally, the commenter failed to provide: (1) Supporting information that the specific water sources identified in the comment are essential to Peninsular bighorn sheep; (2) data that sheep have been observed and documented to use these water sources; or (3) data indicating that climate change will lead to a reduction in water availability in the Peninsular Ranges. At this point in time, the available scientific evidence does not suggest that the scenario described above by the commenter will result from climate change in the Peninsular Ranges (see our response to Comment 21 above).

*Comment 62:* One commenter believes that the Service made an erroneous determination that all land in Unit 2A is currently occupied by the DPS. The commenter stated that the proposed critical habitat rule is flawed because it does not justify the inclusion of unoccupied areas, in contravention of both the Act and its implementing regulations. The commenter asserted that the criteria used to identify critical habitat clearly included criteria that leads to the inclusion of unoccupied habitat within the critical habitat delineation. The commenter added that the Service's effort to justify inclusion of unoccupied areas also crosses the line of reasonableness, as identified in *Home Builders v. U.S. Fish and Wildlife Service*, 268 F. Supp. 1197, 1214 (E.D. Cal. 2000).

The same commenter opposed the delineation of critical habitat on private property in Riverside County, stating that property-specific surveys and reports by experts reflect that the property neither contains necessary PCEs nor exhibits characteristics consistent with critical habitat. The commenter provided biological reports in support of their assertion that the property is not occupied by Peninsular bighorn sheep, does not contain features essential to the conservation of the species, and does not require special management considerations. Finally, the commenter believes that as unoccupied territory, the property is not essential for the conservation of the DPS, and that the Service erroneously determined that the property contains resources essential to the conservation of Peninsular bighorn sheep.

*Our Response:* All of the critical habitat units (including Unit 2A) are occupied; however, bighorn sheep have large home ranges, and not all areas

within their range (or the critical habitat units) will be occupied at all times of the day, season, or year. Additionally, all critical habitat units contain the PCEs in a continuous patch of habitat that allows the population distribution of Peninsular bighorn sheep within the units to shift and move based on the resource needs of the DPS.

Consequently, individual survey results for Peninsular bighorn sheep within the critical habitat units may be negative in any given year, even though surveyed areas still contain habitat required for the long-term conservation of the DPS.

With regard to the property specific claims from the commenter, we agree that portions of the property in question do not contain the PCEs for Peninsular bighorn sheep. We also recognize that the majority of occurrence data considered in the delineation of critical habitat (local to the property in question) lies to the west of the property in the Santa Rosa Mountains. For reasons discussed in the above paragraph, negative survey results do not automatically indicate an area is not essential to the DPS. We determined that a portion of the property (approximately 46 ac (19 ha) in the southwest corner of section 7) does meet the definition of critical habitat; however, those 46 ac (19 ha) fall within the Coachella Valley MSHCP area and are excluded from this final designation (see "Exclusions Under Section 4(b)(2) of the Act" section of this final rule for a detailed discussion). Other areas in the property, including some areas previously designated as critical habitat in 2001, do not meet the definition of critical habitat and are not included in this designation.

*Comment 63:* One commenter stated that the revision of critical habitat is justified and overdue. The commenter added that the 2001 designation included areas that did not have documentation of use by Peninsular bighorn sheep and the commenter further suggested that the revision is more definitive of the actual critical habitat needs than was the previous designation.

*Our Response:* We agree with the commenter that some areas in the 2001 critical habitat designation did not have documented sheep use. Further, we believe the criteria we used to identify critical habitat in this final rule yields a more precise identification of the areas within the geographical area occupied by Peninsular bighorn sheep containing the physical or biological features essential to the conservation of this DPS. Please see the "Criteria Used To Identify Critical Habitat," "Summary of Changes From the 2001 Critical Habitat

Designation To the 2007 Proposed Rule To Revise Critical Habitat,” and “Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat To This Final Rule To Revise Critical Habitat” sections of this rule for more detailed discussions.

*Comment 64:* Two commenters believe that property owned by Cornishe of Bighorn is not Peninsular bighorn sheep habitat, does not meet the definition of critical habitat, and any benefits associated with designating the property as critical habitat are outweighed by the benefits of exclusion. The commenters indicated the property lies within the approved Coachella Valley MSHCP area and should be excluded from designation pursuant to section 4(b)(2) of the Act.

*Our Response:* Although we disagree with the commenter’s assertion that the area in question does not meet the definition of critical habitat, we acknowledge that the property falls within the boundaries of the Coachella Valley MSHCP from which we are excluding all private lands and permittee-owned or controlled lands. As a result, the property in question is excluded from the designation of critical habitat for Peninsular bighorn sheep. Please see the “Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships” section of this final rule for additional discussion of the Coachella Valley MSHCP and the benefits provided to Peninsular bighorn sheep.

*Comment 65:* In response to our addition of critical habitat to Unit 3 near Interstate 8 in the August 26, 2008, NOA, one commenter stated, “In the October 2007 Proposed Rule, the USFWS made an appropriate proposal for critical habitat near [Interstate 8] based on currently occupied habitat rather than transiently used areas or potential habitat, both of which were not essential to the recovery of this DPS.” The commenter believes that there are no data to suggest more than transient use by a handful of bighorn sheep in Unit 3 near Interstate 8 based on his review of information provided by us under the Freedom of Information Act, the historic record, and the commenter’s fieldwork in this area. The commenter further stated that there is no evidence that there was ever a permanent bighorn sheep population of 20 to 30 individuals between Interstate 8 and the U.S.-Mexico border. The commenter wrote, “During my on-the-ground surveys for bighorn sheep in the [Interstate 8] Island and south of it, no bighorn sheep were observed. That the USFWS has only produced speculative ‘evidence’ of potential bighorn sheep

fecal pellets (which could also be from deer) from this relatively small area clearly shows that it is not permanently occupied by bighorn sheep or that more than a few individuals occasionally visit it.” To illustrate the “transient” nature of bighorn sheep use of the Interstate 8 island area, the commenter described finding ungulate tracks and pellet groups (a preliminary DNA test yielded the ND5 sequence, presumably a positive test for bighorn sheep) concentrated around a sand hill with numerous brittlebush (*Encelia farinosa*) plants; six months later the forage was consumed or desiccated, and no additional ungulate sign was present.

*Our Response:* We determined that the area of concern near Interstate 8 to the U.S.-Mexico border meets the definition of critical habitat and is used more than “transiently” by Peninsular bighorn sheep (Botta 2008b, pp. 1–3; Botta 2008c, p. 1; Botta 2009, pp. 1–4; Davenport 2009, pp. 6–7; James 2007, pp. 1–4; Kim 2008, p. 2; Roblek 2008a, p. 1–12; Roblek 2008b, p. 1; Wagner 2007, p. 1; Wagner 2008, pp. 1–3). According to data in our files, there are numerous and repeated sightings of bighorn sheep over several years in the Jacumba Mountains around the area known as Mountain Springs. A recent aerial survey (conducted on November 17, 2008) counted 14 bighorn sheep, including ewes, lambs, yearlings, and rams in the approximately 3,000-acre area of habitat existing between the east- and west-bound lanes of Interstate 8 (Botta 2009, p. 1). An additional 36 bighorn sheep were counted within less than a mile of the area. Bighorn sheep were also counted in the area during the aerial census conducted in 2006 (Botta 2008b, p. 1). Finally, there are multiple sightings in the area reported by other agencies and individuals, some of which have occurred south of Interstate 8 (Davenport 2009, p. 5). The commenter furnishes no objective, repeatable method for deciding that sheep use of the area is “transient,” nor does he explain how he quantified the number of sheep in the area.

Approximately 50 bighorn sheep were visually detected in the Interstate 8 island area during the last aerial survey. Additionally, the 2006 aerial survey recorded bighorn sheep in the area, and data have been repeatedly obtained from other agencies and individuals (Davenport 2009, p. 5; James 2007, p. 1; Kim 2007, p. 2). The commenter implies that occasional observations of mule deer in the area justifies concluding that the area “is not permanently occupied by bighorn sheep.” However, the commenter furnishes no objective method that is accepted by the scientific

community for determining “permanent” occupancy. Given that aerial surveys and other site visits have repeatedly recorded bighorn sheep in the area, we consider the area occupied by bighorn sheep, and sightings of mule deer do not confound these direct observations of bighorn.

In regard to the commenter’s assertions based on the ground surveys of the Interstate 8 island area, we believe that this type of survey is an unreliable method for estimating bighorn sheep population levels or distribution in the Peninsular Ranges. Although it may be a viable methodology for some locations, the conditions needed for such surveys to be effective do not exist in the Peninsular Ranges. The topography is rugged and vast, and the animals blend with their habitat extremely well, making it easy for an observer to miss bighorn sheep. A group of animals can easily be hidden within the vegetation and topography, and a human (on foot) can only view a small fraction of the area. Furthermore, bighorn sheep are capable of detecting hikers and quickly moving out-of-view before being seen.

The brittlebush scenario described above by the commenter in support of “transient” sheep use illustrates how Peninsular bighorn sheep, a relatively large mammal, exist in one of the harshest deserts in North America. They move across the landscape in response to changing resource conditions and need large intact blocks of habitat to recover and persist through time. Although brittlebush is a Peninsular bighorn sheep forage species, it is not the only one present in the area. The scenario described by the commenter actually lends support to the designation of the area as critical habitat.

*Comment 66:* One commenter stated that the supposed connectivity between the U.S. bighorn sheep population and those in northern Baja has no basis in fact. The commenter added that south of the U.S.-Mexico border, there are only a handful of bighorn sheep sightings within 25 mi (40 km) of the border within the mountains of northern Baja (Sierra Cucapa and Sierra de Juarez), and the commenter believes there is no evidence that these areas constitute more than transient use.

*Our Response:* Bighorn sheep populations are found along the eastern escarpment of the Peninsular Ranges extending most of the length of the Baja Peninsula. An examination of the topography on both sides of the border reveals the type of steep, rugged topography and vegetation typical of bighorn sheep habitat. We find no

reason to believe that prior to European settlement bighorn sheep failed to move across what is now the international boundary. To our knowledge, the mountainous areas south of the border have not been surveyed since the mid 1990's, and the commenter is correct in pointing out our lack of recent information concerning bighorn sheep distribution and abundance in Baja Norte, Mexico. The mid 1990's corresponded with the low point of bighorn sheep population levels in the United States and bighorn sheep were not regularly observed in some areas where they are currently present. Bighorn sheep in Mexico may have experienced similar population fluctuations and changes in distribution over time.

It has been hypothesized that the bighorn sheep we are seeing around Interstate 8 and south are originating from Carrizo Gorge to the north. Although plausible, none of the observed Peninsular bighorn sheep have been radio-collared or ear-marked, as some are in Carrizo Gorge. Therefore, we cannot be certain of the origin of the sheep observed in the U.S. Jacumba Mountains. Interaction with bighorn sheep in the Peninsular Ranges of Mexico is the only possible route for a natural connection with other bighorn sheep populations for the DPS in the United States. All other routes are precluded in the United States by human developments.

*Comment 67:* One commenter states that the area south of Interstate 8 is not essential to the recovery of this DPS because the Carrizo subpopulation has already exceeded the minimum population number needed for recovery (approximately fourfold based on California Department of Fish and Game census data).

*Our Response:* The Recovery Plan for Peninsular bighorn sheep establishes downlisting and delisting criteria that go beyond just attaining a minimum population number, including maintaining at least 25 ewes for 6 and 12 consecutive years, respectively, in each of 9 recovery regions. The goal of maintaining 25 ewes for 6 and 12 years is a minimum, not an upper limit. The designation of critical habitat in the Jacumba Mountains will also contribute to the preservation of habitat connectivity and the ability of Peninsular bighorn sheep to move freely throughout the Peninsular Ranges.

*Comment 68:* Upon examination of our data used in the delineation process obtained by a commenter through the Freedom of Information Act process, the commenter stated the Service and others assume that tracks and pellets found in

the Interstate 8 area are from bighorn sheep rather than mule deer and that "tracks and pellets of bighorn sheep and mule deer are not reliably distinguishable."

*Our Response:* We agree with the commenter that it is not possible to reliably distinguish bighorn sheep and mule deer fecal pellets (by themselves) because there is too much variation. However, in the context of a field situation there is frequently other information present. Most biologists with extensive field experience believe they can identify the respective tracks reliably when there are several sets or the substrate allows for a distinct impression. Additionally, the physical characteristics of the hooves differ; therefore, the tracks are distinguishable by a trained biologist. As previously mentioned, the elevation, topography, and vegetation also provide a context for identification. Given that the vast majority of animal sightings in typical bighorn sheep habitat are Peninsular bighorn sheep, it would be reasonable to conclude that the majority of sign was left by Peninsular bighorn sheep (Botta 2008b, pp. 1–3; Botta 2008c, p. 1; Botta 2009, pp. 1–4; Davenport 2009, pp. 6–7; James 2007, pp. 1–4; Kim 2008, p. 2; Roblek 2008a, pp. 1–12; Roblek 2008b, p. 1; Wagner 2007, p. 1; Wagner 2008, pp. 1–3). As mentioned previously, just because deer are observed near water or at higher elevations in bighorn habitat does preclude the occurrence of Peninsular bighorn sheep in the area.

*Comment 69:* One commenter stated that the proposed critical habitat near Interstate 8 lacks permanent sources of water (one of the PCEs necessary for bighorn sheep survival). The commenter stated that the area south of Interstate 8 proposed for critical habitat does not have any sources of permanent water that would allow for year-round occupancy by bighorn sheep, referencing correspondence from U.S. Border Patrol Supervisor Palmer as evidence.

The commenter also wrote, "The area proposed for critical habitat south of [Interstate 8] lacks adequate escape terrain for permanent bighorn sheep occupancy. My preliminary GIS analysis shows that the escape terrain falls far short of the necessary contiguous 15 square kilometers as defined by McKinney *et al.* (2003) that are needed to sustain a bighorn sheep population. The suggestion in the proposed rule that slopes greater than 20 percent somehow qualify as bighorn sheep escape terrain is erroneous."

*Our Response:* Upon examination of the correspondence with the Border Patrol that was supplied with the

commenter's letter, the correspondence mentions a possible permanent water source south of Interstate 8, approximately one mile from Mountain Springs. Additionally, the correspondence notes that free-standing water was observed in this area from a helicopter on November 17, 2008, and that the surrounding range appears quite dry, which would indicate the water source may be "permanent." Supervisor Palmer confirms that under drought conditions the springs listed by the commenter are typically dry. The Service's surveys throughout the Peninsular Ranges have shown that many water sources that have historically been considered "permanent" are now frequently dry. As Supervisor Palmer mentions in his correspondence, many of these water sources fill or flow following rains. After a rain event the duration of time that free-standing water continues to be available is highly variable, and sheep distribution may reflect variations in water persistence. Currently, many water sources throughout the Peninsular Ranges, including those listed in the Jacumba Mountains, are overgrown with salt cedar (*Tamarix* sp.), and in areas where managers have removed this exotic species, free-standing water has often returned.

Regarding the commenter's assertions about escape terrain, our GIS analysis shows there are 3.5 square mi (9 square km) of 40 to 60 percent terrain and 1.4 square mi (3.6 square km) of greater than or equal to 60 percent terrain south of Interstate 8, for a total of 4.9 square mi (12.6 square km). Bighorn sheep in the area use the Interstate 8 island and the area to the north of the west-bound lanes. If these areas are also included, there are 6.2 square mi (16.2 square km) of 40 to 60 percent terrain and 2.3 square mi (6.1 square km) of terrain greater than or equal to 60 percent for a total of 8.6 square mi (22.3 km). McKinney *et al.* (2003, p. 1233) reported that 12 of 14 populations of desert bighorn sheep persisted, and 8 of the 12 persisting populations occupied areas with greater than 5 square mi (13 km) of escape terrain. Therefore, 4 populations (or a third) persisted with greater than 5 square mi (13 km) of escape terrain. Consequently, we question the commenter's use of the word "necessary." McKinney *et al.* (2003, p. 1235) offered the 5.8 square mi (15 km) figure as a general guideline for planning translocations and management interventions. Such a recommendation highlights the importance of escape terrain to bighorn sheep, but the number does not



represent an absolute requirement. McKinney *et al.* (2003, p. 1235) showed that bighorn sheep populations with access to larger areas of escape terrain experienced less variability in population metrics and a greater probability of persistence. In summary, we believe there is adequate escape terrain in the area to support bighorn sheep, as evidenced by their present occurrence and re-colonization of the area, our GIS analysis, and historical accounts.

We were unable to locate anywhere in the proposed rule where areas of 20 percent slope were described as escape terrain for Peninsular bighorn sheep. Therefore, we assume the commenter was confused by the general description of bighorn sheep habitat, which did contain the 20 percent figure. Bighorn regularly use areas of 20 percent slope (and less) to access important resources. Escape terrain is one essential component of Peninsular bighorn sheep habitat, but there are other essential components, as listed in the proposed revised critical habitat designation. In the Peninsular Ranges, Peninsular bighorn sheep have frequented areas far from classically defined escape terrain for extended periods of time. Therefore, only conserving the very steepest areas is not a viable strategy for ensuring the recovery and persistence of bighorn sheep in the Peninsular Ranges.

#### Comments From Tribes

*Comment 70:* The Agua Caliente Band of Cahuilla Indians stated that the Service should not have designated any of their lands as critical habitat in the proposed rule in light of the relationship between the United States and the Tribe as set forth, *inter alia*, in Executive Order 13175 and Secretarial Order 3206 and because (1) The reservation falls within the Tribe's sovereign jurisdiction, and (2) the land within the reservation does not require special management considerations or protection since it has been and will continue to be conserved pursuant to the Tribal HCP. The Tribe also believes that the benefits of excluding all tribal lands within the Tribal HCP Plan Area from Units 1 and 2A outweigh the benefits of including these lands as critical habitat for the bighorn sheep based on the balancing requirement of section 4(b)(2) of the Act. 16 U.S.C. 1533(b)(2).

*Our Response:* In the proposed rule, we did not finalize any designation of Agua Caliente Band of Cahuilla Indians tribal lands as critical habitat, but proposed them as critical habitat, as required by our regulations at 50 CFR 424.19, and concurrently proposed

those lands for exclusion from critical habitat under section 4(b)(2) of the Act. We believe the conservation benefits for Peninsular bighorn sheep that would occur as a result of designating the 4,790 ac (1,938 ha) in Units 1 and 2A as critical habitat (*e.g.*, protection afforded through the section 7(a)(2) consultation process) are minimal compared to the overall conservation benefits for the DPS that have been realized through the implementation of the 2001 Tribal Conservation Strategy and that will continue to be realized through the Tribe's ongoing commitment to conserve Peninsular bighorn sheep habitat.

Furthermore, the benefits to recovery of inclusion of these lands primarily have already been met through the identification of those areas most important to the DPS. By excluding these lands from the designation, we are honoring our responsibility to work with the Tribe on a government-to-government basis and acknowledging the Tribe's management of its resources, and helping to preserve our ongoing partnerships with the Tribe and to encourage new partnerships with other Tribes, landowners, and jurisdictions. Those partnerships (and the landscape-level, multiple-species conservation planning efforts they promote) are critical for the conservation of Peninsular bighorn sheep. Designating critical habitat on non-Federal lands within the Tribe's 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP boundary could have a detrimental effect on our partnership and could be a significant disincentive to the establishment of future partnerships and HCPs with other Tribes and landowners. Therefore, we are excluding all Agua Caliente Band of Cahuilla Indians tribal lands from the final designation of critical habitat for Peninsular bighorn sheep. See our response to Comment 2 above and the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final rule.

*Comment 71:* The Agua Caliente Band of Cahuilla Indians believes that the proposed rule fails to exclude from designation all tribal lands lying inside portions of proposed Unit 2A (North Santa Rosa Mountains). The Tribe stated these off-reservation tribal lands fall within the geographic region covered by the Tribal HCP, and the Tribal HCP includes conservation measures and actions that will be of greater benefit to the bighorn sheep than designation and piecemeal section 7 consultations. The Tribe suggested that the benefits of excluding these off-reservation tribal lands from designation in Unit 2A

outweigh the benefits of designation, thus satisfying the requirements for exclusion pursuant to section 4(b)(2) of the Act. The Tribe also believes that contrary to the requirements of the Act, Executive Order 13175, and the Secretarial Order, the proposed rule fails to defer to the Tribe's own established standards, thus discouraging the Tribe from developing its own policies and intruding on tribal management of its lands. Additionally, the Tribe believes that designation of critical habitat could delay approval of the Tribal HCP, thus adding to the costs of preparing the Tribal HCP and undermining significant protections for the bighorn sheep. Finally, the Tribe believes that designation of critical habitat can be expected to increase the amount of time and financial resources necessary to undertake covered activities described in the Tribal HCP, yet it is unlikely to yield material benefits for the bighorn sheep.

*Our Response:* The Agua Caliente Band of Cahuilla Indians is correct in that we did not propose their lands within Unit 2A for exclusion. At the time of the proposed rule, we were not aware of tribal ownership in this unit. In light of the above comment, we re-analyzed our ownership data for Unit 2A and found that tribal land exists within that unit. In the NOA published in the **Federal Register** on August 26, 2008 (73 FR 50498), we revised our proposed exclusion to include approximately 467 ac (189 ha) of tribal land in Unit 2A. Furthermore, we are excluding all tribal lands from the final revised designation of critical habitat for Peninsular bighorn sheep as stated above in our responses to Comments 2 and 70, and the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final rule.

*Comment 72:* The Agua Caliente Band of Cahuilla Indians agrees with the Service insofar as we state that "fish, wildlife, and other natural resources on Tribal lands are better managed under Tribal authorities, policies, and programs than through Federal regulation \* \* \*." But the Tribe does not believe that it is appropriate to limit the preceding statement by adding the final phrase "wherever possible and practicable." The Tribe stated that tribal sovereignty goes further than precluding Federal regulation of reservation lands "wherever possible and practicable."

*Our Response:* We believe our position is consistent with the Act and all applicable policies and guidance (*i.e.*, Secretarial Order 3206, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the

Endangered Species Act" (June 5, 1997); the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951); Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2)). There were situations in the past, and there will continue to be situations in the future, where it is necessary to designate critical habitat on tribal lands. The Service is not prohibited from designating critical habitat on tribal lands and can only exclude lands meeting the definition of critical habitat from designation when we can demonstrate that the benefits of exclusion outweigh the benefits of inclusion of such lands and that the exclusion will not result in the extinction of the species concerned. By caveating our position with the statement "wherever possible and practicable," we recognize that there may be situations where we must designate critical habitat on tribal lands. We believe that, in most cases, designation of tribal lands as critical habitat provides very little additional benefit to threatened and endangered species. Conversely, such designation is often viewed by tribes as unwarranted and an unwanted intrusion into tribal self governance, thus compromising the government-to-government relationship essential to achieving our mutual goals of managing for healthy ecosystems upon which the viability of threatened and endangered species populations depend.

#### Comments Related to Critical Habitat Designation Process

*Comment 73:* One commenter believes the public hearing was not adequately publicized, as there was no notice in a local newspaper.

*Our Response:* Public involvement in the activities and proposals of the Service is very important to us. We made every effort to ensure that the public was adequately apprised of Peninsular bighorn sheep hearings at least 15 days prior to the hearings occurring. First, in our **Federal Register** notice published on August 26, 2008 (73 FR 50498), we provided information about the date, time, and location of the public hearings for the Peninsular bighorn sheep proposed revision of critical habitat. Second, we issued a press release on August 25, 2008, which was distributed to more than 100 stakeholders, including elected officials, local governments, species experts, interested members of the public, and all local media outlets. Third, we posted the press release and other information

about the Peninsular bighorn sheep on the Service's Region 8 Web site. Fourth, a copy of the August 26, 2008, **Federal Register** notice was posted on the <http://www.regulations.gov> Web site. Finally, announcements of the public hearings on September 10, 2008, were carried in news stories that published in the Riverside Press-Enterprise on August 28, 2008, the San Diego Union-Tribune on August 29, 2008, and the Los Angeles Times on September 2, 2008. Although legal notices were not specifically published in local newspapers, such notices are not required and we believe that adequate notice of the hearings was provided to the public in a timely manner through a variety of conduits.

#### Comments From Other Federal Agencies

*Comment 74:* The California Desert District of the BLM stated that the proposed changes to critical habitat affect BLM management of public lands within the jurisdiction of their El Centro and Palm Springs/South Coast Field Offices. The BLM stated they have no objections to the revised boundaries of critical habitat in the Palm Springs/South Coast Field Office and added that they support the use of the best available scientific information when designating regulatory boundaries such as for critical habitat pursuant to the Act. The BLM stated that in the El Centro Field Office jurisdiction, they agree that the revised boundaries near the Coyote Mountains that exclude the Ocotillo aggregate mining operations better reflect the actual use areas for bighorn sheep. Additionally, the BLM stated that in the Fish Creek Mountains the boundary appears to be drawn through the existing mining pit of U.S. Gypsum Corporation, which is partially permitted by BLM. The BLM requested that revisions be made at this location to exclude the mine.

*Our Response:* We determined that BLM lands in the Fish Creek Mountains contain physical or biological features essential to the conservation of Peninsular bighorn sheep, and therefore, meet the definition of critical habitat (see "Criteria Used To Identify Critical Habitat" section below). Occurrence data used in the delineation of critical habitat indicates that areas adjacent to the mining pit are utilized by Peninsular bighorn sheep. However, we recognize that lands within active mining pits do not generally provide suitable habitat or suitable conditions for this DPS. Thus, we are not designating lands in the Fish Creek Mountains within the existing active mining pit of U.S. Gypsum Corporation. When determining the critical habitat boundaries within this

final revised rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, active mining pits, and other structures because such lands lack essential features for the Peninsular bighorn sheep. 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 structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this final revised critical habitat are 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.

#### Comments From State Agencies

*Comment 75:* Two commenters from the California Department of Parks and Recreation stated that the proposed critical habitat does not include approximately 249,000 ac (100,767 ha) of alluvial-fan habitat previously designated as critical habitat, much of which is the most important sheep habitat in the range in need of protection due to threats of housing development and golf course projects.

*Our Response:* As discussed in our responses to Comments 3 and 60 above, we agree that low-elevation habitat is important for Peninsular bighorn sheep. We acknowledge there are some low-elevation areas included in the 2001 designation of critical habitat that are not included in this final designation. Although we received limited new information during the public comment period indicating sheep use of low-elevation and low-slope habitat, the available data do not indicate that the areas of low-elevation and low-slope habitat not included in this designation meet the definition of critical habitat. Please see the "Criteria Used To Identify Critical Habitat," the "Summary of Changes From the 2001 Critical Habitat Designation to the 2007 Proposed Rule To Revise Critical Habitat," and the "Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat to This Final Rule To Revise Critical Habitat" sections of this final rule for further discussion of this topic.

*Comment 76:* Two commenters from the California Department of Parks and Recreation indicated that the proposed critical habitat delineation proposes to create two areas of metapopulation fragmentation: one isolating the San

Jacinto Mountains (Unit 1) and the other isolating the Carrizo Canyon (Unit 3) population in the south end of the range.

*Our Response:* As discussed in our responses to Comments 1, 6, and 51, the best scientific data currently available do not support a determination that specific areas containing the physical or biological features essential to the conservation of the Peninsular bighorn sheep connect Units 1 and 3 to the remainder of the range. Please see the "Criteria Used To Identify Critical Habitat" and "Summary of Changes From the 2001 Critical Habitat Designation to the 2007 Proposed Rule To Revise Critical Habitat" sections of this final rule for further discussion.

*Comment 77:* Two commenters from the California Department of Parks and Recreation expressed concern that the proposed revision to critical habitat was completed without the consultation and support of the Peninsular bighorn sheep recovery team or any other group of biologists with in-depth knowledge of bighorn sheep or Peninsular bighorn sheep habitat.

*Our Response:* We followed the appropriate guidance and regulations regarding inclusion of expert biologists and others during development of this critical habitat designation. In accordance with our policy on peer review, published on July 1, 1994 (59 FR 34270), we solicited expert opinions from five knowledgeable individuals (some of which were on the recovery team) with scientific expertise that included familiarity with the DPS, the geographic region in which it occurs, and conservation biology principles. Furthermore, on May 14, 2007, representatives from the Carlsbad Fish and Wildlife Office and the Regional Office, including the Regional Director, met with recovery team members in part to inform members that we were initiating work to propose revisions to designated critical habitat for Peninsular bighorn sheep. At that meeting, we requested that recovery team members submit any data they wanted us to consider in our proposed revision. For further discussion of this topic, see our responses to Comments 11 and 39 above.

#### Comments Related to the Draft Economic Analysis

*Comment 78:* One commenter asserts that in assessing the costs of the designation of critical habitat for Peninsular bighorn sheep the Service must look only at the incremental cost of the proposed designation and must not consider the costs attributable to

listing alone when considering exclusion of habitat areas.

*Our Response:* The U.S. Office of Management and Budget's (OMB) guidelines for conducting economic analysis of regulations direct Federal agencies to measure the costs of a regulatory action against a baseline, which it defines as the "best assessment of the way the world would look absent the proposed action." In other words, the baseline includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat. Impacts that are incremental to that baseline (*i.e.*, occurring over and above existing constraints) are attributable to the proposed regulation. Significant debate has occurred regarding whether assessing the impacts of the Service's proposed regulations using this baseline approach is appropriate in the context of critical habitat designations.

In order to address the divergent opinions of the courts and to provide the most complete information to decision-makers, the economic analysis reports both: (a) The baseline impacts of Peninsular bighorn sheep conservation from protections afforded the DPS absent critical habitat designation; and (b) the estimated incremental impacts precipitated specifically by the designation of critical habitat for the species. Summed, these two types of impacts comprise the fully co-extensive impacts of Peninsular bighorn sheep conservation in areas considered for critical habitat designation. When considering the economic impacts of a designation under section 4(b)(2) of the Act, we consider only the incremental economic impacts of the proposed designation.

Incremental effects of critical habitat designation are determined using the Service's December 9, 2004, interim guidance on "Application of the 'Destruction or Adverse Modification' Standard Under Section 7(a)(2) of the Endangered Species Act" and information regarding what potential consultations and project modifications may potentially occur as a result of critical habitat designation over and above those associated with the listing. In *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, the Ninth Circuit invalidated the Service's regulation defining destruction or adverse modification of critical habitat, and the Service no longer relies 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, the Service determines 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. A detailed description of the methodology used to define baseline and incremental impacts is provided in the "Economic Analysis" section of this final rule and the DEA.

*Comment 79:* One commenter stated that the Service should consider both the revised designation of critical habitat and possible economic exclusions together. Additionally, the commenter asserted that it is very difficult to comment on the impact of the critical habitat designation, either individually or globally, without an understanding of which properties will ultimately be included in critical habitat. The commenter requested that the Service provide an adequate comment period for review of the economic exclusions.

*Our Response:* We are not excluding any areas from this final critical habitat rule based on economics. Furthermore, we fully articulated our proposed critical habitat designation and presented this proposal to the public in the October 10, 2007, proposed rule (73 FR 57740) and the August 26, 2008 NOA (73 FR 50498). We opened two comment periods to allow the public an adequate opportunity to review and comment on the proposed critical habitat designation and the DEA. The first comment period opened October 10, 2007 (72 FR 57740), and closed December 10, 2007, and was associated with the publication of the proposed revised rule. The second comment period opened August 26, 2008 (73 FR 50498), and closed October 27, 2008, and was associated with the notice of availability of the DEA, announcement of revisions to the proposed critical habitat, and a notice of public hearings that were held September 10, 2008.

*Comment 80:* Several commenters suggested that if economics are considered in the critical habitat designation, then the Service should consider the economic impact to desert tourism if the Peninsular bighorn sheep become extinct. Another commenter suggested that the economic impacts of potential extinction or reduction in population size be considered as they relate to the tourism industry.

*Our Response:* The commenters' suggestions are outside the realm of what we are required to consider when evaluating the economic effects of a critical habitat designation. The economic analysis for Peninsular bighorn sheep calculates baseline costs associated with listing and the

incremental costs of critical habitat designation, not the economic effects of a potential population decrease or extinction.

#### **Summary of Changes From the 2001 Critical Habitat Designation to the 2007 Proposed Rule To Revise Critical Habitat**

The areas identified in the October 10, 2007 (72 FR 57740), proposed revision constitute a revision of the areas designated as critical habitat for Peninsular bighorn sheep on February 1, 2001 (66 FR 8650). The main differences in areas we designated as critical habitat for the Peninsular bighorn sheep in 2001 and areas we proposed as critical habitat in the 2007 proposed revision include the following:

(1) We re-evaluated and revised the PCEs in light of the Alameda whipsnake court case (*Homebuilder's Ass'n of Northern Cal. v. U.S. Fish and Wildlife Service*, 268 F. Supp.2d 1197 (E.D. Cal. 2003)) and other relevant case law, and followed current Service guidelines and policies. The PCEs differ from those in the 2001 critical habitat rule in that they are reorganized into five separate PCEs for clarity. Furthermore, we added specific information on elevational range, plant species used for foraging, and range of slopes required by the DPS. This additional specificity was gained by evaluating the Recovery Plan and examining all recent sheep information, including data from radio collars and GPS collars providing precision to the identification of habitats used and preferred by Peninsular bighorn sheep. Applying the more precise PCEs to the mountain ranges inhabited by Peninsular bighorn sheep allowed us to fine tune the proposed revision to those areas containing preferred habitat for sheep use and remove those areas that we have determined, based on the best scientific data currently available, do not meet the definition of critical habitat for the Peninsular bighorn sheep. For example, the 2001 final rule included high elevation (above 4,600 ft (1,402 m)), densely vegetated, and forested habitat that we now believe to be inappropriate for sheep use in the San Jacinto, Santa Rosa, and Vallecito Mountains, based on the new information.

(2) The 2001 final rule used a generalized methodology for delineating critical habitat that resulted in the designation of one critical habitat unit for Peninsular bighorn sheep totaling 844,897 ac (341,919 ha) (February 1, 2001, 66 FR 8650). The proposed revision was based on a more specific methodology utilizing more current and robust data that resulted in three critical

habitat units including approximately 384,410 ac (155,564 ha) of land in Riverside, San Diego, and Imperial Counties, California, a reduction of 460,487 ac (186,355 ha) from the 2001 final rule (February 1, 2001, 66 FR 8650). The areas included in the proposed revised critical habitat were almost entirely within the boundaries of the existing (2001) critical habitat. Approximately 72 ac (29 ha) of BLM land in Unit 3 were outside the boundary of the 2001 critical habitat.

The reduction in total area from the 2001 final critical habitat designation was primarily the result of using the revised criteria to delineate critical habitat. In our 2001 final critical habitat designation, we delineated critical habitat based on the methodology used in the Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California (Service 2000). In developing the 2007 proposed revision, we reexamined the methodology outlined in the 2000 Recovery Plan and the 2001 critical habitat designation, and updated that methodology based on the best available information (including more specific habitat information and additional occurrence data) to identify areas that meet the definition of critical habitat (see "Criteria Used To Identify Critical Habitat" section). Upon reevaluation of the data available at the time of the 2001 critical habitat designation, data obtained since, and our revised methodology for delineating critical habitat, we have determined that some areas (e.g., potential connectivity areas and low-elevation areas, and other expanses described below) included in the 2001 designation do not meet the definition of critical habitat because the available data we have for these specific areas do not support such a determination.

Potential connectivity areas were included in the 2001 designation because they were thought to allow sheep movement between ewe subpopulations and maintain genetic diversity in the metapopulation; however, the 2001 designation was overly broad and generalized, and the current available data do not support a determination that specific areas between Units 1 and 2A and Units 2B and 3 contain the physical or biological features essential to the conservation of the DPS. We have radio collar data of two individual rams indicating the rams spent time in both Unit 1 and Unit 2A and that both animals must have traveled through intervening habitat between these units. One ram traveled between the units multiple times between 1993–1996, while the other ram traveled between the units once in

2003. However, we do not have radio collar data of these rams in the intervening habitat. These data suggest that when traveling, the rams travel quickly and likely do not spend much time in the intervening habitat, otherwise animals likely would have been detected in those areas. The available data showing rams traveling in the intervening habitat between Unit 1 and Unit 2A do not support the delineation of a migratory route between these units. Likewise, the available data do not support the accurate identification of specific areas used by the Peninsular bighorn sheep as potential corridors connecting Unit 3 to the remainder of the range.

Based on the current available scientific data, we have determined that some areas of low-elevation habitat, including alluvial fans and washes, that were included in the 2001 designation because of the seasonal abundance of potential resources in those areas do not meet the definition of critical habitat. Based on our evaluation of the available information indicating a lack of current or historical Peninsular bighorn sheep use in these areas, we have determined that these specific areas are not essential for the conservation of the DPS (see "Criteria Used to Identify Critical Habitat" section). Additionally, like our methodology for the 2007 proposed revision, the 2001 methodology used a minimum slope criterion of 20 percent to delineate essential habitat; however, a 0.5 mi (0.8 km) buffer was included around slopes of greater than or equal to 20 percent (Service 2000, p. 158). This contributed to the inclusion of expanses of unoccupied low-elevation habitat in the 2001 designation that we have determined are not essential for the conservation of the DPS (see "Criteria Used to Identify Critical Habitat" section). The 2007 proposed rule did not include a buffer zone area around habitat determined to be essential to the DPS.

Little consideration was given to the distribution of occurrence data and specific ewe group distributions in the methodology used to delineate the 2001 critical habitat boundary. This resulted in expanses of critical habitat (in addition to the potential connectivity areas and low-elevation habitat) in the 2001 designation in which we had little to no occurrence records that would indicate sheep use those areas. For example, we had occupancy data dating back to 1940, yet extensive areas along the length of the Peninsular Ranges within the boundary of the 2001 designation contained little to no data that would support those areas as meeting the definition of critical habitat.

In general, some of the main areas previously designated as critical habitat that we have now determined are not essential for the conservation of the DPS include the following: The northern and western most portions of the San Jacinto Mountains; the western and eastern most portions of the Santa Rosa Mountains; and portions of the Pinyon, Sawtooth, In-Ko-Pah, Fish Creek, and Coyote mountains.

The Recovery Plan generally used two criteria, the presence of escape terrain and unobstructed view, as key habitat requirements when delineating boundaries of the areas essential to Peninsular bighorn sheep with little consideration of the presence of the PCEs required by this DPS. In the 2007 proposed revision, we considered all five of the revised PCEs in delineating proposed revised critical habitat boundaries, which results in a more precise determination of essential habitat (see “Primary Constituent Elements for the Peninsular Bighorn Sheep” and “Criteria Used to Identify Critical Habitat” sections). Because a detailed vegetation map was not available at the time of the Recovery Plan, a team of biologists flew the entire western boundary in a helicopter and visually assessed vegetation associations (Service 2000, p. 159). The western boundary was determined by consensus and recorded by GPS from the helicopter position every ten seconds (Service 2000, p. 159). A 0.5 mi (0.8 km) buffer was added to this line to account for the advent of fire suppression (Service 2000, p. 160). This method delineated a general approximation of Peninsular bighorn sheep habitat and resulted in an overbroad designation of critical habitat in these areas. In determining the western boundary of essential habitat in the 2007 proposed revision, we used recent vegetation maps that cover the entire range of the Peninsular bighorn sheep, along with detailed recent aerial photography, expert opinion, and sheep use data to

delineate boundaries, which we determined more precisely captures the areas on which are found the physical or biological features essential to the DPS.

In summary, the recent data and methodology considered and used in the 2007 proposed revision and this final rule more accurately delineates the specific areas of Peninsular bighorn sheep habitat that meet the definition of critical habitat. The methods used in the 2000 Recovery Plan and the 2001 critical habitat designation resulted in a more inclusive delineation of essential habitat due to limited data. Application of the revised methodology, based on the best available information, identified 460,487 ac (186,355 ha) of previously designated critical habitat that do not meet the definition of critical habitat, and therefore we are not including these areas in this final revised critical habitat designation.

(3) Approximately 29,924 ac (12,110 ha) of designated critical habitat were vacated in the July 31, 2006, consent decree. A portion of those acres were within the 2007 proposed revised critical habitat. Of the 13,213 ac (5,347 ha) of vacated Agua Caliente Band of Cahuilla Indians tribal lands, approximately 4,512 ac (1,826 ha) were included in the 2007 proposed revision. However, in our proposed revision we proposed to exclude all tribal lands from the final designation. Approximately 16,691 ac (6,756 ha) of mining lands at Ocotillo Mineral Material Sites and Fish Canyon Quarry property were also vacated. In the 2007 proposed revision to critical habitat, we included roughly 50 percent of those vacated lands; specifically, we included lands along the northernmost portion of the Ocotillo Mineral Material Sites property and the middle to southern portion of the Fish Canyon Quarry property. Both of these mining properties contained actively mined lands, but also contained areas in which we have recent documented use by

Peninsular bighorn sheep and areas that meet the criteria used to identify critical habitat. The Desert Riders lands vacated in the consent decree (approximately 20 ac (8 ha)) were not included in the proposed revision.

Our 2001 final critical habitat rule included the statement that “\* \* \* we are not aware of any information suggesting that particular areas within designated critical habitat are currently unsuitable or unused over the generational timeframe needed for the long-term conservation of bighorn sheep in the Peninsular Ranges” (February 1, 2001, 66 FR 8655). However, we reconsidered the information that was available to us at the time of the 2001 designation in light of additional information currently available to us. We determined that the methodology used in the 2007 proposed revision (and this final rule), which utilized the best available information, provides a more accurate delineation of the specific areas that meet the definition of critical habitat for the Peninsular bighorn sheep than that relied upon in the 2001 critical habitat designation (see “Criteria Used to Identify Critical Habitat” section).

Table 1 below outlines the changes in areas in each unit between the 2001 final critical habitat rule, the 2007 proposed revised critical habitat rule, and this 2009 final revised critical habitat rule for Peninsular bighorn sheep. Table 2 provides the approximate area determined to meet the definition of critical habitat for Peninsular bighorn sheep in the 2007 proposed rule, areas added to the proposed rule announced in the NOA published in the **Federal Register** on August 26, 2008, areas excluded from the final revised critical habitat designation under section 4(b)(2) of the Act (please see “Exclusions Under Section 4(b)(2) of the Act” for a detailed discussion), and areas being designated as final revised critical habitat.

TABLE 1—CHANGES BETWEEN THE FEBRUARY 1, 2001 (66 FR 8650), CRITICAL HABITAT DESIGNATION, THE OCTOBER 10, 2007 (72 FR 57740), PROPOSED DESIGNATION, AND THIS FINAL REVISED DESIGNATION.

| Critical habitat unit in this final rule        | County                          | 2001 designation of critical habitat (66 FR 8650) and ac (ha) | 2007 Proposed revision to the critical habitat designation (72 FR 57740) and ac (ha) | 2009 Final revised critical habitat designation and ac (ha) |
|---|---------------------------------|---|--|---|
| 1. San Jacinto Mts. ....                        | Riverside .....                 | Included as part of one large unit; 844,897 ac (341,919 ha).  | Included as Unit 1; 15,273 ac (6,180 ha).  | Included as Unit 1; 4,597 ac (1,860 ha).                    |
| 2A. N. Santa Rosa Mts.                          | Riverside .....                 | .....do .....   | Included as Unit 2A; 74,998 ac (30,350 ha).  | Included as Unit 2A; 45,100 ac (18,251 ha).                 |
| 2B. S. Santa Rosa Mts. south to Vallecito Mts.. | Riverside, San Diego, Imperial. | .....do .....   | Included as Unit 2B; 226,211 ac (91,545 ha).   | Included as Unit 2B; 248,021 ac (100,371 ha).               |

TABLE 1—CHANGES BETWEEN THE FEBRUARY 1, 2001 (66 FR 8650), CRITICAL HABITAT DESIGNATION, THE OCTOBER 10, 2007 (72 FR 57740), PROPOSED DESIGNATION, AND THIS FINAL REVISED DESIGNATION.

| Critical habitat unit in this final rule | County                   | 2001 designation of critical habitat (66 FR 8650) and ac (ha) | 2007 Proposed revision to the critical habitat designation (72 FR 57740) and ac (ha) | 2009 Final revised critical habitat designation and ac (ha) |
|--|--------------------------|---|--|---|
| 3. Carrizo Canyon .....                  | San Diego, Imperial .... | .....do .....   | Included as Unit 3; 67,928 ac (27,489 ha).   | Included as Unit 3; 79,220 ac (32,059 ha).                  |
| Totals .....                             | .....                    | 844,897 ac .....<br>(341,919 ha) .....                        | 384,410 ac .....<br>(155,564 ha) .....   | 376,938 ac.<br>(152,542 ha).                                |

### Summary of Changes From the 2007 Proposed Rule To Revise Critical Habitat to This Final Rule To Revise Critical Habitat

The areas identified in this final revised rule constitute a revision of the areas we proposed to designate as critical habitat for Peninsular bighorn sheep on October 10, 2007 (72 FR 57740). In light of substantial public comments and a revision of our criteria used to identify critical habitat, we reevaluated and included in this final rule three general areas that were not included in the 2007 proposed rule. These additions (described below) were announced in the NOA published in the **Federal Register** on August 26, 2008, (73 FR 50498), and include the following: Areas along the eastern edge of the Santa Rosa Mountains in Units 2A and 2B; parts of the San Ysidro, Pinyon, and Vallecito Mountains in Unit 2B; and a portion of the Jacumba Mountains in Unit 3 (approximately 36,240 ac (14,666 ha)). The reduction in total area from the 2007 proposed critical habitat designation is primarily the result of habitat exclusions under section 4(b)(2) of the Act (described below). The main differences between the 2007 proposed critical habitat rule and this final rule include the following:

(1) During the first and second comment periods for the proposed rule, we received significant comments from the public, including biologists familiar with Peninsular bighorn sheep, which led us to reevaluate and revise our criteria used to identify critical habitat. Please see the “Changes to Proposed Revised Critical Habitat” section of the August 26, 2008, NOA (73 FR 50498), and the “Criteria Used To Identify Critical Habitat” section of this final rule for more information on our revised criteria.

(2) During the first and second comment periods for the proposed rule, we received significant comments from the public, including biologists familiar with Peninsular bighorn sheep, on areas essential to the DPS that should be

included in the designation. As a result of these comments, new information received, and revision of the criteria used to identify critical habitat, we reevaluated the following: Areas along the eastern edge of the Santa Rosa Mountains in Units 2A and 2B; parts of the San Ysidro, Pinyon, and Vallecito Mountains in Unit 2B; and a portion of the Jacumba Mountains in Unit 3. Over 98 percent of these areas are currently designated as critical habitat for Peninsular bighorn sheep (see 50 CFR 17.95(a); February 1, 2001, 66 FR 8650); however, we did not propose these areas as critical habitat in the October 10, 2007, proposed revision to critical habitat (72 FR 57740). Below we describe each area we reevaluated, explain why we did not include the areas in the 2007 proposed rule, and explain why we are including these areas in the final revised critical habitat designation.

#### *Eastern Edge of the Santa Rosa Mountains*

The eastern edge of the Santa Rosa Mountains stretches along developed and agricultural areas of the Coachella Valley from Palm Desert southeast to the Salton Sea. Along this interface, sheep currently exist near areas of high human activity where habitat is threatened by spreading development. We delineated proposed revised critical habitat along the eastern slope of the Santa Rosa Mountains where occurrence data supported a determination that these areas contained the physical or biological features essential to the conservation of the DPS, in some cases immediately adjacent to the edge of development and the existing critical habitat boundary (66 FR 8650, February 1, 2001). The eastern edge of the Santa Rosa Mountains contains low-elevation alluvial-fan habitat that may be important to Peninsular bighorn sheep. Therefore, we included low-elevation alluvial-fan habitat in the proposed revised designation in cases where occurrence data indicated sheep are using these areas. However, large

expanses of currently designated critical habitat (2001) lack occurrence data to indicate current or historical use by sheep of those areas, including some low-elevation alluvial habitat. As such, we did not include all currently designated critical habitat along the eastern edge of the Santa Rosa Mountains in the proposed revised critical habitat designation.

During the first public comment period, we received a number of comments from biologists familiar with Peninsular bighorn sheep that included additional information regarding the importance of low-elevation and alluvial-fan habitat along the eastern edge of the Santa Rosa Mountains. We also received a limited amount of recently collected occurrence data in wash areas along the eastern edge of the south Santa Rosa Mountains. Additionally, we received comments from Peninsular bighorn sheep biologists indicating that our consideration of data since the time of listing (1998 to present) was inadequate. We then revised our criteria used to identify critical habitat to include occurrence data since 1988 (an additional 10 years of data from what we considered in the proposed rule).

In light of the additional information received and the revision of our criteria used to identify critical habitat, we reevaluated and revised our proposed revised critical habitat boundary along the eastern edge of the Santa Rosa Mountains. We believe that low-elevation habitat is important for Peninsular bighorn sheep because these areas can provide seasonal abundance of forage vegetation and water resources. Where occurrence data indicated sheep use, we revised our proposed revision of critical habitat to include four additional areas along the eastern edge of the Santa Rosa Mountains. These areas include approximately 32 ac (13 ha) in two parcels along the urban interface between the cities of Cathedral City and Palm Desert in Unit 2A; 3,009 ac (1,218 ha) on and around Indio Mountain in Unit 2A; and 7,477 ac

(3,026 ha) of low-elevation and wash habitat to the east of the southernmost portion of the Santa Rosa Mountains in Unit 2B.

Approximately 99 percent of these areas are currently designated as critical habitat (66 FR 8650, February 1, 2001); an approximately 77-ac (31-ha) parcel and a 3-ac (1-ha) parcel located near Palm Desert are outside of the area currently designated as critical habitat. Because we determined that these areas contain the features essential to the conservation of the DPS, providing seasonal abundance of forage vegetation and water resources, we are including approximately 10,518 ac (4,257 ha) along the eastern edge of the Santa Rosa Mountains in the final revised critical habitat designation for Units 2A and 2B.

#### *San Ysidro, Pinyon, and Vallecito Mountains*

The San Ysidro, Pinyon, and Vallecito Mountains roughly comprise the middle portion of the Peninsular bighorn sheep range in the United States. We included the majority of these mountains in the October 2007 proposed rule to revise critical habitat (October 10, 2007, 72 FR 57740). Although the areas were included in the existing critical habitat designation, we did not include some extreme western portions of the San Ysidro and Pinyon Mountains and the northeastern edge of the Vallecito Mountains in the proposed rule to revise critical habitat because we determined those areas did not meet the definition of critical habitat.

During the first public comment period, we received comments from several species experts who are currently studying the Peninsular bighorn sheep indicating that we did not consider a number of areas along the western San Ysidro and Pinyon Mountains and the northeastern edge of the Vallecito Mountains that are known to be occupied. The commenters indicated that we were provided occurrence data that indicated occupancy of these areas by bighorn sheep prior to publication of the October 10, 2007, proposed rule (72 FR 57740). Upon receiving these comments, we examined the occurrence data used to delineate the proposed revised critical habitat boundary and found that a set of data was missing from our GIS database. We have since included that occurrence data into our GIS database.

In light of this data and our revised criteria used to identify critical habitat to include data since 1988, we reevaluated the western San Ysidro and Pinyon Mountains and the northeastern edge of the Vallecito Mountains and determined that certain areas do meet

the definition of critical habitat. We revised our proposed designation of critical habitat to include approximately 6,503 ac (2,632 ha) in five areas along the western San Ysidro Mountains, 5,176 ac (2,095 ha) in the western Pinyon Mountains, and 2,751 ac (1,113 ha) along the northeastern edge of the Vallecito Mountains (all in Unit 2B). Approximately 97 percent of these areas are currently designated as critical habitat (February 1, 2001, 66 FR 8650). An approximately 53 ac (21 ha) parcel located near Parks Canyon and an approximately 360 ac (146 ha) parcel located in the San Ysidro Mountains west of Borrego Springs are outside of the area currently designated as critical habitat. We are including the approximately 14,430 ac (5,840 ha) along the San Ysidro, Pinyon, and Vallecito Mountains in the final revised critical habitat designation for Unit 2B.

#### *Jacumba Mountains*

The Jacumba Mountains represent the southernmost portion of the Peninsular Ranges in the United States, and the southernmost extent of Peninsular bighorn sheep's extant range in the United States. Part of the Jacumba Mountains were included in the 2007 proposed revised critical habitat designation, including an area known as the Interstate 8 "island" where there were multiple sheep sightings from 2008. However, we had limited data at the time of the proposed critical habitat rule indicating occupancy or sheep use in the rest of the southeast Jacumba Mountains and the rugged terrain extending east and south to the U.S.-Mexico border. Therefore, we included a small amount of the currently designated critical habitat just north of the U.S.-Mexico border in Imperial County in the October 10, 2007, proposed revision to critical habitat (72 FR 57740).

Since the proposed revised critical habitat designation was published, there have been additional sightings and reports of sheep activity around and within the Interstate 8 island, including suitable habitat areas that extend south to the U.S.-Mexico border. Data recently collected by Service biologists and other biologists familiar with the DPS include actual sightings of multiple sheep and reports of sheep scat and tracks throughout the area, indicating that this area is currently occupied by a group of Peninsular bighorn sheep. This area contains rugged habitat with the features essential to Peninsular bighorn sheep conservation and is contiguous with habitat in Mexico. Additionally, the Jacumba Mountains represent the only area of habitat connecting the DPS

listed in the United States with other bighorn sheep populations that occupy the Peninsular Ranges in Mexico. Therefore, we revised our proposed designation of critical habitat for Peninsular bighorn sheep to include approximately 11,292 ac (4,570 ha) of habitat in the Jacumba Mountains (Unit 3), which is currently designated as critical habitat (February 1, 2001, 66 FR 8650). This revision was based on recent occurrence data and the need to be consistent with the critical habitat delineation process we used that includes areas of repeated sheep use.

In total, we added approximately 36,240 ac (14,666 ha) of private, Federal, and State land to the October 10, 2007, proposed revised critical habitat designation (72 FR 57740) for Peninsular bighorn sheep (Table 1).

(3) While reevaluating the boundaries of the proposed revised critical habitat designation as described above, we noticed three areas of high-elevation habitat above 4,600 ft (1,400 m) that did not accurately follow the boundaries of the essential features and do not contain suitable habitat. Therefore, we removed approximately 66 ac (28 ha) in proposed Unit 1 and two parcels totaling approximately 97 ac (39 ha) in proposed Unit 2B from the October 10, 2007, proposed revision to critical habitat (72 FR 57740) for the Peninsular bighorn sheep (Table 1) and are not including these areas in the final revised critical habitat designation.

(4) Based on revised ownership data, we announced changes in the August 26, 2008, NOA (73 FR 50498) to the areas considered for exclusion from that which we stated in the 2007 proposed critical habitat rule. With the changes announced in the NOA, the proposed exclusion under section 4(b)(2) of the Act for Agua Caliente Band of Cahuilla Indians lands totaled approximately 4,790 ac (1,938 ha). We determined that the benefits of exclusion outweigh the benefits of inclusion on these lands; therefore, we excluded approximately 4,790 ac (1,938 ha) of Agua Caliente Band of Cahuilla Indians tribal lands in Units 1 and 2 under section 4(b)(2) of the Act (see "Exclusions Under Section 4(b)(2) of the Act" section of this final rule for a detailed discussion).

(5) In the proposed rule, we announced that we were considering the exclusion of lands covered under the then-draft Coachella Valley MSHCP under section 4(b)(2) of the Act. The Coachella Valley MSHCP has since been finalized, and we determined that the benefits of exclusion outweigh the benefits of inclusion on these lands; therefore, we excluded approximately 38,759 ac (15,685 ha) of private and

permittee-owned or controlled lands within the Coachella Valley MSHCP under section 4(b)(2) of the Act (see "Exclusions Under Section 4(b)(2) of the Act" section of this final rule for a detailed discussion).

As a result of the above additions to the 2007 proposed revised critical habitat designation, removal of areas included in the 2007 proposed revised critical habitat designation, and exclusions under section 4(b)(2) of the Act, we are designating approximately 376,938 ac (152,542 ha) of land in Riverside, San Diego, and Imperial Counties as critical habitat in this final rule.

### 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

(ii) 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, transplantation, 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, habitat within the geographical area occupied by the species at the time it was listed must contain the physical and biological features that are essential to the conservation of a 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 primary constituent elements laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species).

Under the Act, we can designate an area outside the geographical area occupied by the species at the time of listing as critical habitat only when we determine that the best available scientific data demonstrate that the designation of that area is 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 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 designation of critical habitat may not include all of the habitat areas that we may eventually determine, based on scientific data not now available to the Service, 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 be required for recovery of the species.

Areas that support populations, but are outside the critical habitat designations, will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act. They 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 Federal 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 and biological features essential to the conservation of the species that may require special management considerations or protection to be the PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species. These 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, or 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 derived the specific PCEs required for Peninsular bighorn sheep from its biological needs as described below and in the proposed rule to revise critical habitat published in the **Federal Register** on October 10, 2007 (72 FR 57740). Additionally, information can be found in the final listing rule published in the **Federal Register** on March 18, 1998 (63 FR 13134), and in the original final critical habitat rule published in the **Federal Register** on February 1, 2001 (66 FR 8650).

#### *Space for Individual and Population Growth and Normal Behavior*

Peninsular bighorn sheep occur on moderately steep to very steep open slopes, canyons, and washes in hot and dry desert regions where the land is rough and rocky, and sparsely vegetated (February 1, 2001, 66 FR 8650). This DPS is primarily restricted to the east-facing lower elevation slopes (generally below 4,600 ft (1,400 m)) of the Peninsular Ranges along the northwestern edge of the Sonoran Desert (Jorgensen and Turner 1975, p. 51; DeForge *et al.* 1997, p. 11; Rubin *et al.* 1998, p. 541; Ernest *et al.* 2002, p. 76). A wide range of topography provides a diversity of habitats and plant communities across the mountainous slopes, canyons, washes, and alluvial fans within the home range of Peninsular bighorn sheep (Service 2000, p. 156). This diverse topography is necessary to provide shelter from the elements and predators, areas for rearing, areas used to meet thermal requirements, seasonal water and forage sources, and space for mating and movement of this DPS.

Diverse topographic features are especially important because of the extreme temperatures Peninsular bighorn sheep must cope with in this desert region. During hot weather, desert bighorn sheep seek shade under boulders and cliffs, or move to north-facing slopes (Merritt 1974, p. 14; Andrew 1994, p. 52). In the event of inclement weather they may seek protected caves or overhangs, move to sunny, south-facing slopes (Andrew

1994, p. 52), or move to slopes that are protected from strong winds. Desert bighorn sheep are frequently found on, and show a preference for slopes greater than 20 percent (Elenowitz 1983, p. 87; Andrew 1994, p. 53; Dunn 1996, p. 5; Andrew and Bleich 1999, p. 13), and our GIS data and occurrence records confirm this observation for Peninsular bighorn sheep. According to GIS data and occurrence records, Peninsular bighorn sheep largely utilize habitat with 20 to 60 percent slopes, broken by canyons and washes. Nighttime bedding areas are chosen carefully according to the topography of the habitat and may be considered a limiting factor in bighorn sheep distribution (Hansen 1980, p. 78). These bedding areas are usually located along ridges and spurs with long distance visibility where bighorn sheep can escape, if necessary, in a matter of seconds (Hansen 1980, p. 78).

Bighorn sheep primarily rely on their sense of sight to detect predators. They prefer the lower elevations of the Peninsular Ranges where the vegetation associations are less dense and provide better visibility than those at higher elevations. Research shows that bighorn sheep will avoid habitat where dense vegetation reduces visibility and instead prefer to use habitat with vegetative canopy cover less than or equal to 30 percent (Risenhoover and Bailey 1985, p. 799; Etchberger *et al.* 1989, p. 906; Dunn 1996, p. 1). Bighorn sheep in the Peninsular Ranges avoid higher elevations (above 4,600 ft (1,400 m)), likely due to decreased visibility (and therefore increased predation risk) associated with denser vegetation (*i.e.*, chaparral and conifer woodland) found at higher elevations (Service 2000, p. 10).

Along with occupying open habitat, bighorn sheep use steep, rugged terrain for predator evasion (Service 2000, p. 6). Bighorn sheep use their climbing abilities rather than speed to escape from predators, and mountainous slopes of greater than or equal to 60 percent (*i.e.*, escape habitat) are steep enough to provide this function (Andrew 1994, p. 57; Dunn 1996, p. 1; Service 2000, p. 6; McKinney *et al.* 2003, p. 1231).

Steep escape habitat is also used for lambing (Service 2000, p. 6). As parturition approaches, ewes seek isolated sites (escape terrain with slopes 60 percent or greater) with shelter and unobstructed views (Turner and Hansen 1980, p. 148), and seclude themselves from other females while finding sites to give birth (Geist 1971, p. 239; Etchberger and Krausman 1999, p. 358). Ewes usually give birth to one lamb born after an approximately 6-month gestation

period (Geist 1971, p. 239; Turner and Hansen 1980, p. 146). These areas of steep terrain are vital to Peninsular bighorn sheep because lambs have increased vulnerability to predation, and these protective slopes are rarely visited by predators (Geist 1971, p. 239). Ewe groups with lambs usually stay close to escape terrain while feeding on lower gradient slopes. Berger (1991, p. 72) reported that when feeding on bajadas or away from escape terrain, ewes and lambs were greater than three times more vulnerable to predation. Predators of Peninsular bighorn sheep include mountain lion, bobcat, coyote, and domestic dogs (Hayes *et al.* 2000, p. 954; February 1, 2001, 66 FR 8650).

#### *Metapopulation Structure*

Within desert mountain ranges like the Peninsular Ranges, bighorn sheep habitat is patchy, and the population structure is naturally fragmented (Bleich *et al.* 1990, p. 384). This fragmentation leads to the application of a broad landscape approach to their population ecology, grouping geographically distinct herds into metapopulations, which are networks of interacting ewe groups or subpopulations (Schwartz *et al.* 1986, pp. 182–183; Bleich *et al.* 1990, p. 386). This broad approach considers long-term viability not of individual subpopulations, but rather of entire metapopulations; thus, both genetic and demographic factors are considered. Decreasing population sizes can lead to decreasing levels of heterozygosity that may have negative demographic effects through inbreeding depression (Lande 1988, p. 1,456) and loss of adaptability. A small amount of genetic exchange among herds by movements of males can counteract inbreeding and associated increases in homozygosity that might otherwise develop within small, isolated populations (Schwartz *et al.* 1986, p. 185). Males have larger home ranges and a much greater tendency than females to explore new areas, which they may do in search of females during the mating season. Movement by males occurs readily if no insurmountable barriers exist and geographic distances between female groups within metapopulations are not extreme (greater than 31 mi 50 km (Witham and Smith 1979, p. 24)). If movement is precluded by human-constructed obstacles, populations will become isolated and the metapopulation structure dismantled.

A study of Peninsular bighorn sheep distribution and abundance by Rubin *et al.* (1998, p. 545) concludes that ewes exhibit a fragmented distribution within the Peninsular Ranges, making up at least eight ewe groups or

subpopulations. Although the distribution of these ewe groups could be considered naturally fragmented, construction and use of roads through bighorn sheep habitat may have increased fragmentation within the Peninsular Ranges because ewes avoid crossing highways (Rubin *et al.* 1998, p. 547). Ewes show strong gregarious and philopatric behavior (*i.e.*, faithful to natal home range), which limits their dispersal abilities (Boyce *et al.* 1999, p. 99; Service 2000, p. 10). Movement of ewes between ewe groups is infrequent, but direct observation and aerial-telemetry locations and genetic analysis reveal ram movement among at least six ewe groups (Boyce *et al.* 1999, p. 99; Rubin *et al.* 1998, pp. 543–544). Additionally, substructuring can occur within single herds (*i.e.*, ewe groups) of bighorn sheep (Festa-Bianchet 1986, pp. 327–330; Andrew *et al.* 1997, pp. 74–75; Rubin *et al.* 1998, pp. 543–548). Such substructuring is defined by separate home range patterns. Although demonstrated more with females, it can occur in both sexes.

Another important long-term process in metapopulation dynamics is the balance between rates of natural extinction and colonization among subpopulations. Colonization rates must exceed extinction rates for a metapopulation to persist (Hanski and Gilpin 1991, pp. 8–9). In past decades this balance has not occurred for Peninsular bighorn sheep due to fragmentation, disease, predation, and low recruitment (Rubin *et al.* 1998, pp. 545–547; Rubin *et al.* 2002, p. 803–805). The remaining fragmented subpopulations consist of small, isolated groups of bighorn sheep that are more vulnerable to extirpation due to random naturally occurring events, disease, or predation because of their small population size. Local extinction of small subpopulations can be prevented by occasional immigrants from neighboring subpopulations (*i.e.*, the rescue effect) (Brown and Kodric-Brown 1977, p. 445).

Because of the metapopulation structure of the Peninsular bighorn sheep population, it is important for genetic exchange and the conservation of the DPS to ensure space for movement and connectivity between ewe groups. Furthermore, maintaining connectivity within the metapopulation could help safeguard against local extinctions of the remaining subpopulations.

#### Food

A wide range of forage resources and vegetation associations are required by Peninsular bighorn sheep to meet

annual and drought-related variations in forage quality and availability (Hansen 1980, p. 76). Valley floors, rolling hills, and alluvial fans and washes with productive soils provide seasonal vegetation and water resources important to Peninsular bighorn sheep. In a mountainous environment like the Peninsular Ranges, temperature and soil moisture vary widely with slope and elevation. This causes seasonal variation in plant growth throughout this DPS' habitat. Peninsular bighorn sheep must have access to the seasonal abundance of plant life at various elevations to maximize resources and survive in the desert environment.

Berger (1991, p. 70) found that bighorn sheep adjust their feeding ranges to exploit more nutritive portions of their home ranges, such as within bajadas, early in the season when high-protein grasses emerge. Due to high energetic costs of pregnancy and lactation, ewes are especially dependent on areas with nutritious forage to increase success of rearing offspring (Service 2000, p. 8). Berbach (1987, p. 97) reports that, when ewes are confined to an enclosure and prevented from using all vegetation associations during late gestation and early lactation, they and their lambs die of malnutrition. During the reproductive season for Peninsular bighorn sheep, nutritious forages are typically concentrated on specific sites (*e.g.*, alluvial fans, bajadas, washes) where more productive, wetter soils support greater herbaceous growth than steeper, drier, rockier soils (Service 2000, p. 8). There is a tendency for plants that dry out during summer months on the mountain-sides to remain green longer (and thus more nutritious, higher in protein, and more easily digested) in the washes, because groundwater is generally closer to the surface and in greater quantity. Furthermore, the greater soil moisture supports a suite of nutritious plants that do not grow on the dry mountain sides. Therefore, washes and alluvial fans play an important role in providing desert bighorn sheep quality forage during the heat of summer months and through times of drought.

Scott (1986, p. 21) found that Peninsular bighorn sheep diets are dominated by shrub species (64 to 76 percent), with grasses and forbs species making up a smaller portion of the diet (19 to 30 percent and 2 to 6 percent, respectively). In the following section, plant nomenclature is updated to conform to treatments in Hickman (1993). Common names generally conform with those given in Hickman (1993) or Abrams (1993–1960). Cited scientific names are retained in brackets

for ease of reference. Foraging studies by Scott (1986, p. 21) and Cunningham (1982, p. 31) note that Peninsular bighorn sheep preferentially feed on different plants seasonally. Shrubs such as *Ambrosia dumosa* (burro bush), *Caesalpinia virgata* [*Hoffmannseggia microphylla*] (small-leaved Hoffmannseggia), *Hyptis emoryi* (desert lavender), *Sphaeralcea* spp. (globemallow), and *Simmondsia chinensis* (joboba) are primary food sources year round; grasses such as *Aristida adscensionis* (sixweeks threawn) and *Bromus rubens* (red brome) along with cacti *Opuntia* spp. (cholla) are primary food sources in the fall; forbs such as *Plantago* spp. (woolly plantain), *Plantago ovata* [*insularis*] var. *fastigiata* (woolly plantain), and *Ditaxis neomexicana* (common ditaxis) are primary food sources in the spring.

However, Peninsular bighorn sheep are generalist foragers, browsing on a wide variety of plant species depending on seasonal availability. Other plants reportedly consumed by Peninsular bighorn sheep include *Encelia farinosa* (brittlebush), *Parkinsonia* spp. (Palo verde), *Ephedra* spp. (Mormon tea), *Agave deserti* (desert agave), *Quercus* spp. (scrub oak), *Phoradendron californicum* (desert mistletoe), *Eriogonum fasciculatum* (California buckwheat), *Prunus fremontii* (desert apricot), *Acacia greggii* (catclaw), *Prosopis juliflora* (mesquite), *Krameria grayi* (ratany), and *Malosma laurina* (laurel-leaf sumac) (Browning and Monson 1980, p. 88).

#### Water

In the Peninsular Ranges, the presence of perennial water is known to be a limiting factor only during prolonged droughts or summers without significant thunderstorm activity (Service 2000, p. 156). Water sources are most valuable to bighorn sheep if they occur in proximity to escape terrain with good visibility (Service 2000, p. 9). However, according to historical Peninsular bighorn sheep occurrence data, sheep are known to travel at least 10 mi (16 km) from sources of perennial water (Service 2000, p. 156). According to Service biologists familiar with the DPS, bighorn sheep usually visit a water source every 2 to 3 days, but it is not unusual for them to drink more often. During hot summer months, desert bighorn sheep typically stay close to reliable sources of water and drink large quantities at each visit. Some research has suggested that desert bighorn sheep can survive without a permanent water source (Krausman *et al.* 1985), although this view is not widely accepted (Turner and Weaver 1980, p. 104). In desert

ranges like the Peninsular Ranges, rainwater can accumulate in natural collection tanks and potholes in the rock and provide seasonal or perennial water sources. Additionally, natural springs provide a reliable source of water for Peninsular bighorn sheep. Desert bighorn sheep also rely on consuming vegetation, including cacti, to meet water requirements when standing water sources are scarce (Turner and Weaver 1980, p. 102). Water sources contribute greatly to Peninsular bighorn sheep's ability to survive the hot and dry summer months.

#### Primary Constituent Elements for Peninsular Bighorn Sheep

Within the geographical area occupied by Peninsular bighorn sheep at the time of listing, we must identify the physical or biological features essential to the conservation of the DPS that may require special management considerations or protection. Based on the above needs and our current knowledge of the life-history, biology, and ecology of Peninsular bighorn sheep, we determined the Peninsular bighorn sheep PCEs are:

(1) Moderate to steep, open slopes (20 to 60 percent) and canyons, with canopy cover of 30 percent or less (below 4,600 ft (1,402 m) elevation in Peninsular Ranges) that provide space for sheltering, predator detection, rearing of young, foraging and watering, mating, and movement within and between ewe groups;

(2) Presence of a variety of forage plants, indicated by the presence of shrubs (*e.g.*, *Ambrosia* spp., *Caesalpinia* spp., *Hyptis* spp., *Sphaeralcea* spp., *Simmondsia* spp.), that provide a primary food source year round, grasses (*e.g.*, *Aristida* spp., *Bromus* spp.) and cacti (*e.g.*, *Opuntia* spp.) that provide a source of forage in the fall, and forbs (*e.g.*, *Plantago* spp., *Ditaxis* spp.) that provide a source of forage in the spring;

(3) Steep, rugged, slopes (60 percent slope or greater) (below 4,600 ft (1,402 m) elevation in Peninsular Ranges) that provide secluded space for lambing and terrain for predator evasion;

(4) Alluvial fans, washes, and valley bottoms that provide important foraging areas where nutritious and digestible plants can be more readily found during times of drought and lactation, and that provide and maintain habitat connectivity by serving as travel routes between and within ewe groups, adjacent mountain ranges, and important resource areas (*e.g.*, foraging areas and escape terrain); and

(5) Intermittent and permanent water sources that are available during

extended dry periods and provide relatively nutritious plants and drinking water.

This final revised critical habitat designation encompasses those areas containing the PCEs necessary to support one or more of the species' life history functions and laid out in the appropriate quantity and spatial arrangement essential to the conservation of the species. All units in this designation contain the PCEs and support multiple life processes. As stated in the "Criteria Used To Identify Critical Habitat" section of this rule, we believe that we can conserve Peninsular bighorn sheep within its extant range and are not including any areas outside of the geographical area occupied by the species.

#### Special Management Considerations or Protection

When designating critical habitat within the geographical area that is occupied at the time of listing, we identify the features that are essential to the conservation of the DPS and assess whether those features may require special management considerations or protection.

Peninsular bighorn sheep habitat and the features essential to their conservation are threatened by the direct and indirect effects of: development and expansion of urban areas; human disturbance related to recreation; construction of roadways and power lines; and mineral extraction and mining operations.

Habitat loss (especially in canyon bottoms), degradation, and fragmentation associated with the proliferation of residential and commercial development, roads and highways, water projects, and vehicular and pedestrian recreational uses threaten Peninsular bighorn sheep and its habitat throughout its range (March 18, 1998, 63 FR 13134). Cities that occur along the eastern boundary of proposed revised critical habitat, from the base of the San Jacinto and Santa Rosa Mountains to the Salton Sea area (Units 1 and 2A), continue to grow. Development adjacent to and within Peninsular bighorn sheep habitat affects the quality and quantity of lower elevation habitat and associated vegetation, alluvial fans, and water sources (PCEs 1, 2, 4, and 5). By 2000, at least 18,500 ac (7,490 ha) of suitable Peninsular bighorn sheep habitat had been lost to urbanization and agriculture along the urban interface between the cities of Palm Springs and La Quinta (Service 2000, p. 38). Much of the lost habitat consisted of low-elevation alluvial fans and washes that provided

important sources of nutrients to ewes when they were rearing their lambs (PCE 2 and 4) (February 1, 2001, 66 FR 8650). Moreover, in the northern Santa Rosa Mountains, from 1991 to 1996, 34 percent of Peninsular bighorn sheep adult mortalities were directly caused by urbanization (February 1, 2001, 66 FR 8650); five were killed by cars; five died from feeding on toxic, nonnative ornamental plants; and one was strangled in a wire fence (DeForge and Ostermann 1997, p. 1).

Continued urban and commercial development within the range of Peninsular bighorn sheep could fragment the metapopulation into isolated groups too small to maintain long-term viability. Maintenance of genetic diversity allows small ewe groups like those in the Peninsular Ranges to persist. The inability of rams and occasional ewes to move between groups erodes the genetic fitness of isolated groups (PCE 1 and 4) (March 18, 1998, 63 FR 13134). Special management considerations or protection may be needed to maintain the physical and biological features essential to the conservation of the Peninsular bighorn sheep and alleviate the effects of development on Peninsular bighorn sheep habitat, especially lower elevation habitat, alluvial fans, and areas of ewe group connectivity near urban areas. This management or protection could be accomplished by controlling the expansion of urban, industrial, and agricultural development into these areas.

In the Peninsular Ranges (Units 1, 2 and 3), increased human activity and disturbance adjacent to, and within Peninsular bighorn sheep habitat may threaten bighorn sheep by altering their normal behavior. This altered behavior can lead to bighorn sheep abandoning their habitat and preventing use of preferred habitat, including lambing areas, water sources, and foraging areas, and cause negative physiological effects (PCE 1, 2, 3, 4, and 5) (February 1, 2001, 66 FR 8650; March 18, 1998, 63 FR 13134). A variety of human activities (*e.g.*, hiking, mountain biking, horseback riding, camping, hunting, livestock grazing, use of aircraft and off-road vehicles) have the potential to disrupt normal bighorn sheep social behaviors. Special management considerations or protection of the physical and biological features essential to the conservation of the DPS may be needed to alleviate the effects of human activity and disturbance to Peninsular bighorn sheep and ensure that the essential features remain available for use by Peninsular bighorn

sheep. Restricting human use of trail systems and natural areas during lambing season, re-routing trails, and establishing exclusionary fencing around urban areas may reduce human effects on Peninsular bighorn sheep behavior.

Roads and highways may permanently fragment bighorn sheep habitat or impede the movement of bighorns across the landscape, thus isolating subpopulations and disrupting the metapopulation structure of the DPS. Two major highways run through the Peninsular Ranges and fragment bighorn sheep habitat. In the northern portion of the Peninsular Ranges, State Route 74 runs through the Santa Rosa Mountains (Unit 2A). Further south, State Route 78 cuts through habitat between the San Ysidro Mountains and Pinyon Mountains (Unit 2B). These roadways have degraded habitat and generally impeded the movement of Peninsular bighorn sheep (especially ewes) between ewe groups in the surrounding areas (PCE 1, 2, 3, 4, and 5) (Rubin *et al.* 1998, p. 547), which can erode the genetic fitness of isolated groups (March 18, 1998, 63 FR 13134). However, some movement has been documented across State Route 74 (Service 2004, pp. 1–2).

Epps *et al.* (2005, p. 1035) showed that genetic diversity of desert bighorn sheep populations was negatively correlated with the presence of human-made barriers (in this case fenced highways), and suggested that anthropogenic barriers constitute a severe threat to the persistence of naturally fragmented populations (such as Peninsular bighorn sheep). Additionally, roads and highways represent an unnatural source of mortality. Collisions with automobiles can be a significant cause of Peninsular bighorn sheep mortality within portions of the DPS range (DeForge and Ostermann 1997, p. 1). Future construction of roadways should be avoided in critical habitat, and if unavoidable, should be constructed to minimize habitat effects and allow continued connectivity among ewe groups.

Degradation and fragmentation of bighorn sheep habitat may occur during the construction phase of power lines and their associated structures. Currently, a large power line (Sunrise Powerlink) is approved for construction through Peninsular bighorn sheep critical habitat. Special management considerations and protection of the physical and biological features essential to the conservation of the DPS will be implemented to alleviate the effects of power line structures and their

construction on Peninsular bighorn sheep and their habitat. Future construction of major infrastructure, such as power lines, should be avoided in critical habitat, and if unavoidable, should be constructed to minimize habitat effects and allow continued connectivity among ewe groups.

Mining operations occur within southern portions of Peninsular bighorn sheep habitat in Units 2B and 3. Mining activities and associated facilities negatively impact Peninsular bighorn sheep by causing the loss of vegetation structure required for foraging activities and destroying habitats used for escape, bedding, lambing, or connectivity between ranges (PCE 1, 2, 3, 4, and 5). Disturbance could modify the sheep's behavior or cause bighorn sheep to flee an area. Special management considerations or protection of the physical and biological features essential to the conservation of the DPS may be needed to alleviate the effects of mining operations on Peninsular bighorn sheep habitat. Further mining operations should avoid (to the maximum extent possible) areas identified as meeting the definition of critical habitat for Peninsular bighorn sheep.

#### **Criteria Used To Identify Critical Habitat**

As required by section 4(b)(2) of the Act, we use the best scientific data available in determining within the geographical area occupied at the time of listing the specific areas on which are found the features essential to the conservation of the DPS which may require special management considerations or protection, as well as in determining if any specific areas outside the geographical area occupied by the DPS are essential for the conservation of the DPS. We only designate areas outside the geographical area occupied by a species when a designation limited to its present range would be inadequate to ensure the conservation of the species (50 CFR 424.12(e)). We are designating critical habitat for the Peninsular bighorn sheep within areas that we determined were occupied at the time of listing and that contain the physical and biological features essential to the conservation of the DPS. Lands are designated based on sufficient essential features being present to support the life processes.

Based on the criteria used to identify critical habitat for the Peninsular bighorn sheep, we believe those areas designated as critical habitat within the geographical area occupied by the DPS at the time of listing are sufficient to conserve Peninsular bighorn sheep. The

most recent estimate from 2006 puts the population at approximately 800 individuals (Torres 2007, p. 1). Delisting criterion 2 in the Recovery Plan for this DPS states that the rangewide population must average 750 individuals (adults and yearlings) with a stable or increasing population trend over 12 consecutive years (Service 2000, p. 66). The occupied areas identified as containing the features essential to the conservation of the DPS in this designation accurately represent the areas inhabited by the current population which is at a size approaching recovery levels. We believe that conservation of Peninsular bighorn sheep would be achieved if threats to this DPS, as described in the "Special Management Considerations or Protection" section of this rule, were reduced or removed due to management and protection of areas delineated as critical habitat in this rule. Although the current population trend is promising, it should be noted that the time horizon for the delisting criterion mentioned above has not been met and other downlisting and delisting criteria described in the Recovery Plan (such as the minimum number of ewes (25) present in each recovery region for six consecutive years) are yet to be achieved.

For areas outside the geographical area occupied by the DPS at the time of listing, there are no data on file to suggest any such areas are essential for the conservation of the DPS. We recognize this finding is different than what is outlined as essential habitat in the 2000 Recovery Plan and what was designated as critical habitat in the 2001 designation (which largely adopted the boundary delineated in the Recovery Plan). The Recovery Plan and 2001 critical habitat rule note that allowing for ram movement between ewe groups is important for maintaining genetic variation in the Peninsular bighorn sheep metapopulation, and alluvial fans can provide important resources for sheep. While we believe connectivity areas and additional low-elevation areas (alluvial-fan habitat) are important for the Peninsular bighorn sheep's recovery, we have significantly more data available today than when the Recovery Plan and 2001 critical habitat were finalized. We have utilized the currently available data to more precisely identify areas meeting the definition of critical habitat; in particular, areas related to connectivity and low-elevation habitat. Such areas are included in this designation where the data support the determination that such areas contain the physical and biological features

essential to the conservation of the DPS. For other potential connectivity and low-elevation areas that were included in the 2001 designation, the available movement and occurrence data we have for those areas do not support the identification of specific areas that provide a movement corridor, or a determination that the broad expanse of low-elevation areas with no evidence of current or historical sheep use are essential for the conservation of the DPS.

We believe it is important to note that critical habitat designation is a different process than development of a recovery plan. A critical habitat designation is a specific regulatory action that defines specific areas as critical habitat in accordance with the statutory definition. A recovery plan is a guidance document developed in cooperation with partners, which provides a roadmap with detailed site-specific management actions to help conserve listed species and their ecosystems. The term "essential," as used in the recovery plan, is not necessarily used in the same manner as it is used in the definition of critical habitat. The recovery plan provides important information about the species and the actions that are needed to bring about its recovery, while critical habitat identifies specific areas that are essential for the species' conservation.

The deviation from the Recovery Plan boundary and the 2001 final critical habitat designation is primarily the result of using a revised methodology to delineate critical habitat. Our revised methodology incorporates new information to best identify areas that meet the definition of critical habitat (see "Summary of Changes From the 2001 Critical Habitat Designation To the 2007 Proposed Rule To Revise Critical Habitat" section for more discussion). As a result, the final revised critical habitat boundary does not include areas the Recovery Plan identified as necessary for the conservation of the Peninsular bighorn sheep that we since determined (based on the best available data at this time) are not essential for the conservation of this DPS. Therefore, we believe the final revised critical habitat boundary more precisely maps the physical and biological features that occur within the geographical area occupied by the Peninsular bighorn sheep at the time of listing, which includes those areas containing preferred habitat for sheep use.

There are likely additional areas outside of the final revised critical habitat boundary that contain some of the PCEs, including areas identified in the Recovery Plan and 2001 critical

habitat. We recognize that areas outside of the critical habitat boundary are likely utilized by Peninsular bighorn sheep (primarily for movement of rams between ewe groups). However, as stated above, the data available at this time do not support the identification of specific areas containing the essential features that provide a movement corridor between Units 1 and 2A or between Units 2B and 3. Additionally, Unit 2A is continuous with Unit 2B and these units contain a large contiguous portion of the Peninsular Ranges allowing for movement between six ewe groups with these units. Furthermore, although we do not have information to identify specific movement corridors, the areas between Units 1 and 2A or between Units 2B and 3 are steep, rugged, and remote and there are no perceived threats in these areas. Therefore, we are confident that these areas will still be available for any natural sheep movements between units allowing for genetic connectivity. We also recognize that some areas below 20 percent slope (low-elevation areas such as alluvial fans, washes, and valley bottoms) may be used by sheep; however, available data do not support a determination that the broad expanse of low-elevation areas with no evidence of current or historical sheep use are essential for the conservation of the DPS (low-elevation areas on which are found features essential to the conservation of the DPS are included in this designation). Areas outside the final revised critical habitat designation will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and regulatory protections afforded by the section 7(a)(2) jeopardy standard and the prohibitions of section 9 of the Act if actions occurring in these areas may affect sheep; these protections and conservation tools will continue to contribute to recovery of the DPS.

We utilize the best scientific and commercial data available to develop criteria that (at this point in time) identifies the PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the DPS. The PCEs incorporate those features needed by the Peninsular bighorn sheep as outlined in the Recovery Plan, including (1) Open slopes and canyons with minimal canopy cover; (2) presence of forage plants; (3) steep, rugged slopes; (4) foraging areas within alluvial fans, washes, and valley bottoms; and (5) intermittent and permanent water sources.

We used the following data to delineate critical habitat: (1) Areas that

contain the PCEs required by the DPS as determined from aerial imagery and Geographic Information System (GIS) data on vegetation, elevation, and slope; (2) areas within the ewe group distribution (i.e., subpopulations) boundaries identified by Rubin *et al.* (1998); (3) areas with occupancy data indicating they are currently occupied or areas with occupancy data indicating they were occupied at some point between 1988 (i.e., the time of listing (1998) less 10 years, which is the average lifespan of Peninsular bighorn sheep) and 2008 (present time); and (4) areas where occupancy data points indicate repeated Peninsular bighorn sheep use, but which were not captured within the ewe group distribution boundaries identified by Rubin *et al.* (1998). Additionally, we gathered information from our files, staff biologists, the California Department of Fish and Game, the Bighorn Institute, known bighorn sheep experts, and the public. Our revision to critical habitat is designed to capture ewe groups; lambing areas; foraging areas, including alluvial fans; water sources; and areas used for natural sheep movements.

To determine the criteria used to identify critical habitat in this critical habitat designation, we identified areas we believe contain the PCEs essential to the conservation of Peninsular bighorn sheep and coupled this information with Peninsular bighorn sheep ewe group distribution and occurrence data that have been available since the time of listing. We believe this is the most appropriate way to accurately delineate the areas containing the PCEs laid out in the appropriate quantity and spatial arrangement essential to the conservation of the DPS. The broad-based methodology used to delineate critical habitat in the 2001 critical habitat rule (and 2000 Recovery Plan) included large expanses (hundreds of thousands of acres) of habitat (including very general connectivity areas and low-elevation habitat) which were determined to be essential at that time. However, upon reevaluation of the data available at that time, data obtained since, and our revised methodology for delineating critical habitat, we find that areas were included in the 2001 designation that do not meet the definition of critical habitat. Given the more detailed nature of the currently available scientific information, it is not appropriate to continue to use the broad-based methodology used in the 2001 designation. Incorporating the available updated occupancy data allowed us to examine sheep use during a period documented to exhibit large

fluctuations in the DPS population levels. As a result, we identified those areas that exhibit substantial sheep activity at a broad spatial distribution. In other words, the availability of sheep occurrence data provided us the opportunity to use this information as a proxy to better define and capture in the final revised critical habitat boundary those areas containing the physical and biological features essential to the conservation of the Peninsular bighorn sheep.

We delineated critical habitat boundaries using the following steps:

(1) We mapped areas that contain the PCEs required by the DPS as determined from aerial imagery and Geographic Information System (GIS) data on vegetation, elevation, and slope, and delineated our revised units to ensure that they capture the PCEs. Where appropriate, we expanded the boundaries to capture the extent of an alluvial fan or water source (PCE 4 or 5, respectively). We also removed areas that we determined do not contain PCEs or otherwise do not contain suitable Peninsular bighorn sheep habitat, such as areas above 4,600 ft (1,400 m) elevation (PCE 1), areas containing conifer woodland with canopy cover greater than 30 percent (PCE 1), and slopes less than 20 percent (PCE 1), unless those areas overlapped specifically with Rubin *et al.*'s (1998, pp. 539–561) ewe group distributions and had documented use by Peninsular bighorn sheep as evidenced by occurrence data, as further described in the following steps.

(2) We mapped ewe group areas from Rubin *et al.* (1998) over GIS imagery of the Peninsular Ranges to delineate the distribution of ewe groups in the proposed revised critical habitat. We consider Rubin *et al.* (1998) to be the best available data on Peninsular bighorn sheep ewe group distribution. The ewe group delineations presented in Rubin *et al.* (1998) were based on data collected during 1993 to 1996, when the population of Peninsular bighorn sheep was at historically low levels. Therefore, the ewe group delineations present a minimum distribution of bighorn sheep in the Peninsular Ranges. This is the only data we are aware of that identifies the distribution of ewe groups and subgroups within the Peninsular Ranges. Furthermore, we believe that the ewe groups presented in Rubin *et al.* (1998) accurately depict the general locations of the known ewe groups in these ranges, providing a logical proxy to help identify those areas containing the physical and biological features

essential to the conservation of the Peninsular bighorn sheep.

(3) We compared the ewe group delineation from Rubin *et al.* (1998, pp. 539–561) with all occupancy data collected since 1988 on GIS imagery maps to: (1) Ensure that Rubin *et al.* (1998, pp. 539–561) accurately represents the boundaries of the ewe groups at larger population levels; (2) capture possible ram movement; and (3) capture other areas used by bighorn sheep in recent years. Subsequently, we expanded the delineated ewe group areas to include areas where occupancy data points indicate repeated Peninsular bighorn sheep use and sheep movements (pre- and post-Rubin *et al.* 1998, pp. 539–561), and to include areas that contain the PCEs for Peninsular bighorn sheep. We delineated the critical habitat boundaries at these locations to capture the majority of occurrence points while still following the boundaries of the PCEs, such as elevations below 4,600 ft (1,400 m) (PCE 1), areas with 30 percent canopy cover or less (PCE 1), escape terrain (PCE 3), slopes of 20 percent or greater (PCE 1), alluvial fans (PCE 4), washes (PCE 4), and water sources (PCE 5) immediately adjacent to the identified ewe groups. When it was not possible to follow boundaries of the PCEs, we delineated the border around occurrence points to follow natural breaks in the terrain such as ridgelines, canyon bottoms, and toe of slope.

Specifically, we expanded the area representing the northernmost ewe group delineation (*i.e.*, San Jacinto Mountains) to include the area north of Chino Canyon where (1) We have evidence of recent ewe and ram movements; and (2) the Bighorn Institute has released, and continues to release, captive-born sheep to help recover this DPS. We also expanded the area representing the southernmost ewe group delineation (*i.e.*, Carizzo Canyon area) to the southeast to capture water sources (PCE 5), including habitat near the Interstate 8 island southwest of Ocotillo, California, south towards the U.S.-Mexico border where there are consistent, recent sightings of uncollared Peninsular bighorn sheep. Finally, we expanded ewe group delineations to include areas of occupied habitat between the ewe groups in the Santa Rosa Mountains continuing south along the Peninsular Ranges to the Vallecito Mountains ewe group. Documented Peninsular bighorn sheep use of these intervening habitat areas is consistent with the Rubin *et al.* (1998, pp. 539–561) demographic study, which indicated possible connectivity between ewe groups through this area.

(4) We examined all pre-listing occurrence data in our files to determine if our revised critical habitat missed any areas of historical repeated Peninsular bighorn sheep use. As a result, we identified an area of historical repeated use that was occupied at the time of listing between two ewe subgroups documented in Rubin *et al.* (1998, pp. 539–561) as (1) Santa Rosa Mountains east of State Route 74 (Martinez Canyon); and (2) Santa Rosa Mountains east of State Route 74 (south)). Documented Peninsular bighorn sheep use of these intervening habitat areas is consistent with the Rubin *et al.* (1998, pp. 539–561) demographic study, which indicated possible connectivity between these subgroups through this area. This area is important in light of genetic findings by Boyce *et al.* (1999, pp. 99–106) that indicate ewe groups within these ranges maintain genetic connectivity, probably through male-mediated nuclear gene flow. Based on the importance of this area for connectivity between subgroups, we expanded the critical habitat boundaries to include areas where occupancy data points indicate historically occupied habitat. Since the number of occurrence data points in historically occupied areas is relatively small, likely due to minimal survey effort in those remote areas, we delineated the unit boundaries in these areas to follow the boundaries of the PCEs, such as elevations below 4,600 ft (1,400 m) (PCE 1), areas with 30 percent canopy cover or less (PCE 1), escape terrain (PCE 3), alluvial fans (PCE 4), washes (PCE 4), and water sources (PCE 5) immediately adjacent to the identified ewe groups.

When determining the critical habitat boundaries within this final revised rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, mining pits, and other structures because such lands lack essential features for the Peninsular bighorn sheep. 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 structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this final revised critical habitat are 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 destruction or adverse modification unless the specific action may affect adjacent critical habitat.

**Final Critical Habitat Designation**

We are designating approximately 376,938 ac (152,542 ha) of critical habitat for Peninsular bighorn sheep in four units that were proposed as revised critical habitat. Table 2 provides the

approximate area determined to meet the definition of critical habitat for Peninsular bighorn sheep in the 2007 proposed rule, areas added to the proposed rule announced in the NOA published in the **Federal Register** on August 26, 2008, areas excluded from

the final revised critical habitat designation under section 4(b)(2) of the Act (please see “Exclusions Under Section 4(b)(2) of the Act” for a detailed discussion), and areas being designated as final revised critical habitat.

**TABLE 2—CRITICAL HABITAT UNITS FOR PENINSULAR BIGHORN SHEEP IN RIVERSIDE, SAN DIEGO, AND IMPERIAL COUNTIES, CALIFORNIA; LAND OWNERSHIP AND EVOLUTION OF FINAL SIZE IN ACRES (HECTARES)**

[Area estimates reflect all land within proposed critical habitat unit boundaries]

| Critical habitat unit                          | Land ownership             | 2007 Proposed critical habitat (72 FR 57740) <sup>10</sup> | 2008 NOA changes to proposed critical habitat (73 FR 50498) <sup>11</sup> | Areas excluded under section 4(b)(2) of the Act | Final critical habitat |
|--|----------------------------|--|---|---|------------------------|
| 1. San Jacinto Mts. ....                       | Tribal <sup>1</sup> .....  | 4,323 (1,749)  | 0 .....   | 4,323 (1,749)                                   | 0 .....                |
|  | BLM <sup>2</sup> .....     | 3,135 (1,269)  | 0 .....   | 0 .....   | 3,135 (1,269)          |
|  | USFS <sup>3</sup> .....    | 1,237 (501)  | -66 (27)  | 0 .....   | 1,171 (474)            |
|  | State <sup>4</sup> .....   | 276 (112)  | 0 .....   | 276 (112)                                       | 0 .....                |
|  | Private <sup>5</sup> ..... | 6,302 (2,322)  | 0 .....   | 6,011 (2,433)                                   | 291 (118)              |
| Subtotal .....                                 |                            | 15,273 (6,181)   | -66 (27)  | 10,610 (4,294)                                  | 4,597 (1,860)          |
| 2A. N. Santa Rosa Mts. ....                    | Tribal <sup>1</sup> .....  | 467 (189)  | 0 .....   | 467 (189)                                       | 0 .....                |
|  | BLM .....                  | 44,485 (18,003)  | 613 (248)   | 0 .....   | 45,098 (18,251)        |
|  | State <sup>6</sup> .....   | 17,547 (7,101)   | 1,490 (603)   | 19,037 (7,704)                                  | 0 .....                |
|  | Private <sup>5</sup> ..... | 12,499 (5,058)   | 938 (380)   | 13,435 (5,437)                                  | 2 (1)                  |
| Subtotal .....                                 |                            | 74,998 (30,350)  | 3,041 (1,231)   | 32,939 (13,330)                                 | 45,100 (18,251)        |
| 2B. S. Santa Rosa Mts. south to Vallecito Mts. | BLM .....                  | 16,266 (6,583)   | 0 .....   | 0 .....   | 16,266 (6,583)         |
|  | State <sup>7</sup> .....   | 197,509 (79,929)   | 19,697 (7,971);<br>-97 (39)   | 0 .....   | 217,206 (87,901)       |
|  | Private .....              | 12,436 (5,033)   | 2,113 (855)   | 0 .....   | 14,549 (5,888)         |
| Subtotal .....                                 |                            | 226,211 (91,545)   | 21,810 (8,826)  | 0 .....   | 248,021 (100,371)      |
| 3. Carrizo Canyon .....                        | BLM .....                  | 27,762 (11,235)  | 9,985 (4,041)   | 0 .....   | 37,747 (15,276)        |
|  | State <sup>8</sup> .....   | 35,475 (14,356)  | 58 (23)   | 0 .....   | 35,533 (14,380)        |
|  | Private .....              | 4,177 (1,690)  | 1,249 (505)   | 0 .....   | 5,426 (2,196)          |
|  | Local <sup>9</sup> .....   | 514 (208)  | 0 .....   | 0 .....   | 514 (208)              |
| Subtotal .....                                 |                            | 67,928 (27,489)  | 11,292 (4,570)  | 0 .....   | 79,220 (32,059)        |
| Total .....                                    |                            | 384,410 (155,564)  | 36,077 (14,600)   | 43,549 (17,624)                                 | 376,938 (152,542)      |

<sup>1</sup> Tribal = Agua Caliente Band of Cahuilla Indians Reservation and tribal lands.

<sup>2</sup> BLM = Bureau of Land Management.

<sup>3</sup> USFS = United States Forest Service.

<sup>4</sup> State = Coachella Valley Mountains Conservancy (CVMC), California Department of Fish and Game (CDFG) and California State Lands Commission (CSLC).

<sup>5</sup> Private = Private or Coachella Valley MSHCP permittee.

<sup>6</sup> State = University of California Natural Reserve System, CVMC, Wildlife Conservation Board, and State unpermitted.

<sup>7</sup> State = CDFG, CSLC, and California Department of Parks and Recreation (CDPR).

<sup>8</sup> State = CDPR.

<sup>9</sup> Local = City/County Park.

<sup>10</sup> Proposed critical habitat acreages for ownership types reported in this column do not match those reported in the October 10, 2007, proposed rule (72 FR 57740) because they are revised to reflect updated ownership information obtained since the proposed rule published.

<sup>11</sup> Minus (-) symbols in this column indicate areas removed from proposed revised critical habitat.

Below, we present brief descriptions of the units designated as critical habitat for Peninsular bighorn sheep. For more information about the areas excluded from critical habitat, please see the “Exclusions Under Section 4(b)(2) of the Act” section of this final rule.

*Unit 1: San Jacinto Mountains*

Unit 1 consists of approximately 4,597 ac (1,860 ha) in the San Jacinto

Mountains, Riverside County. Unit 1 is generally located within an area bounded on the east by the city of Palm Springs, bounded on the north by Windy Point and Snow Canyon, and extends south to the northern Palm Canyon area. Land ownership within the unit includes approximately 3,135 ac (1,269 ha) of BLM land; 1,171 ac (474 ha) of USFS land; and 291 ac (118 ha)

of Desert Water Authority (DWA) land (Table 2).

Unit 1 begins at a low-elevation of about 450 ft (137 m) on the eastern slope and rises to about 4,600 ft (1,400 m) to the west. It is the northernmost unit of revised critical habitat for Peninsular bighorn sheep. This unit was occupied at the time of listing and is currently occupied. Unit 1 contains the physical and biological features essential to the

conservation of Peninsular bighorn sheep including a range of vegetation types (PCE 2), foraging and watering areas including alluvial fans (PCE 4 and 5), and steep rocky terrain with elevations and slopes that provide for sheltering, lambing, mating, movement among and between ewe groups (PCE 1), and predator evasion (PCE 3).

The physical and biological features essential to the conservation of Peninsular bighorn sheep in Unit 1 may require special management considerations or protection to ameliorate the threats of urban and industrial development (particularly in lower elevation areas) due to the proximity of this unit to the Palm Springs area, and to decrease the direct and indirect effects of human disturbance to Peninsular bighorn sheep and its habitat. Please see the "Special Management Considerations or Protection" section of this final rule for a detailed discussion of the threats to Peninsular bighorn sheep habitat and potential management considerations.

We excluded approximately 4,323 ac (1,749 ha) of tribal land that meets the definition of critical habitat for Peninsular bighorn sheep from the final revised designation. We believe the designation of critical habitat would adversely impact our working relationship with the Tribe, and that Federal regulation through critical habitat designation would be viewed as an unwarranted and unwanted intrusion into tribal natural resource programs. Furthermore, the approximately 4,323 ac (1,749 ha) of tribal land within critical habitat are currently managed in a manner that provides conservation benefits to Peninsular bighorn sheep through implementation of a Tribal Council-approved management plan currently being implemented (2001 Tribal Conservation Strategy; MBA, 2001). The Tribe is also implementing a number of smaller scale habitat- and activity-specific plans that provide some benefit to Peninsular bighorn sheep: Indian Canyons Master Plan, 2002; Tahquitz Canyon Wetland Conservation Plan, 2000; Trail Plan, 2000; and the draft Tribal Fire Management Plan. Furthermore, the 4,323 ac (1,749 ha) of tribal land are within the plan area of the 2007 draft Tribal HCP (Helix Environmental Planning, 2007) that will incorporate additional conservation measures once finalized. See the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final rule for a detailed discussion of the tribal management plans.

We also excluded lands within the plan area for the Coachella Valley

MSHCP from Unit 1. In both the 2007 proposed revised rule and NOA published in the **Federal Register** on August 26, 2008, we stated we would consider the possible exclusion of approximately 6,287 ac (2,544 ha) of private land and Coachella Valley MSHCP permittee-owned land from the final critical habitat designation in Unit 1. We are excluding these areas from this final revised designation based on partnerships developed during the development of the Coachella Valley MSHCP that was finalized on October 1, 2008 (see the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section for a detailed discussion).

#### *Unit 2A: North Santa Rosa Mountains*

Unit 2A consists of approximately 45,100 ac (18,251 ha) in the northern Santa Rosa Mountains, Riverside County. Unit 2A is generally located on the east-facing slopes of the northern Santa Rosa Mountains, and extends from near the City of Rancho Mirage in the north to Martinez Canyon in the south, limited to the east by the communities of the northern Coachella Valley. Land ownership within the unit includes approximately 45,098 ac (18,251 ha) of BLM land and 2 ac (1 ha) of DWA land (Table 2).

Unit 2A begins at a low-elevation of about 50 ft (15 m) on the eastern slope and rises to about 4,600 ft (1,400 m) to the west. This unit was occupied at the time of listing and remains occupied. Unit 2A contains the physical and biological features that are essential to the conservation of the Peninsular bighorn sheep including a range of vegetation types (PCE 2), foraging and watering areas including alluvial fans (PCE 4 and 5), and steep to very steep, rocky terrain with elevations and slopes that provide for sheltering, lambing, mating, movement among and between ewe groups (PCE 1), and predator evasion (PCE 3).

The physical and biological features essential to the conservation of Peninsular bighorn sheep in Unit 2A may require special management considerations or protection to ameliorate the threats of urban, industrial, and agricultural development, and to decrease the direct and indirect effects of human disturbance to Peninsular bighorn sheep and its habitat, due to the proximity of this unit to the highly developed northern Coachella Valley. In particular, the essential features in this unit may require special management considerations or protection to alleviate threats to Peninsular bighorn sheep and its habitat associated with roadways,

such as State Route 74 that cuts through the midsection of this unit and may impede movement between ewe groups. Please see the "Special Management Considerations or Protection" section of this final rule for a detailed discussion of the threats to Peninsular bighorn sheep habitat and potential management considerations.

We excluded approximately 467 ac (189 ha) of Agua Caliente Band of Cahuilla Indians tribal lands meeting the definition of critical habitat for Peninsular bighorn sheep from the final revised designation. As stated above under the description of Unit 1, the designation of critical habitat would likely adversely impact our working relationship with the Tribe, and we believe that Federal regulation through critical habitat designation would be viewed as an unwarranted and unwanted intrusion into tribal natural resource programs. Furthermore, these approximately 467 ac (189 ha) of tribal land within critical habitat are currently managed in a manner that provides conservation benefits to Peninsular bighorn sheep through implementation of a Tribal Council-approved management plan currently being implemented (2001 Tribal Conservation Strategy; MBA, 2001). The 467 ac (189 ha) of tribal land are within the plan area of the 2007 draft Tribal HCP (Helix Environmental Planning, 2007) that will incorporate additional conservation measures once finalized. See the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section of this final revised rule for a detailed discussion of the tribal management plans.

We also excluded lands within the plan area for the Coachella Valley MSHCP from Unit 2A. In the 2007 proposed revised rule and the NOA published in the **Federal Register** on August 26, 2008, we stated we would consider the possible exclusion of approximately 32,472 ac (13,141 ha) of private land and Coachella Valley MSHCP permittee-owned land from the final critical habitat designation in Unit 2A. We are excluding these areas from this final revised designation based on partnerships developed during the development of the Coachella Valley MSHCP that was finalized on October 1, 2008 (see the "Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships" section for a detailed discussion).

#### *Unit 2B: South Santa Rosa Mountains South to Vallecito Mountains*

Unit 2B consists of approximately 248,021 ac (100,371 ha) in the southern Santa Rosa Mountains, Coyote Canyon,



San Ysidro Mountains, Pinyon Mountains, and Vallecito Mountains, in Riverside, San Diego, and Imperial Counties. Unit 2B is generally located on the east-facing slopes of the above ranges, loosely bounded on the east by the Coachella Valley floor, and extends from the southern Santa Rosa Mountains in the north to the Fish Creek Mountains in the south. Land ownership within the unit includes approximately 16,266 ac (6,583 ha) of BLM land; 217,206 ac (87,901 ha) of land owned by the State of California (including portions of Anza-Borrego Desert State Park); and 14,549 ac (5,888 ha) of private land (Table 2).

Unit 2B begins at a low-elevation of about 150 ft (45 m) on the eastern slope and rises to about 4,600 ft (1,400 m) to the west. This unit was occupied at the time of listing and remains occupied. This unit contains the physical and biological features that are essential to the conservation of Peninsular bighorn sheep including a range of vegetation types (PCE 2), foraging and watering areas including alluvial fans (PCE 4 and 5), and steep to very steep, rocky terrain with elevations and slopes that provide for sheltering, lambing, mating, movement among and between ewe groups (PCE 1), and predator evasion (PCE 3).

The physical and biological features essential to the conservation of Peninsular bighorn sheep in Unit 2B may require special management considerations or protection to: (1) Ameliorate threats of urban, industrial, and agricultural development due to the proximity of this unit to the Coachella Valley, especially the lower elevation areas in the northeastern portions of this unit; (2) decrease the direct and indirect effects of human disturbance to Peninsular bighorn sheep and its habitat due to recreational activity, since most of this unit includes lands within Anza-Borrego Desert State Park, which is open to recreational activities; (3) alleviate threats to Peninsular bighorn sheep and its habitat associated with State Route 78, which cuts through the southern portion of this unit and may impede movement between ewe groups; and (4) alleviate threats to Peninsular bighorn sheep and its habitat associated with mining operations at Fish Canyon Quarry and various mining claims in the unit. Please see the "Special Management Considerations or Protection" section of this final rule for a detailed discussion of the threats to Peninsular bighorn sheep habitat and potential management considerations.

### Unit 3: Carrizo Canyon

Unit 3 consists of approximately 79,220 ac (32,059 ha) in the Carrizo Canyon area of San Diego and Imperial Counties, extending south to the U.S.-Mexico border. Unit 3 is generally located in Carrizo Canyon and the surrounding In-Ko-Pah Mountains, Jacumba Mountains, Coyote Mountains, and Tierra Blanca Mountains; it is loosely bounded on the north, east, and west by the Coachella Valley floor. Land ownership within the unit includes approximately 37,747 ac (15,276 ha) of BLM land; 35,533 ac (14,380 ha) of land owned by the State of California (including portions of Anza-Borrego Desert State Park); 5,426 ac (2,196 ha) of private land; and 514 ac (208 ha) of local park land (Table 2).

Unit 3 begins at a low-elevation of about 400 ft (122 m) on the eastern slope and rises to about 4,600 ft (1,400 m) to the west. This unit was occupied at the time of listing and is currently occupied. This unit contains the physical and biological features that are essential to the conservation of Peninsular bighorn sheep including a range of vegetation types (PCE 2), foraging and watering areas including alluvial fans (PCE 4 and 5), and steep to very steep, rocky terrain with elevations and slopes that provide for sheltering, lambing, mating, movement among and between ewe groups (PCE 1), and predator evasion (PCE 3).

The physical and biological features essential to the conservation of Peninsular bighorn sheep in Unit 3 may require special management considerations or protection to: (1) Decrease the direct and indirect effects of human disturbance to Peninsular bighorn sheep and its habitat due to recreational activity, since most of this unit includes lands within Anza-Borrego Desert State Park, which is open to recreational activities; (2) alleviate threats to Peninsular bighorn sheep and its habitat associated with Interstate 8, which cuts through the southern portion of this unit and may impede movement between ewe groups; and (3) alleviate threats to Peninsular bighorn sheep and its habitat associated with mining operations at Ocotillo Mineral Material Site and other mining claims that may occur in the unit. Please see the "Special Management Considerations or Protection" section of this final rule for a detailed discussion of the threats to Peninsular bighorn sheep habitat and potential management considerations.

### 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:

(1) Can be implemented in a manner consistent with the intended purpose of the action;

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction;

(3) Are economically and technologically feasible; and

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

Federal activities that may affect Peninsular bighorn sheep 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 remain functional 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 Peninsular bighorn sheep. Generally, the conservation role of Peninsular bighorn

sheep critical habitat units is to support viable core area populations.

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 Peninsular bighorn sheep include, but are not limited to:

(1) Actions that would significantly reduce ongoing management and conservation efforts that benefit Peninsular bighorn sheep on public lands. Such activities could include, but are not limited to, the sale, exchange, or lease of lands managed by BLM or other Federal agencies, and the State of California. These activities could reduce the amount of space that is available for individual and population growth and normal behavior, as well as reduce or eliminate the number and extent of sites for foraging, watering, breeding, reproduction, and rearing of offspring. These activities could also reduce the opportunities available to Federal agencies to exercise their section 7(a)(1) of the Act responsibilities to carry out programs to conserve listed species.

(2) Actions that would significantly reduce the availability of or accessibility to seasonal ranges. Such activities could include, but are not limited to, grazing, mining, and power line and road construction activities. These activities could degrade, reduce, fragment, or eliminate available foraging resources or alter current foraging activities of Peninsular bighorn sheep.

(3) Actions that would result in the significant expansion of dense vegetation communities within Peninsular bighorn sheep habitat. Such activities could include, but are not limited to, fire suppression. These activities could allow expansion of vegetation cover such that movement patterns of bighorn sheep are altered by avoidance of these areas. Tall, dense vegetation decreases visibility for bighorn sheep and provides cover for predators such as the mountain lion, a common predator of Peninsular bighorn sheep.

(4) Actions that would create significant barriers to movement. Such activities could include, but are not limited to, road construction, residential development, and resort or campground facility development or expansion. These activities could interfere with movement within and between habitats,

thereby reducing the availability of habitat for foraging, watering, breeding, reproduction, sheltering, and rearing of offspring. These activities could also reduce opportunities for movement between existing populations, dispersal, and genetic interchange between ewe groups.

(5) Actions that would significantly degrade habitat or cause a disturbance to Peninsular bighorn sheep. Such activities could include, but are not limited to, recreational activities, such as off-road vehicle use, hiking, camping, rock climbing, horseback riding, and outfitter guided activities. These activities could displace animals from foraging areas, water sources, and escape terrain, and could impact the quality and quantity of forage.

#### **Exemptions**

##### *Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- A statement of goals and priorities;
- A detailed description of management actions to be implemented to provide for these ecological needs; and
- A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: "The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that

are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There are no Department of Defense lands with a completed INRMP within the critical habitat designation.

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

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

Section 4(b)(2) of the Act states that the Secretary must designate and 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 our analysis under section 4(b)(2) of the Act.

##### *Economic Analysis*

Following the publication of the proposed revised critical habitat designation, we conducted an economic analysis to estimate the potential economic effect of the designation. The draft economic analysis (DEA; dated June 9, 2008) was made available for public review and comment from August 26, 2008, to October 27, 2008 (73 FR 50498). Substantive comments and information received on the DEA are summarized above in the “Public Comment” section and are incorporated into the final analysis, as appropriate. Taking any relevant new information into consideration, the Service completed a final economic analysis (FEA) (dated November 25, 2008) of the designation that updates the DEA by removing impacts that were not considered probable or likely to occur.

The primary purpose of the economic analysis is to estimate the potential incremental economic impacts associated with the designation of critical habitat for Peninsular bighorn sheep. 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. The economic analysis considers the economic efficiency effects that may result from the designation. In the case of habitat conservation, efficiency effects generally reflect the “opportunity costs” associated with the commitment of resources to comply with habitat protection measures (such as lost economic opportunities associated with restrictions on land use).

The economic analysis also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The economic analysis measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, 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. Finally, the economic analysis looks retrospectively at costs that have been incurred since the date we listed the Peninsular bighorn sheep as endangered (March 18, 1998, 63 FR 13134), and considers those costs that may occur in the years following the revised designation of critical habitat, with the timeframes for this analysis varying by activity.

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, local zoning laws, State and natural resource laws, and enforceable management plans and best management practices applied by other State and Federal agencies. Economic impacts that result from these types of protections are not included in the analysis as they are considered to be part of the regulatory and policy baseline.

The economic analysis examines activities taking place both within and adjacent to the designation. It estimates impacts based on activities that are “reasonably foreseeable” including, but not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public.

Accordingly, the analysis bases estimates on activities that are likely to occur within a 20-year timeframe, from when the proposed rule became available to the public (October 10, 2007, 72 FR 57740). The 20-year timeframe was chosen for the analysis because, as the time horizon for an economic analysis is expanded, the assumptions on which the projected number of projects and cost impacts associated with those projects are based become increasingly speculative.

The economic analysis is intended to quantify the baseline and incremental economic impacts of all potential conservation efforts for Peninsular bighorn sheep associated with the following activities: (1) Habitat management; (2) development; (3) mining; (4) recreation; (5) transportation; and (6) utility construction. Baseline impacts include the potential economic impacts of all actions relating to the conservation of the Peninsular bighorn sheep, including costs associated with sections 7, 9, and 10 of the Act. Baseline impacts also include the economic impacts of protective measures taken as a result of other Federal, State, and local laws that aid habitat conservation in the area evaluated in the DEA. In other words, those impacts associated with the listing of the species and not associated with critical habitat. Incremental impacts are those potential future economic impacts of conservation actions relating to the designation of critical habitat; these impacts would not be expected to occur without the designation of critical habitat.

Baseline economic impacts are those impacts that result from listing and other conservation efforts for Peninsular bighorn sheep. Conservation efforts related to development activities constitute the majority of total baseline costs to areas proposed for critical habitat (more than 70 percent). Mining-related impacts comprise 20 percent of the impacts; these impacts result from potential conservation effort costs associated with mine operations. Recreation and habitat management related impacts comprise about 9 percent of the impacts. Post-designation baseline impacts are estimated to be approximately \$92.5 million in present value terms using a 3 percent discount rate (\$6.22 million annualized) over the next 20 years (2008 to 2027) in areas proposed as critical habitat (not including areas proposed or considered for exclusion under section 4(b)(2) of the Act). Stated in other terms, these post-designation baseline impacts are estimated to be approximately \$67.4 million (\$6.36 million annualized) in

present value terms using a 7 percent discount rate.

Post-designation baseline impacts for areas proposed for exclusion are calculated separately from areas proposed as critical habitat. These impacts are related to continued habitat management practices within areas managed by the Agua Caliente Band of Cahuilla Indians Tribe and are estimated to be approximately \$499,000 (\$33,500 annualized) using a 3 percent discount rate. Stated in present value terms using a 7 percent discount rate, these impacts are estimated at \$369,000 (\$34,800 annualized). Additionally, post-designation baseline impacts for areas considered for exclusion were calculated separately from areas proposed as critical habitat. These impacts are related to habitat management, development, and transportation, and are estimated to be approximately \$86.3 million (\$4.95 million annualized) using a 3 percent discount rate. Assuming a 7 percent discount rate, post-designation baseline impacts are estimated at \$59.7 million (\$5.15 million annualized).

The majority of potential incremental impacts attributed to the proposed revised critical habitat designation are related to habitat management conservation efforts. The economic analysis estimates potential incremental economic impacts in areas proposed as revised critical habitat over the next 20 years to be \$411,000 (\$27,600 annualized) assuming a 3 percent discount rate (not including areas proposed or considered for exclusion under section 4(b)(2) of the Act). Assuming a 7 percent discount rate, these impacts were estimated to be approximately \$306,000 (\$28,900 annualized).

Incremental impacts for the tribal lands proposed for exclusion in the proposed revised critical habitat rule were calculated separately from other areas proposed as critical habitat. These impacts are related to habitat management and development and were estimated to be approximately \$11.3 million (\$758,000 annualized) assuming a 3 percent discount rate. Assuming a 7 percent discount rate, incremental impacts for areas proposed for exclusion are estimated at \$8.31 million (\$785,000 annualized). Additionally, incremental impacts for areas considered for exclusion (Coachella Valley MSHCP) in the proposed revised critical habitat rule were also calculated separately from areas proposed as critical habitat. These impacts are related to forecast section 7 consultations and were estimated to be approximately \$8,850 (\$595 annualized) assuming a 3 percent discount rate.

Assuming a 7 percent discount rate, incremental impacts for areas considered for exclusion were estimated at \$7,920 (\$747 annualized).

The economic analysis considers both economic efficiency and distributional effects. In the case of habitat conservation, efficiency effects generally reflect the "opportunity costs" associated with the commitment of resources to comply with habitat protection measures (such as lost economic opportunities associated with restrictions on land use). The economic analysis also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The analysis measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. This information can be used by decision-makers to assess whether the effects of the revised designation might unduly burden a particular group or economic sector.

The Service completed a final economic analysis (FEA) (November 25, 2008) of the proposed designation that updates the DEA by removing impacts that were not considered probable or likely to occur. The FEA estimates that the potential economic effects of actions relating to the conservation of this DPS, including costs associated with sections 4, 7, and 10 of the Act (baseline costs, not attributable to critical habitat), over the next 20 years will be \$92.5 million applying a 3 percent discount rate, or \$67.4 million using a discount rate of 7 percent. The FEA also estimates total costs attributable solely to the designation of critical habitat for Peninsular bighorn sheep (incremental costs) to be \$411,000 (present value at a 3 percent discount rate). 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> or upon request from the Carlsbad Fish and Wildlife Office (see **ADDRESSES** section).

#### *Benefits of Designating Critical Habitat*

The process of designating critical habitat as described in the Act requires that the Service identify those lands

within the geographical area occupied by the species at the time of listing 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 for 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 data available at the time of designation, the habitat that is identified, if protected or managed appropriately, could provide for the survival and recovery of the species.

The identification of areas that contain features essential to the conservation of the species that can, if managed or protected, 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 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 be included in the areas the Service identifies as meeting the definition of critical habitat.

The consultation provisions under section 7(a)(2) of the Act constitute the regulatory benefits of critical habitat. As discussed above, Federal agencies must consult with the Service on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Federal agencies must also consult with us on 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 to habitat will often result in effects to the species. However, the regulatory standard is different, as the jeopardy

analysis investigates the action's impact on survival and recovery of the species, while the adverse modification analysis investigates the action's effects to the designated habitat's contribution to conservation. This will, in many instances, lead to different results and different regulatory requirements. Thus, critical habitat designations may provide greater benefits to the recovery of a species than would listing alone.

There are two limitations to the regulatory effect of critical habitat. First, a consultation is only required 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 private property owners to undertake specific steps toward 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 the Service concurs 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 formal consultation is initiated. Formal consultation concludes with a biological opinion issued by the Service 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 primary constituent elements, 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 is initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and 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 institute proactive actions over the lands they encompass and are put in place to remove or reduce known threats to a species or its habitat and, therefore, implement recovery actions.

We believe that in many instances the regulatory benefit of critical habitat is minimal when compared to the conservation benefit that can be achieved through implementing Habitat Conservation Plans (HCPs) under section 10 of the Act or other habitat management plans. The conservation achieved through such plans is typically 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 commit resources to implement long-term management and protection to particular habitat for at least one and possibly other listed or sensitive species. Section 7(a)(2) consultations only commit Federal agencies to preventing adverse modification of critical habitat caused by the particular project, and they are not committed to provide conservation or long-term benefits to areas not affected by the proposed action. Thus, implementation of an HCP or management plan that incorporates 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 Peninsular bighorn sheep. 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 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, p. 1407; Crouse *et al.* 2002, p. 720; James 2002, p. 271). Building partnerships and promoting voluntary cooperation of landowners are essential to understanding the status of species on non-Federal lands, and are necessary to implement recovery actions such as reintroducing listed species, habitat restoration, and habitat protection.

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 consultations. In the past decade, we encouraged non-Federal landowners to enter into conservation agreements, based on a view that we can achieve greater species conservation on non-Federal land through such partnerships than we can through regulatory methods (December 2, 1996, 61 FR 63854).

Many private landowners, however, are wary of the possible consequences of encouraging endangered species to their property, and there is mounting evidence 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, pp. 5–6; Bean 2002, pp. 2–3; Conner and Mathews 2002, pp. 1–2; James 2002, pp. 270–271; Koch 2002, pp. 2–3; Brook *et al.* 2003, pp. 1639–1643). 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, pp. 1264–1265; Brook *et al.* 2003, pp. 1644–1648).

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, p. 1263; Bean 2002, p. 2; Brook *et al.* 2003, pp. 1644–1648). The magnitude of this negative outcome is greatly amplified in situations where active management measures (such as reintroduction, fire management, and control of invasive species) are necessary for species conservation (Bean 2002, pp. 3–4). 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 than critical habitat alone.

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 partnerships or voluntary conservation efforts can often be high.

#### *Benefits of Excluding Lands With HCPs or Other Approved Management Plans*

The benefits of excluding lands with HCPs or other approved long-term management plans from critical habitat designation include relieving landowners, communities, and counties of any additional regulatory burden that might be imposed as a result of the critical habitat designation. Most HCPs and other conservation plans take many

years to develop, and upon completion, are consistent with the recovery objectives for listed species that are covered within the plan area. Many also provide conservation benefits to unlisted sensitive species. Imposing an additional regulatory review as a result of the designation of critical habitat may undermine our efforts and partnerships as well. 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 are affected. Addition of a new regulatory requirement would remove a significant incentive for undertaking the time and expense of management planning.

A related benefit of excluding lands covered by approved HCPs and management plans that cover listed species 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. Designating lands within approved management plan areas as critical habitat would likely have 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.

Both HCPs and Natural Communities Conservation Plan (NCCP)–HCP applications require consultation, which would review the effects of all HCP-covered activities that might adversely impact the species under a jeopardy standard, including possibly significant habitat modification, even without the critical habitat designation. Additionally, all other Federal actions that may affect the listed species still require consultation under section 7(a)(2) of the Act, and we review these actions for possibly significant habitat modification in accordance with the jeopardy standard under section 7(a)(2) of the Act.

Information provided in the previous sections applies to all the following discussions of benefits of inclusion or exclusion of critical habitat.

#### *Application of Section 4(b)(2)—Other Relevant Impacts—Conservation Partnerships*

Section 4(b)(2) of the Act allows the Secretary to exclude areas from critical habitat for other relevant impacts if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of 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. As discussed above in the “Conservation Partnerships on Non-Federal Lands” section, we believe that designation can negatively impact the working relationships and conservation partnerships we have formed with private landowners. The Service recognizes that 80 percent of endangered or threatened species occur either partially or solely on private lands (Crouse *et al.* 2002) and we will only achieve recovery of federally listed species with the cooperation of private landowners.

In making the following exclusions, we evaluated the benefits of designating these non-Federal lands that may not have a Federal nexus for consultation while considering if our existing partnerships have resulted, or will result, in greater conservation benefits to the Peninsular bighorn sheep and the physical or biological features essential to its conservation than a critical habitat designation. As discussed in the “Benefits of Designating Critical Habitat” section above, conservation partnerships that result in implementation of an HCP or other management plan that considers enhancement or recovery as the management standard often provide as much or more benefit than consultation for critical habitat designation (the primary benefit of a designation).

In considering the benefits of including lands in a designation that are covered by a current HCP or other management plan, we evaluate a number of factors to help us determine if the plan provides equivalent or greater conservation benefit than would likely result from consultation on a designation:

(1) Whether the plan is complete and provides protection from destruction or adverse modification;

(2) Whether there is a reasonable expectation 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.

We balance the benefits of inclusion against the benefits of exclusion by considering the benefits of preserving partnerships and encouraging development of additional HCPs and other conservation plans in the future.

#### *Exclusion of Agua Caliente Band of Cahuilla Indians Tribal Lands*

The Agua Caliente Band of Cahuilla Indian's Reservation encompasses over 31,400 acres (12,707 ha) of land in the Coachella Valley, Riverside County, California (MBA 2001, p. 1–6). The Reservation contains tribal trust land, allotted trust land, and both tribal and non-Indian fee land, which is in a checkerboard pattern and interspersed among public lands owned or under the control of various Federal and state agencies, and privately owned land under the jurisdiction of the County of Riverside or one of three municipalities (the cities of Palm Springs, Cathedral City, and Rancho Mirage) (MBA 2001, p. 1–6). The reservation includes 19,200 ac (7,770 ha), or 15 percent, of modeled Peninsular bighorn sheep habitat within the Coachella Valley (MBA 2001, p. 4–4). The Tribe regularly coordinates and works with the Service to ensure maximum protection of tribal trust resources, managing activities in such a way as to ensure compliance with the Act (MBA 2001, p. ES–2). This cooperative relationship provides the Tribe an opportunity to acknowledge the Service's duty and authority while preserving tribal sovereignty and honoring traditional tribal land management practices.

The Tribe identified 16 sensitive wildlife species (including Peninsular bighorn sheep) and two sensitive plant species that are covered by the conservation recommendations included in the 2001 Tribal Conservation Strategy (MBA 2001, p. ES–4). This conservation strategy includes: (1) Establishment of two Conservation Areas from which a Habitat Preserve shall either be created or funded; and (2) conservation measures for covered species (MBA 2001, p. ES–4). One of the conservation areas is the Mountains and Canyons Conservation Area (MCCA) from which a multiple species Habitat Preserve will be created, the main component of the 2001 Tribal Conservation Strategy (MBA 2001, p. 5–1). The MCCA includes core habitat for Peninsular bighorn sheep in the San Jacinto and Santa Rosa Mountains, including undeveloped canyon mouths and alluvial fans (MBA 2001, p. 5–2). The other conservation area is the Valley Floor Conservation

Area, which applies a development mitigation fee program to fund acquisition of a Habitat Preserve benefitting species known to exist on the valley floor (MBA 2001, p. 5–1). The conservation measures include avoidance and minimization measures, assurances for establishment of the Habitat Preserve, adaptive management and monitoring, implementation and funding, amendment procedures, and conditions for changed and unforeseen circumstances (MBA 2001, p. ES–4).

Habitat conservation within the MCCA has, to some extent, already been established by the Tribe with the creation of the Indian Canyons Heritage Park and controlled access to Tahquitz Canyon (MBA 2001, p. 5–2). Existing tribal conservation programs for Indian Canyons Heritage Park and Tahquitz Canyon (the Indian Canyons Master Plan and Tahquitz Canyon Wetland Conservation Plan, respectively) reflect the importance of natural resources to the Tribe and the Tribe's intent and ability to manage these resources (MBA 2001, p. 5–2). The Tribe will continue to manage these areas for their habitat values, including protection of covered species (MBA 2001, p. 5–2). Peninsular bighorn sheep, several of the covered species, and natural communities protected within the 2001 Tribal Conservation Strategy are known to occur in these canyon areas (MBA 2001, p. 5–2). Together these protected canyon areas provide over 2,600 ac (1,052 ha) of habitat to covered species (MBA 2001, p. 5–2).

The primary goal of the Indian Canyons Heritage Park is to provide for long-term preservation of major natural and cultural resources (MBA 2001, p. 5–9). Secondary objectives are to preserve the ecological setting for the unique palm oases, and to preclude any development in the park that could have negative impacts (MBA 2001, p. 5–9). Other objectives are to restore the oases to their pristine ecological condition; provide adequate interpretation of the cultural resources; and provide adequate vehicular, foot, and equestrian access to the area (MBA 2001, p. 5–9). The management plan developed for the Indian Canyons Heritage Park (Dangermond Group, 2002) emphasizes the preservation of the following key habitats: wetland and riparian habitats found in canyons; desert scrub communities at the mouth of the Palm Canyon in the northern reaches of the Indian Canyons Heritage Park boundaries; and the Peninsular bighorn sheep migration corridor that runs east-west between the San Jacinto and Santa Rosa Mountains (MBA 2001, p. 5–9).

Tahquitz Canyon is located in the San Jacinto Mountains north of Indian Canyon Heritage Park (MBA 2001, p. 5–10). The Tribe owns approximately 500 ac (202 ha) that includes Tahquitz Canyon and the alluvial fan at the mouth of the canyon (MBA 2001, p. 5–11). In the 1990's, the Tribe commissioned a program aimed at the restoration of Tahquitz Creek (MBA 2001, p. 5–10). Litter and other debris were removed, the effects of vandalism were mitigated, and human access to the area was controlled by gating the entrance to the canyon and implementing regular patrols by Tribal Rangers (MBA 2001, p. 5–10). To ensure the continued protection and restoration of the Tahquitz Canyon area, the Tribe prepared a Wetlands Conservation Plan (Connolly and Associates, 2000). With the plan's adoption, the Tribe formalized its goals toward the maintenance and preservation of Tahquitz Canyon, including utilizing various measures to control the influx of exotic plant species (MBA 2001, p. 5–10).

The 2001 Tribal Conservation Strategy provides adequate certainty that the Habitat Preserve will provide sufficient mitigation for species impacts and provide for conservation of the covered species and their habitat by meeting the following objectives: (1) Protecting a minimum of 90 percent of the habitat in the MCCA for each of the covered species and natural communities addressed in the 2001 Tribal Conservation Strategy; (2) maintaining the viability of essential ecological processes; and (3) maintaining the viability of linkages within conservation areas (MBA 2001, p. 5–13). Species specific avoidance and minimization measures for Peninsular bighorn sheep include the following:

- (1) Construct fences for projects adjacent to Peninsular bighorn sheep habitat to exclude sheep from urban areas where they might otherwise use urban sources of food and water;
- (2) Avoid the use of non-native vegetation along unfenced habitat interfaces where it may attract or concentrate bighorn sheep;
- (3) Promote the use of locally native vegetation and limit the planting of exotic species to areas not accessible by bighorn sheep;
- (4) Discourage the use of plants known to invade and degrade Peninsular bighorn sheep habitat;
- (5) Prohibit the use of any known toxic plants where they may be accessible to sheep or may potentially invade bighorn sheep habitat;
- (6) Prohibit illumination of mountain slopes with artificial lighting; and

(7) Eliminate bluetongue and other vector-carried diseases by complying with the University of California guidelines for water features in new projects (MBA 2001, p. 5–28 and 5–29). Additionally, the Tribe commits to cooperating with State and Federal land management agencies to develop and implement a trails management program that reduces or eliminates trail-related activities that are detrimental to Peninsular bighorn sheep habitat (MBA 2001, p. 5–28 and 5–29).

The Draft Agua Caliente Band of Cahuilla Indians Trail Plan (Trails Management Plan), dated October 1, 2000, is currently being implemented and was developed by the Tribe to provide trails use throughout the Reservation, including Peninsular bighorn sheep habitat. The Trails Management Plan is compatible with bighorn sheep conservation goals as well as affording a reasonable level of access to the public (MBA 2001, p. 4–4). Management of trails on tribal lands may include trail re-routings, limitations on trail use, and seasonal closures for some areas to benefit Peninsular bighorn sheep and other wildlife by decreasing human impact on habitat and disturbance to wildlife (MBA 2001, p. 4–4).

The Tribe is currently cooperating with the Service to finalize the 2007 draft Tribal HCP, which encompasses and updates the existing 2001 Tribal Conservation Strategy, as well as includes all of the other existing management plans described above that provide conservation to Peninsular bighorn sheep and their habitat. The 2007 draft Tribal HCP covers approximately 36,720 ac (14,860 ha) of tribal lands (compared to 31,400 acres (12,707 ha) in the 2001 Tribal Conservation Strategy, an increase of 5,320 acres (2,153 ha)), and includes conservation for 23 sensitive and federally listed species (“covered species”) (Helix Environmental Planning 2007, p. ES–4). The primary conservation mechanism provided by the 2007 draft Tribal HCP is the protection of significant areas of covered species habitat through creation of a habitat preserve and adoption of new development standards (Helix Environmental Planning 2007, p. ES–1).

The Tribe’s purposes in adopting the 2007 draft Tribal HCP are to: (1) Continue to exercise its long-standing tradition as a land use manager and steward of the natural resources in and around the Reservation by assuming a role as the primary manager of such resources and the land uses that impact them; and (2) establish consistency and streamline permitting requirements with

respect to protected species by establishing one process that the Tribe oversees and implements (Helix Environmental Planning 2007, p. ES–1). In summary, the 2007 draft Tribal HCP will streamline the conservation for Peninsular bighorn sheep and other covered species by incorporating and updating the conservation and management practices identified in the existing management plans that have been implemented throughout the reservation to date.

We are currently processing the Tribe’s application for a section 10(a)(1)(B) permit based on the 2007 draft Tribal HCP. We published a Notice of Availability for public review and comment in the **Federal Register** on October 12, 2007, with the public comment period closing January 10, 2008. The approximately 4,790 ac (1,938 ha) of tribal lands in critical habitat Units 1 (4,323 ac (1,749 ha)) and 2A (467 ac (189 ha)) fall within the 2007 draft Tribal HCP area. The Tribe’s goals for conservation of Peninsular bighorn sheep are: (1) Conserving habitat within the 2007 draft Tribal HCP plan area (PCEs 1, 2, 3, 4, and 5); (2) maintaining connectivity, preventing fragmentation, and allowing movement within key linkage areas (PCEs 1 and 4); and (3) adaptively managing habitat quality and subpopulations/ewe groups to alleviate threats in the 2007 draft Tribal HCP plan area (Helix Environmental Planning 2007, p. 4–8).

The 2007 draft Tribal HCP and associated implementing agreement, when finalized, will impose minimization and mitigation requirements in order to facilitate assembly of the habitat preserve and assure minimization and mitigation for impacts to covered species, including Peninsular bighorn sheep. This will provide for significant preservation and management of the physical and biological features essential to the conservation of Peninsular bighorn sheep and will help reach the recovery goals for this DPS. The 2007 draft Tribal HCP is comprehensive and addresses a broad range of management needs at the preserve and species levels that are intended to reduce the threats to Peninsular bighorn sheep.

Peninsular bighorn sheep are primarily threatened by the direct and indirect effects of development and expansion of urban areas; human disturbance related to recreation; construction of roadways and power lines; and mineral extraction and mining operations. In order to remove or reduce threats to Peninsular bighorn sheep and the physical and biological features essential to the conservation of

this DPS, conservation objectives of the 2007 Draft Tribal HCP for Peninsular bighorn sheep include the following:

(1) Ensure implementation of the 2007 draft Tribal HCP is consistent with the recovery plan (Service 2000);

(2) Conserve a minimum of 17,692 ac (7,160 ha) of habitat within the plan area;

(3) Conserve 100 percent of Use Areas (areas defined by the 2007 draft Tribal HCP to have high functional value);

(4) Conserve land necessary to maintain linkages/connectivity;

(5) Minimize direct and indirect impacts from covered activities by ensuring implementation of development standards, including avoidance and minimization measures;

(6) Minimize impacts from recreational activities;

(7) Alleviate threat of disease transfer from livestock or nonnative wildlife;

(8) Monitor population size and mortality rates;

(9) Fund or undertake additional studies regarding this DPS;

(10) Ensure that management action thresholds are routinely assessed;

(11) Implement adaptive management; and

(12) Conserve habitat quality through plan implementation (Helix Environmental Planning 2007, p. 4–9).

The Tribe continues to work with the Service in a coordinated fashion in the context of government-to-government consultation, in part due to the development and finalization of the 2007 draft Tribal HCP. This cooperation will ensure maximum protection of the trust resources of the Tribe and its members, allowing for an approach that acknowledges the duty and authority of the Service with respect to the Act while preserving tribal sovereignty and honoring traditional tribal land management practices (Helix Environmental Planning 2007, p. ES–2). The Tribe has provided assurances that adequate funding is available for implementation of the 2007 draft Tribal HCP throughout the duration of the proposed Section 10(a)(1)(B) permit and that conservation, mitigation, and management measures will be carried out as proposed (Helix Environmental Planning 2007, p. ES–11). The Tribe will provide administrative support to accomplish management responsibilities as well as funding to support the Tribe’s baseline assessment, inventory, and monitoring efforts defined in the plan (Helix Environmental Planning 2007, p. ES–11). Acquisition and management of the habitat preserve will be funded primarily through obligations of covered projects, with an endowment fund



established that provides funding for the Tribe's ongoing costs to administer, manage, and monitor the habitat preserve in perpetuity (Helix Environmental Planning 2007, p. ES-11).

The 1998 final listing rule for Peninsular bighorn sheep identified habitat loss (especially in canyon bottoms), degradation, and fragmentation associated with the proliferation of residential and commercial development, roads and highways, water projects, and vehicular and pedestrian recreational uses as primary threats to the Peninsular bighorn sheep. As described above, the Tribe's ongoing management and conservation efforts provide enhancement of habitat by removing or reducing threats to this DPS and the physical and biological features essential to the conservation of the DPS. The tribal preserve encompasses habitat that supports identified core populations of this DPS and therefore provides for recovery. Based on the reasoning provided below, we excluded from Unit 1 and Unit 2A approximately 4,790 ac (1,938 ha) of Agua Caliente Band of Cahuilla Indians tribally-owned or controlled lands from the Peninsular bighorn sheep final revised critical habitat designation under section 4(b)(2) of the Act.

#### *Benefits of Inclusion—Agua Caliente Band of Cahuilla Indians Tribal Lands*

The inclusion of the approximately 4,790 ac (1,938 ha) of tribally-owned or controlled lands in the final designation could be beneficial because it identifies lands that require management for conservation of Peninsular bighorn sheep. The process of proposing and finalizing the revised critical habitat rule provided the Service with the opportunity to evaluate and refine the features essential to the conservation of the DPS within the geographical area occupied by the Peninsular bighorn sheep at the time of listing, as well as to evaluate whether there are other areas essential for the conservation of the DPS. The designation process included peer review and public comment on the identified features and 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 educational benefits of designation are small and largely redundant to those derived through conservation efforts currently being implemented on tribal lands under the

2001 Tribal Conservation Strategy, as well as those being planned and implemented in the approximately 4,790 ac (1,938 ha) of tribally-owned or controlled lands within the 2007 draft Tribal HCP. The educational benefits of critical habitat designation derived through informing our tribal partners and other members of the public of areas important for the long-term conservation of the Peninsular bighorn sheep have already been and continue to be achieved through: (1) Development of the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP; (2) the original critical habitat designation process in 2001; and (3) publication of the proposed revisions to critical habitat in 2007 and 2008, along with notices of public comment periods, and the public hearing.

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of inclusion for critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. There is the potential for future activities within the lands being excluded having a Federal nexus for the Peninsular bighorn sheep as a result of actions by the BLM (*i.e.*, land exchange) and the Bureau of Indian Affairs (BIA). Therefore, including this area may provide some regulatory benefits under section 7(a) of the Act.

However, the habitat management provided by the Agua Caliente Band of Cahuilla Indians through the 2001 Tribal Conservation Strategy and the management measures it has memorialized in the 2007 draft Tribal HCP address conservation issues from a coordinated, integrated perspective rather than a piecemeal, project-by-project approach and will achieve more Peninsular bighorn sheep conservation on these tribal lands than we would likely achieve through section 7 consultations involving consideration of critical habitat. The PCEs required by the Peninsular bighorn sheep benefit from the conservation measures implemented by the Tribe and outlined in the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP. In summary (and as identified above), the conservation measures currently being implemented by the Tribe through the 2001 Tribal Conservation Strategy, and consistent with management actions memorialized in the draft 2007 Tribal HCP, include:

(1) Ensure management measures are consistent with the recovery plan (Service 2000);

(2) Conserve a minimum of 17,692 ac (7,160 ha) of habitat on tribal lands;

(3) Conserve 100 percent of Use Areas (areas defined by the 2007 draft Tribal HCP to have high functional value);

(4) Conserve land necessary to maintain linkages/connectivity;

(5) Minimize direct and indirect impacts from covered activities by ensuring implementation of development standards, including avoidance and minimization measures;

(6) Minimize impacts from recreational activities;

(7) Alleviate threat of disease transfer from livestock or nonnative wildlife;

(8) Monitor population size and mortality rates;

(9) Fund or undertake additional studies regarding this DPS;

(10) Ensure management action thresholds are routinely assessed;

(11) Implement adaptive management; and

(12) Conserve habitat quality (Helix Environmental Planning 2007, p. 4-9).

Such measures will remove or reduce known threats to Peninsular bighorn sheep and its PCEs in Units 1 and 2A. The Tribe is committed to implementing conservation and management actions that would not generally result from the critical habitat designation (see "Benefits of Designating Critical Habitat" section above). For example, critical habitat designation does not ensure: Habitat enhancement and restoration; functional connections to adjoining habitat; or monitoring of the Peninsular bighorn sheep (see discussion above).

The Agua Caliente Band of Cahuilla Indians highly values its wildlife and natural resources, and is charged to preserve and protect these resources under the Tribal Constitution. Consequently, the Tribe historically has been committed to managing the habitat of wildlife on its lands, including the habitat of endangered and threatened species. In light of the demonstrated commitment by the Tribe to manage Peninsular bighorn sheep habitat to provide for the conservation of the DPS, the preferable regional scale of conservation planning utilized in the development of the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP, and the conservation that has been achieved through implementation of the 2001 Tribal Conservation Strategy and will occur through implementation of the 2007 draft Tribal HCP, we conclude that the potential regulatory benefit of designating these areas in Units 1 and 2A as critical habitat is minimal.

*Benefits of Exclusion—Agua Caliente Band of Cahuilla Indians Tribal Lands*

In accordance with the Secretarial Order 3206, “American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act” (June 5, 1997); the President’s memorandum of April 29, 1994, “Government-to-Government Relations with Native American Tribal Governments” (59 FR 22951); Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2), we believe that fish, wildlife, and other natural resources on tribal lands are better managed under tribal authorities, policies, and programs than through Federal regulation wherever possible and practicable. Based on this philosophy, we believe that, in most cases, designation of tribal lands as critical habitat provides very little additional benefit to threatened and endangered species. Conversely, such designation is often viewed by tribes as unwarranted and an unwanted intrusion into tribal self governance, thus compromising the government-to-government relationship essential to achieving our mutual goals of managing for healthy ecosystems upon which the viability of threatened and endangered species populations depend.

This is supported by the following statement from the Tribe received during the comment period for the proposed rule: “Contrary to the requirements of the ESA, Executive Order 13,175, and the Secretarial Order, the proposed rule fails to defer to the Tribe’s own established standards, it discourages the Tribe from developing its own policies, and it intrudes on tribal management of its lands. Designation of critical habitat could delay approval of the [2007 draft] Tribal HCP, thus adding to the costs of preparing the Tribal HCP and undermining significant protections for the bighorn sheep. Designation of critical habitat also can be expected to increase the amount of time and financial resources necessary to undertake covered activities described in the [2007 draft] Tribal HCP, yet it is unlikely to yield material benefits for the bighorn sheep.”

We developed a close partnership with the Agua Caliente Band of Cahuilla Indians through the development of the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP, which incorporate appropriate protections and management for Peninsular bighorn sheep, its habitat, and the features essential to the conservation of this DPS. These protections are consistent

with statutory mandates under section 7 of the Act to avoid destroying or adversely modifying critical habitat, and go beyond that prohibition by including active management and protection of connected habitat areas. By excluding 4,790 ac (1,938 ha) of lands in Units 1 and 2A from designation, we would (1) Eliminate an essentially redundant layer of regulatory review for projects covered by the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP; (2) help preserve our ongoing partnership with the Agua Caliente Band of Cahuilla Indians; (3) demonstrate our commitment and responsibilities in accordance with the President’s memorandum of April 29, 1994, “Government-to-Government Relations with Native American Tribal Governments” (59 FR 22951), Executive Order 13175, and Secretarial Order 3206; and (4) encourage new partnerships with other tribes, landowners, and jurisdictions. These partnerships with HCP participants are critical for the conservation of Peninsular bighorn sheep.

*The Benefits of Exclusion Outweigh the Benefits of Inclusion—Agua Caliente Band of Cahuilla Indians Tribal Lands*

In accordance with the Secretarial Order 3206, “American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act” (June 5, 1997); the President’s memorandum of April 29, 1994, “Government-to-Government Relations with Native American Tribal Governments” (59 FR 22951); Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2), we recognize the importance of tribal self-governance and the fundamental rights of tribes to set their own priorities and make decisions affecting their resources and distinctive ways of life. Because of the unique government-to-government relationship between Indian tribes and the United States, it is important for us to establish and maintain an effective working relationship and mutual partnership with the Agua Caliente Band of Cahuilla Indians to promote the conservation of the Peninsular bighorn sheep and other sensitive species. As stated above, we believe that fish, wildlife, and other natural resources on tribal lands are better managed under tribal authorities, policies, and programs than through Federal regulation wherever possible and practicable. Based on this philosophy, we believe that, in most cases, designation of tribal lands as critical habitat provides very little

additional benefit to threatened and endangered species.

Furthermore, as discussed in the “Benefits of Inclusion” section above, we believe the regulatory benefit of designating critical habitat on tribally-owned or controlled lands would be low. The management plans that were developed by the Tribe in cooperation with the Service currently implement the Tribe’s conservation strategies and address conservation issues from a coordinated, integrated perspective rather than a piecemeal project-by-project approach. As a result, current management efforts and future management (as demonstrated through coordination to finalize the 2007 draft Tribal HCP) will achieve more Peninsular bighorn sheep conservation than we would achieve through multiple site-by-site, project-by-project, section 7 consultations involving consideration of critical habitat.

Conservation and management of Peninsular bighorn sheep habitat is essential to the survival and recovery of this DPS. Such conservation needs are typically not addressed through the application of the statutory prohibition on destruction or adverse modification of critical habitat. The specific conservation actions, avoidance and minimization measures, and management for Peninsular bighorn sheep and the features essential to its conservation provided by the Tribe’s management actions, and outlined in the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP, exceed any conservation value provided as a result of regulatory protections that may be afforded through a critical habitat designation.

The Tribe’s conservation strategies provide as much or more benefit than a consultation for critical habitat designation conducted under the standards required by the Ninth Circuit in the *Gifford Pinchot* decision. The benefits for the conservation of Peninsular bighorn sheep that would occur as a result of designating critical habitat (e.g., protection afforded through the section 7(a)(2) consultation process) are minimal compared to the overall conservation benefits for the DPS that have been realized through the implementation of the 2001 Tribal Conservation Strategy and will be realized through implementation of the 2007 draft Tribal HCP. Furthermore, educational benefits that may be derived from a critical habitat designation are minimal and largely redundant to the educational benefits achieved through significant public, State, and local government input during the development of the tribal plans.

While it is likely that at least some future activities occurring on the lands being excluded would have a Federal nexus as a result of actions by the BLM (*i.e.*, land exchange) and the BIA, we believe the benefits of including these lands in the designation are small. The Tribe currently implements the 2001 Tribal Conservation Strategy that requires conservation of at least 85 percent of Peninsular bighorn sheep habitat and 100 percent of bighorn sheep use areas and habitat linkages identified on tribal lands. Specifically, 85 percent of the Peninsular bighorn sheep habitat is proposed for conservation, with 100 percent of the bighorn sheep use areas and habitat linkages proposed for conservation. Furthermore, the Tribe has demonstrated considerable efforts to work cooperatively with the Service to develop both the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP, implementation of which is to be consistent with the recovery strategy delineated in the Recovery Plan for Peninsular bighorn sheep.

At least 17,692 ac (7,160 ha) of existing Peninsular bighorn sheep habitat in the plan area are to be conserved. Development projects that may occur in areas not identified for conservation within the boundaries of the 2007 draft Tribal HCP must still avoid impacts to Peninsular bighorn sheep to the maximum extent practicable. Additionally, educational benefits of critical habitat designation are already in place as a result of material provided on our Web site, and through the public notice-and-comment procedures required to establish the 2007 draft Tribal HCP, and by our inclusion of these lands in the proposed rule to revise critical habitat.

In contrast, the benefits of excluding these areas from critical habitat are more significant. The exclusion of these lands from critical habitat will help preserve the partnership we developed with the Tribe through the development of the 2001 Tribal Conservation Strategy and 2007 draft Tribal HCP that incorporate protections and management of this DPS's essential physical and biological features, and promote tribal self-governance. The habitat protections provided by the Tribe's management of its resources are consistent with the mandates under section 7 of the Act to avoid destruction or adverse modification of critical habitat and go beyond that prohibition by including active management and protection of essential habitat areas. Designation of critical habitat alone does not achieve recovery or require management of

those lands identified in the critical habitat rule.

Additionally, this established partnership demonstrates a continued commitment to conservation by the Tribe and aids in fostering additional partnerships for the benefit of all sensitive species on both tribally-owned or controlled lands and other private lands. Furthermore, we believe the exclusion of these tribal lands is consistent with the Act and all applicable policies and guidance (Secretarial Order 3206, "American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act" (June 5, 1997); the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951); Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2).

In summary, in making our final decision with regard to these approximately 4,790 ac (1,938 ha) of tribal lands, we considered several factors including (1) The importance of our government-to-government relationship with the Agua Caliente Band of Cahuilla Indians; (2) our effective, ongoing conservation partnership with the Tribe; (3) the sustained commitment by the Tribe to manage its lands in a manner consistent with the conservation of the DPS, as evidenced by the Tribe's ongoing management of Peninsular bighorn sheep habitat (as set forth in the 2001 Tribal Conservation Strategy (MBA 2001), formally adopted by the Tribe through its Tribal Council on November 12, 2002); and (4) the Tribe's continued commitment and cooperation with us in the finalization of the first tribal multiple-species HCP in the United States (*i.e.*, 2007 draft Tribal HCP).

The importance of tribal self-governance and the fundamental rights of tribes to set their own priorities and make decisions affecting their resources and distinctive ways of life weighs heavily in favor of excluding these tribal lands from the final designation of critical habitat for the Peninsular bighorn sheep. We believe the benefits of including these lands in the final critical habitat designation are minimal because the Tribe's management of these lands provides substantial conservation benefits for the DPS, and we believe existing and future management will continue to provide preservation and management for, and features essential to, the conservation of Peninsular bighorn sheep, which will collectively help reach the recovery goals for this DPS. Additionally, the

educational benefits of designation are small and largely redundant to those derived through the process of working with the Tribe to develop its conservation management plans and the identification of those areas most important to the DPS. By excluding these lands from designation, we would eliminate a largely redundant layer of regulatory review for a limited set of projects, and help preserve our ongoing, critical partnership with the Tribe while encouraging new partnerships with other tribes, landowners, and jurisdictions. Therefore, pursuant to section 4(b)(2) of the Act, we are excluding from Unit 1 and Unit 2A approximately 4,790 ac (1,938 ha) of tribally-owned or controlled lands that meet the definition of critical habitat from this final revised critical habitat designation.

*Exclusion Will Not Result in Extinction of the Species—Agua Caliente Band of Cahuilla Indians Tribal Lands*

The Agua Caliente Band of Cahuilla Indians has demonstrated its commitment to manage Peninsular bighorn sheep habitat in a manner consistent with the conservation of the DPS. The 2001 Tribal Conservation Strategy, other ongoing tribal resource management, and 2007 draft Tribal HCP, when final, have provided and will provide protection and management, in perpetuity, of lands that meet the definition of critical habitat for Peninsular bighorn sheep in Units 1 and 2A. Additionally, the jeopardy standard of section 7 of the Act and routine implementation of conservation measures through the section 7 process provide assurances that the DPS will not go extinct as a result of this exclusion. Therefore, we determined that the exclusion of 4,790 ac (1,938 ha) of tribally-owned or controlled lands from the final designation of critical habitat for the Peninsular bighorn sheep will not result in extinction of the DPS.

*Exclusion of Coachella Valley Multiple Species Habitat Conservation Plan (Coachella Valley MSHCP) Lands*

The Coachella Valley MSHCP is a large-scale, multi-jurisdictional habitat conservation plan encompassing about 1.1 million ac (445,156 ha) in the Coachella Valley of Riverside County (Units 1 and 2A). The Coachella Valley MSHCP addresses 27 listed and unlisted "covered species," including Peninsular bighorn sheep. Participants in the Coachella Valley MSHCP include eight cities (Cathedral City, Coachella, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage); the County of Riverside, including the

Riverside County Flood Control and Water Conservation District, Riverside County Parks and Open Space District, Riverside County Waste Management District; the Coachella Valley Association of Governments; Coachella Valley Water District; Imperial Irrigation District; California Department of Transportation; California Department of Parks and Recreation; Coachella Valley Mountains Conservancy; and the Coachella Valley Conservation Commission (the created joint powers regional authority). The Coachella Valley MSHCP was designed to establish a multiple species habitat conservation program that minimizes and mitigates the expected loss of habitat and the incidental take of covered species. On October 1, 2008, the Service issued a single incidental take permit (TE-104604-0) under section 10(a)(1)(B) of the Act to 19 permittees under the Coachella Valley MSHCP for a period of 75 years.

Implementation of the Coachella Valley MSHCP will establish an approximately 721,457 ac (291,964 ha) Reserve System comprised of 557,100 ac (225,451 ha) of Existing Conservation Lands, up to 29,990 ac (12,137 ha) of Complementary Conservation, and up to 8,777 ac (3,552 ha) of Public and Quasi-Public lands. The permittees will mitigate for the impacts of the incidental take of covered species by conserving 96,400 ac (39,012 ha) [7,500 ac (3,035 ha) of existing local permittee lands and 88,900 ac (35,977 ha) of new conservation] of habitat and perpetually managing 125,590 ac (50,825 ha) within the Reserve System. The location and configuration of the 88,900 ac (35,977 ha) of new local permittee mitigation lands and the 21,390 ac (8,656 ha) that will be acquired through State and Federal contributions are not precisely mapped, but will be assembled from the 21 conservation areas identified in the Coachella Valley MSHCP. Within each conservation area, 90 percent of each natural community within each jurisdiction will be conserved and no more than 10 percent of the habitat will be lost.

In general, the design of the overall Reserve System was intended to capture core habitats, ecological processes, and biological corridors/linkages. The permittees collection and use of development mitigation fees, landfill tipping fees, and other funding specified in the Coachella Valley MSHCP and related documents will be used to acquire, protect, and manage the Reserve System in perpetuity. The permittees, the State, and Service will work cooperatively to enter into a Memorandum of Understanding or other

appropriate agreements with Federal, State, and non-governmental-organization land managers to cooperatively manage the Existing Conservation Lands in conformance with the MSHCP. Additionally, the Coachella Valley MSHCP includes measures to avoid and minimize impacts on covered species resulting from covered activities.

The Coachella Valley MSHCP Reserve System includes about 165,856 ac (67,120 ha) of Peninsular bighorn sheep habitat of which 38,759 ac (15,685 ha) meet the definition of critical habitat. Approximately 135,630 ac (54,888 ha) of the Peninsular bighorn sheep habitat in the Reserve System are Existing Conservation Lands that are expected to be managed consistent with the Coachella Valley MSHCP, of this approximately 38,477 ac (15,571 ha) meet the definition of critical habitat. Specific conservation goals, conservation objectives, and required measures for Peninsular bighorn sheep in the Coachella Valley MSHCP include providing a total of 18,619 ac (7,535 ha) of occupied or suitable habitat within the Santa Rosa and San Jacinto Mountains, Snow Creek/Windy Point, and Cabazon Conservation Areas. This acreage goal is proposed to be attained through the conservation of private lands in the three conservation areas within the Coachella Valley MSHCP Plan Area boundary. When completed, the proposed Coachella Valley MSHCP Reserve System will protect core habitat areas and provide critical linkages for Peninsular bighorn sheep in perpetuity.

The Coachella Valley MSHCP contains conservation goals, conservation objectives, and required measures that will ameliorate the negative effects of development on Peninsular bighorn sheep habitat. The required measures include criteria for locating development, conditional provisions regarding unauthorized trails, areas where 10 percent of the private land may be developed, special provision areas, parcels subject to the Habitat Evaluation and Acquisition Negotiation Strategy (HANS), Major Amendment areas, and special disturbance areas relating to water and flood control agencies. Collectively, these measures provide a basis for evaluating, restricting, and configuring development and related activities to ensure that such projects are consistent with the Coachella Valley MSHCP.

The Coachella Valley MSHCP also contains a number of avoidance, minimization, and mitigation measures as follows: (1) Proposed covered activities in Peninsular bighorn sheep habitat will be prohibited during the

lambling season (January 1 though June 30) unless otherwise authorized through a Minor Amendment with concurrence from the State and Service; (2) landscaping with toxic plants will be prohibited in Peninsular bighorn sheep habitat, and existing facilities with toxic plants must complete a plan and schedule for removing or preventing access to toxic plants within one year of permit issuance; and (3) all water tank construction and operation and maintenance will require 1:1 mitigation by acreage, no public access, native landscaping, and location away from sensitive areas. Additionally, the Coachella Valley MSHCP also provides for the implementation of land use agency guidelines to avoid and minimize the direct and indirect effects associated with development.

The Coachella Valley MSHCP (Section 7.3.3.2) addressed the Public Use and Trails Management on Reserve Lands within the Santa Rosa and San Jacinto Mountains Conservation Area. The Santa Rosa and San Jacinto Mountains Conservation Area includes trails that cross both Federal and non-Federal land. The Coachella Valley MSHCP addresses impacts to Peninsular bighorn sheep for the construction of specified trails and for the use of identified trails on non-Federal land. The BLM is pursuing a section 7 consultation for the components of the coordinated Plan on Federal lands within the Reserve System. The U.S. Forest Service will determine whether public use and trails management will require consultation with the Service pursuant to section 7 of the Act. Impacts to Peninsular bighorn sheep associated with the public use and trails management plan are addressed in the Coachella Valley MSHCP. The Coachella Valley MSHCP describes the implementation of a focused research program to evaluate the effects of recreational trail use on Peninsular bighorn sheep health, behavior, habitat selection, and long-term population dynamics.

The Desert Water Authority is not a permittee and its lands are not subject to the conservation requirements of the Coachella Valley MSHCP through any discretionary authority of the permittees. Therefore, 293 ac (119 ha) of lands within Unit 1 and Unit 2A owned by DWA have not been excluded from the final revised critical habitat designation under the Coachella Valley MSHCP.

The 1998 final listing rule for Peninsular bighorn sheep identified habitat loss (especially in canyon bottoms), degradation, and fragmentation associated with the

proliferation of residential and commercial development, roads and highways, water projects, and vehicular and pedestrian recreational uses as primary threats to Peninsular bighorn sheep. As described above, the Coachella Valley MSHCP management and conservation efforts provide enhancement of habitat by removing or reducing threats to Peninsular bighorn sheep and the physical and biological features essential to the conservation of this DPS. The Coachella Valley MSHCP Plan Area encompasses habitat that supports identified core populations of this DPS and therefore provides for recovery. The implementation of the conservation goals, conservation objectives, and required measures; avoidance and minimization measures; and management for Peninsular bighorn sheep provided for in the Coachella Valley MSHCP exceed any conservation value provided as a result of regulatory protections that have been or may be afforded through critical habitat designation.

Based on the reasoning provided below, we excluded from Unit 1 and Unit 2A approximately 38,759 ac (15,685 ha) of private and permittee-owned or controlled lands or lands under the jurisdiction of the permittees within the Santa Rosa and San Jacinto Mountains, Snow Creek/Windy Point, and Cabazon Conservation Areas within Coachella Valley MSHCP Plan Area boundary (see Coachella Valley MSHCP, Volume 1, Sections 4.3.1, 4.3.3, and 4.3.21) from the Peninsular bighorn sheep final revised critical habitat designation under section 4(b)(2) of the Act. Covered activities conducted or approved by the Coachella Valley MSHCP permittees are subject to the conservation requirements of the Coachella Valley MSHCP. Of the 38,759 ac (15,685 ha) excluded under the Coachella Valley MSHCP, approximately 38,477 ac (15,571 ha) are anticipated to be conserved under the plan. Approximately 282 ac (114 ha) or 0.7 percent of the acres excluded under the Coachella Valley MSHCP are permitted for development consistent with the MSHCP.

#### Benefits of Inclusion—Coachella Valley MSHCP

The inclusion of approximately 38,759 ac (15,685 ha) of private and permittee-owned or controlled lands within the Coachella Valley MSHCP could be beneficial because it identifies lands that require management for conservation of Peninsular bighorn sheep. The process of proposing and finalizing the revised critical habitat rule provided the Service with the

opportunity to evaluate and refine the features essential to the conservation of the DPS within the geographical area occupied by Peninsular bighorn sheep at the time of listing, as well as to evaluate whether there are other areas essential for the conservation of the DPS. The designation process included peer review and public comment on the identified features and 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 educational benefits of designation are small and largely redundant to those derived through conservation efforts currently being planned and implemented in the approximately 38,759 ac (15,685 ha) of private and permittee-owned or controlled lands within the Coachella Valley MSHCP. As described above, the process of developing the Coachella Valley MSHCP has involved several partners including (but not limited to) the eight participating local jurisdictions, Riverside County, California Department of Fish and Game, and Federal agencies. The educational benefits of critical habitat designation derived through informing Coachella Valley MSHCP partners and other members of the public of areas important for the long-term conservation of this DPS have already been and continue to be achieved through: (1) Development and implementation of the Coachella Valley MSHCP; (2) the original designation process in 2001; and (3) publication of the proposed revisions to critical habitat in 2007 and 2008, including notices of public comment periods, and the public hearings.

The consultation provisions under section 7 of the Act constitute the regulatory benefits of inclusion for critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. There is the potential for future activities within the lands being excluded having a Federal nexus for Peninsular bighorn sheep as a result of actions by Agua Caliente Band of Cahuilla Indians, BLM, Army Corps of Engineers, and the Federal Highway Administration. Therefore, including this area may provide some regulatory benefits under section 7 of the Act.

However, the Coachella Valley MSHCP addresses conservation issues from a coordinated, integrated

perspective rather than a piecemeal, project-by-project approach (as would occur on these lands under sections 7 and 10 of the Act absent this regional plan) and will arguably achieve more Peninsular bighorn sheep conservation within the Coachella Valley MSHCP Plan Area than through section 7 consultations involving consideration of critical habitat. The PCEs required by Peninsular bighorn sheep will benefit by the conservation objectives and required measures outlined in the Coachella Valley MSHCP.

In summary, these conservation measures include but are not limited to: preservation and protection of core Peninsular bighorn sheep habitat in perpetuity, maintenance of water sources, criteria for locating development to minimize effects to Peninsular bighorn sheep, implementation of minimization and mitigation measures and land use agency guidelines, conditional provisions regarding unauthorized trails, and monitoring the effects of trails and population monitoring. Such measures will remove or reduce known threats to Peninsular bighorn sheep and its PCEs in Unit 1 and Unit 2A. The Coachella Valley MSHCP will ensure that conservation and management actions take place that are not required by critical habitat designation (see "Benefits Of Designating Critical Habitat" section above). For example, critical habitat designation does not ensure habitat protection; enhancement and restoration; maintenance of water sources; functional linkages to adjoining habitat; or monitoring of Peninsular bighorn sheep (see discussion above).

In light of the preferable regional scale of conservation planning used in the development of the Coachella Valley MSHCP and the conservation that will occur under the Coachella Valley MSHCP, we conclude that the potential regulatory benefit of designating these areas in Unit 1 and Unit 2A as critical habitat is minimal. We acknowledge that a very small portion of the area we are excluding from critical habitat is not anticipated to be conserved under the Coachella Valley MSHCP, approximately 282 ac (114 ha) or 0.7 percent of the area excluded. Therefore, the benefits of inclusion of these lands within designated critical habitat are higher than for those lands anticipated for conservation under the Coachella Valley MSHCP.

#### Benefits of Exclusion—Coachella Valley MSHCP

Regional and subregional HCPs foster an ecosystem-based approach to habitat conservation planning, and once

developed, conservation issues are addressed through a coordinated approach. However, these large and often costly regional plans are voluntary for the local jurisdiction(s) that pursue this approach, in the sense that they could require landowners (e.g., homeowners, developers) to consult with the Service individually for a section 10 permit. As a result, the local jurisdiction would incur no costs associated with the landowner's need for a section 10 permit, requiring the landowner to obtain this permit prior to issuance of a building permit. However, this approach would result in uncoordinated, "patchy" conservation that would likely not further the recovery of federally listed species. Rather, by voluntarily developing these regional plans (versus individual landowner HCPs), the coordinated landscape-scale conservation results in preservation of interconnected linkage areas and populations that support recovery of listed species.

We recognize that once an HCP is permitted, implementation of the conservation measures is not voluntary in order for permittees to receive incidental take coverage. However, the benefits of excluding lands under the scenario described above are: (1) Retaining and fostering the existing partnership and working relationship with all stakeholders; and (2) encouraging future regional HCP development or development of other species/habitat conservation plans. Additionally, exclusion of an HCP (such as the Coachella Valley MSHCP) demonstrates our good faith effort and working relationships, which should encourage initiation and completion of other HCPs.

We developed close partnerships with all participating entities through the development of the Coachella Valley MSHCP, which incorporates appropriate protections and management for Peninsular bighorn sheep, its habitat, and the features essential to the conservation of this DPS. By excluding 38,759 ac (15,685 ha) of lands in Unit 1 and Unit 2A from designation, we are eliminating an essentially redundant layer of regulatory review for projects covered by the Coachella Valley MSHCP, helping to preserve our ongoing partnership with the plan participants, and encouraging new partnerships with other landowners and jurisdictions. These partnerships with the Coachella Valley MSHCP participants are critical for the conservation of Peninsular bighorn sheep.

Benefits of Exclusion Outweigh the Benefits of Inclusion—Coachella Valley MSHCP

As discussed in the "Benefits of Inclusion—Coachella Valley MSHCP" section above, we believe the regulatory benefit of designating critical habitat on private lands, permittee-owned or controlled lands covered by the Coachella Valley MSHCP would be low. The Coachella Valley MSHCP addresses conservation issues from a coordinated, integrated perspective rather than a piecemeal project-by-project approach and will achieve more Peninsular bighorn sheep conservation than we would achieve through multiple site-by-site, project-by-project, section 7 consultations involving consideration of critical habitat.

Conservation and management of Peninsular bighorn sheep habitat is essential to the survival and recovery of this DPS. Such conservation needs are typically not addressed through the application of the statutory prohibition on destruction or adverse modification of critical habitat. Even considering the small percentage of lands meeting the definition of critical habitat that may be developed in the future, the specific conservation actions (conservation goal, conservation objectives, and required measures); avoidance and minimization measures; and monitoring and management for Peninsular bighorn sheep and the features essential to its conservation provided by the Coachella Valley MSHCP exceed any conservation value provided as a result of regulatory protections that may be afforded through a critical habitat designation. The Coachella Valley MSHCP provides as much or more conservation benefit than a consultation for critical habitat designation conducted under the standards required by the Ninth Circuit in the *Gifford Pinchot* decision. The benefits for the conservation of Peninsular bighorn sheep that would occur as a result of designating these lands as critical habitat (e.g., protection afforded through the section 7(a)(2) consultation process) are minimal compared to the overall conservation benefits for the DPS that will be realized through the implementation of the Coachella Valley MSHCP. Furthermore, educational benefits that may be derived from a critical habitat designation are minimal and largely redundant to the educational benefits achieved through significant public, State, and local government input during the development and implementation of the Coachella Valley MSHCP.

We developed close partnerships with the 19 Coachella Valley MSHCP

permittees through the development of this regional HCP that incorporates appropriate protections and management of this DPS's essential physical and biological features. Those protections are consistent with the mandates under section 7 of the Act to avoid destruction or adverse modification of critical habitat and go beyond that prohibition by including active management and protection of essential habitat areas. Designation of critical habitat alone does not achieve recovery or require management of those lands identified in the critical habitat rule. We believe the conservation benefits for Peninsular bighorn sheep that would occur as a result of designating those 38,759 ac (15,685 ha) in Unit 1 and Unit 2A as critical habitat (e.g., protection afforded through the section 7(a)(2) consultation process) is minimal compared to the overall conservation benefits for the DPS that will be realized through the implementation of the Coachella Valley MSHCP.

Furthermore, the benefits to recovery of inclusion primarily have already been met through the identification of those areas most important to the DPS. By excluding these lands from critical habitat, 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 to encourage 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 Peninsular bighorn sheep. Designating critical habitat on non-Federal lands within the Coachella Valley MSHCP could have a detrimental effect to our partnerships with the 19 Coachella Valley MSHCP permittees and could be a significant disincentive to the establishment of future partnerships and HCPs with other landowners.

We reviewed and evaluated the exclusion of 38,759 ac (15,685 ha) of private and permittee-owned or controlled lands within the Coachella Valley MSHCP plan area from the final revised critical habitat designation for Peninsular bighorn sheep and determined that the benefits of excluding these lands in Unit 1 and Unit 2A outweigh the benefits of including them. As discussed above, the MSHCP will provide for significant preservation and management of habitat for and features essential to the conservation of Peninsular bighorn

sheep and will help reach the recovery goals for this DPS.

#### Exclusion Will Not Result in Extinction of the Subspecies—Coachella Valley MSHCP

In keeping with our analysis and conclusion detailed in our biological opinion for the Coachella Valley MSHCP (Service 2008, pp. 643–644), we determined that the exclusion of 38,759 ac (15,685 ha) of private lands and permittee-owned or controlled lands within the Coachella Valley MSHCP Plan Area from the final designation of critical habitat for Peninsular bighorn sheep will not result in the extinction of the DPS. The Coachella Valley MSHCP provides protection and management, in perpetuity, of lands that meet the definition of critical habitat for the DPS in Unit 1 and Unit 2A. We acknowledge that some lands excluded within the Coachella Valley MSHCP are permitted for development (approximately 0.7 percent); however, the potential loss of this habitat will not result in the extinction of Peninsular bighorn sheep. Additionally, the jeopardy standard of section 7 of the Act and routine implementation of conservation measures through the section 7 process provide assurances that the DPS will not go extinct as a result of this exclusion.

#### Required Determinations

##### *Takings—Executive Order 12630*

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 critical habitat for Peninsular bighorn sheep in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this final revised designation of critical habitat for Peninsular bighorn sheep does not pose significant takings implications.

##### *Regulatory Planning and Review—Executive Order 12866*

The Office of Management and Budget (OMB) has determined that this rule is not significant under E.O. 12866. OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of \$100 million or more on the economy or adversely affect an

economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies’ actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

##### *Civil Justice Reform—Executive Order 12988*

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 DPS within the designated areas to assist the public in understanding the habitat needs of the Peninsular bighorn sheep.

##### *Federalism—Executive Order 13132*

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, these final critical habitat designations with appropriate State resource agencies in California. During the public comment periods, we contacted appropriate State and local agencies and jurisdictions, and invited them to comment on the proposed revised critical habitat designation for the Peninsular bighorn sheep. In total, we responded to 3 letters received during these comment periods from local governments (see “Summary of Comments and Recommendations” section). The designations may have some benefit to these governments in that the areas that contain the features essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat essential to the conservation 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).

##### *Energy Supply, Distribution, Or Use—Executive Order 13211*

E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This revision to critical habitat for the Peninsular bighorn sheep is not considered a significant regulatory action under E.O. 12866. OMB has provided guidance for implementing this Order that outlines nine outcomes that may constitute “a significant adverse effect” when compared without the regulatory action under consideration. The economic analysis finds that none of these criteria are relevant to this analysis. Thus, based on information in the economic analysis (Appendix A), energy-related impacts associated with Peninsular bighorn sheep conservation activities within the areas included in the final designation of critical habitat are not expected.

Sunrise Powerlink is the only entity involved in the production of energy. Although Sunrise Powerlink is likely to incur incremental Peninsular bighorn sheep conservation costs, these costs are not expected to be sufficient to be noted as a “significant adverse effect.” Over the next 20 years, Sunrise Powerlink is forecast to incur total expenses of \$4,030, discounted at seven percent. These impacts are not sufficient to reduce electricity production appreciably, or to increase the cost of energy production or delivery by more than one percent. Thus, the incremental impacts associated with critical habitat designation for Peninsular bighorn sheep are unlikely to be of sufficient magnitude to affect energy production or delivery. As such, the final designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use, and a Statement of Energy Effects is not required.

##### *Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act, the Service makes the following findings:

(1) This rule does 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 tribal

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 tribal 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; Aid to Families with Dependent Children 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 section 7 of the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat. Non-Federal entities that receive Federal funding, assistance, permits, or otherwise require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat. However, 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 on to State governments.

(2) We do not believe that this rule would significantly or uniquely affect small governments because it would 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. The FEA concludes that there are no incremental impacts resulting from this rulemaking that may be borne by

small entities. Potential incremental impacts stemming from the Sunrise Powerlink project will be borne by San Diego Gas and Electric and a mine owned by Creole Corporation, a subsidiary of Texas Industries, Inc.; however, both of these entities are also not small governments.

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

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 802(2)), whenever an agency is required to 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 effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The Small Business Regulatory Enforcement Fairness Act amended the Regulatory Flexibility Act to require Federal agencies to provide a certification 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 Peninsular bighorn sheep 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, 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; and small businesses (13 CFR 121.201). 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 considered the types of activities that might trigger regulatory impacts under this designation as well as 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 revised designation of critical habitat for the Peninsular bighorn sheep would affect a substantial number of small entities, we considered the number of small entities affected within particular types of economic activities, such as residential and commercial development. We considered each industry or category individually to determine if certification is appropriate. In estimating the numbers of small entities potentially affected, we also considered whether their activities have any Federal involvement; some kinds of activities are unlikely to have any Federal involvement and thus will not be affected by the designation of critical habitat. Designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies; non-Federal activities are not affected by the designation.

In areas where the DPS 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 Peninsular bighorn sheep (see “Section 7 Consultation” section) or their critical habitat. Future consultations to avoid the destruction or adverse modification of critical habitat would be incorporated into the existing consultation process. In the case of completed consultations for ongoing Federal activities, however, the Federal agency may be required to reinitiate consultation (see “Application of the ‘Adverse Modification’ Standard” section). Designation of critical habitat, in that case, could result in an additional economic impact on small entities.

In our DEA of the proposed revision of critical habitat, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the proposed revision of critical habitat for the Peninsular bighorn sheep. The analysis is based on the estimated incremental impacts associated with the rulemaking as described in section 2 of the analysis. In the DEA, we evaluated the potential economic effects on small business entities resulting from implementation of conservation actions related to the proposed revision to critical habitat for the Peninsular bighorn sheep. The economic analysis identifies the estimated incremental impacts associated with the proposed rulemaking as described in chapters 2 through 7, and evaluates the potential





■ 3. In § 17.95(a), revise the entry for “Bighorn Sheep (Peninsular Ranges) (*Ovis canadensis*)” to read as follows:

**§ 17.95 Critical habitat—fish and wildlife.**

(a) *Mammals.*

\* \* \* \* \*

Peninsular Bighorn Sheep, a Distinct Population Segment of Desert Bighorn Sheep (*Ovis canadensis nelsoni*)

(1) Critical habitat units are depicted for Riverside, San Diego, and Imperial Counties, California, on the maps below.

(2) The primary constituent elements of critical habitat for the Peninsular bighorn sheep are:

(i) Moderate to steep, open slopes (20 to 60 percent) and canyons, with canopy cover of 30 percent or less (below 4,600 ft (1,402 m) elevation in Peninsular Ranges) that provide space for sheltering, predator detection, rearing of young, foraging and watering, mating, and movement within and between ewe groups;

(ii) Presence of a variety of forage plants, indicated by the presence of shrubs (e.g., *Ambrosia* spp., *Caesalpinia* spp., *Hyptis* spp., *Sphaeralcea* spp., *Simmondsia* spp.), that provide a primary food source year round, grasses (e.g., *Aristida* spp., *Bromus* spp.) and cacti (e.g., *Opuntia* spp.) that provide a source of forage in the fall, and forbs (e.g., *Plantago* spp., *Ditaxis* spp.) that provide a source of forage in the spring;

(iii) Steep, rugged slopes (60 percent slope or greater) (below 4,600 ft (1,402 m) elevation in Peninsular Ranges) that provide secluded space for lambing and terrain for predator evasion;

(iv) Alluvial fans, washes, and valley bottoms that provide important foraging areas where nutritious and digestible plants can be more readily found during times of drought and lactation, and that provide and maintain habitat connectivity by serving as travel routes between and within ewe groups,

adjacent mountain ranges, and important resource areas (e.g., foraging areas and escape terrain); and

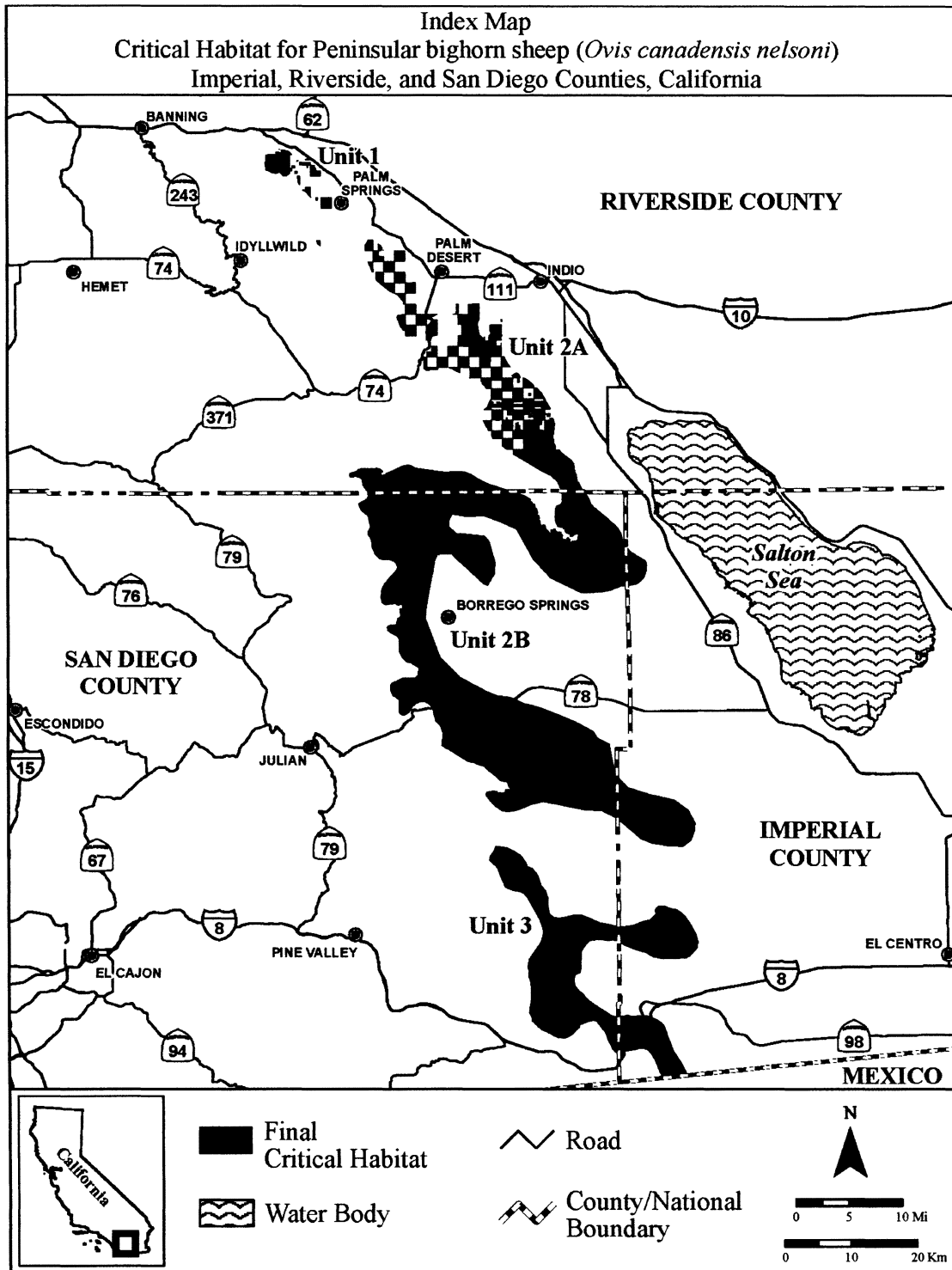
(v) Intermittent and permanent water sources that are available during extended dry periods and provide relatively nutritious plants and drinking water.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, 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 units. Data layers defining map units were created on a base of USGS 1:24,000 maps, and critical habitat units were then mapped using Universal Transverse Mercator (UTM) coordinates.

(5) Note: Index map of critical habitat units for the Peninsular bighorn sheep follows:

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(6) Unit 1: San Jacinto Mountains, Riverside County, California.

(i) From USGS 1:24,000 quadrangles Desert Hot Springs, Palm Springs, and San Jacinto Peak, and White Water. Land bounded by the following

Universal Transverse Mercator (UTM) North American Datum of 1927

(NAD27) coordinates (E, N): 534134,

3750021; 534465, 3749681; 534495,

3749651; 534495, 3749651; 534495,

3749651; 534495, 3749651; 534572,

3749621; 534997, 3749456; 534792,

3749102; 534885, 3748934; 535128,

3748785; 535310, 3748807; 535426,

3748822; 535471, 3748798; 535663,

3748697; 535706, 3748674; 535706,

3748652; 535713, 3748654; 535739,

3748650; 535777, 3748637; 535816,

3748627; 535834, 3748623; 535944,

3748624; 535999, 3748624; 536000,

3748624; 536000, 3748624; 536056,

3748624; 536056, 3748656; 536499,

3748909; 536927, 3749153; 537308,

3748794; 538009, 3748134; 538064,

3748082; 538535, 3747726; 538535,

3747703; 538566, 3747702; 538901,

3747449; 539106, 3747293; 539235,

3746550; 539240, 3746463; 539240,

3746455; 539254, 3746181; 539088,

3745848; 539244, 3745133; 539265,

3745144; 539562, 3745200; 539802,

3745192; 540194, 3745168; 540512,

3745097; 540512, 3744900; 540511,

3744851; 540512, 3744847; 540521,

3744847; 540607, 3744847; 540817,

3744847; 540900, 3744846; 540900,

3744846; 540900, 3744800; 540900,

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3744100; 540503, 3744100; 540511,

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3743700; 540800, 3743700; 540800,

3743600; 540800, 3743500; 540885,

3743501; 540883, 3743342; 540906,

3743287; 541006, 3743322; 541083,

3743355; 541120, 3743355; 541171,

3743337; 541299, 3743351; 541300,

3743300; 541300, 3743238; 541300,

3743231; 541300, 3743200; 541321,

3743200; 541321, 3743196; 541330,

3743175; 541340, 3743160; 541342,

3743145; 541344, 3743138; 541348,

3743132; 541353, 3743127; 541356,

3743122; 541362, 3743116; 541368,

3743111; 541371, 3743107; 541376,

3743098; 541377, 3743095; 541379,

3743089; 541378, 3743082; 541380,

3743075; 541381, 3743070; 541384,

3743064; 541388, 3743060; 541395,

3743053; 541403, 3743047; 541413,

3743043; 541417, 3743039; 541425,

3743032; 541431, 3743027; 541436,

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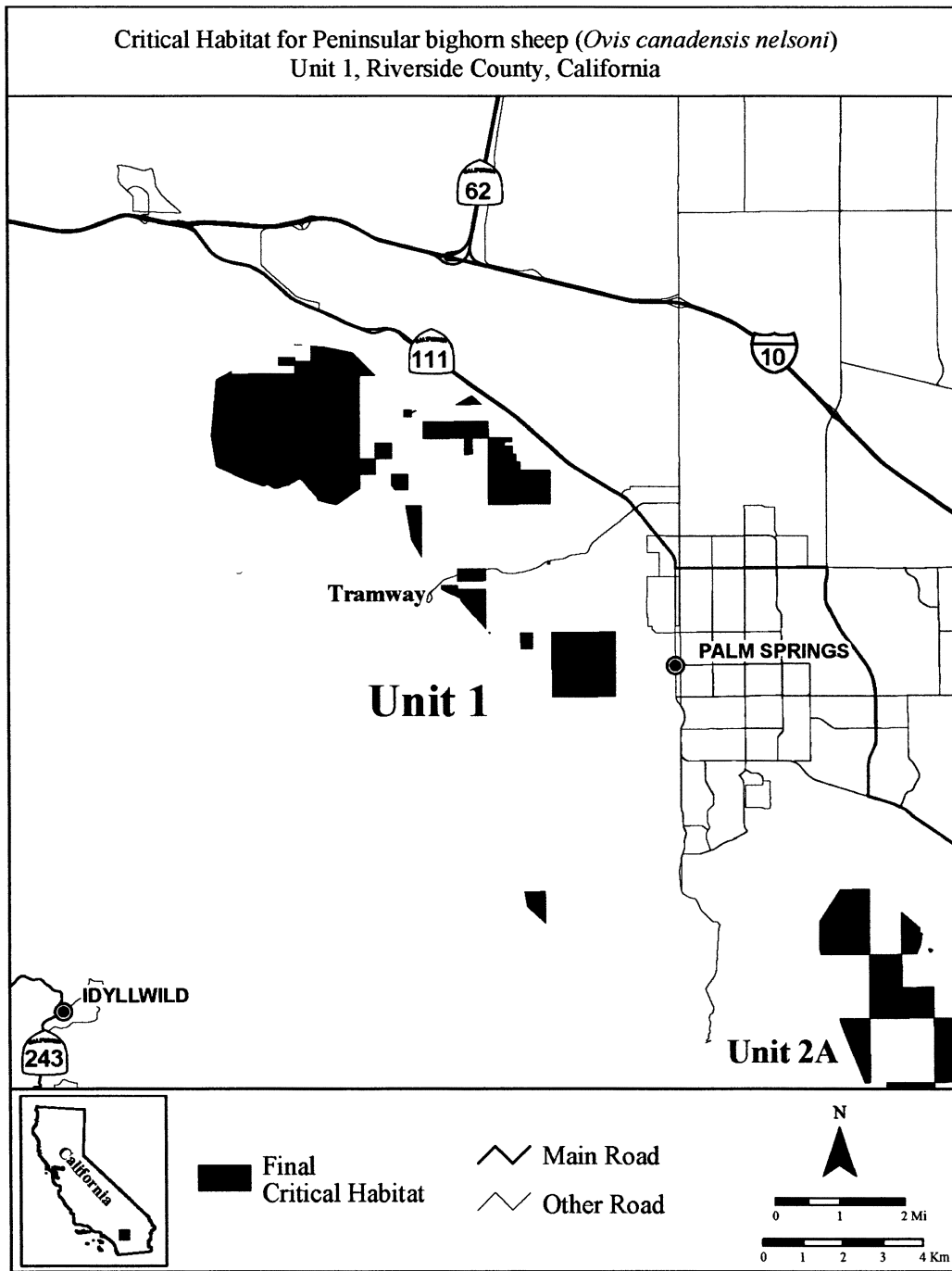
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returning to 534134, 3750021.

(ii) *Note:* Map of Unit 1, San Jacinto  
Mountains (Map 2) follows:

**BILLING CODE 4310-55-P**



(7) Unit 2A: North Santa Rosa Mountains, Riverside County, California.

(i) From USGS 1:24,000 quadrangles Cathedral City, Clark Lake NE, La Quinta, Martinez Mountain, Palm Springs, Palm View Peak, Rabbit Peak, Rancho Mirage, Toro Peak, and Valerie. Land bounded by the following Universal Transverse Mercator (UTM) North American Datum of 1927 (NAD27) coordinates (E, N): 548200, 3735505; 548200, 3735500; 548211, 3735500; 548229, 3735493; 548242, 3735488; 548253, 3735483; 548278, 3735474; 548285, 3735471; 548300, 3735465; 548300, 3735400; 548400, 3735400; 548500, 3735400; 548500, 3735480; 548515, 3735478; 548523, 3735478; 548560, 3735481; 548580, 3735488; 548591, 3735491; 548607, 3735496; 548608, 3735496; 548644, 3735490; 548659, 3735497; 548673, 3735503; 548690, 3735520; 548716, 3735546; 548720, 3735550; 548736, 3735569; 548768, 3735606; 548773, 3735615; 548783, 3735631; 548778, 3735657; 548778, 3735659; 548799, 3735678; 548821, 3735687; 548825, 3735689; 548844, 3735682; 548868, 3735674; 548874, 3735672; 548890, 3735664; 548892, 3735663; 548909, 3735654; 548955, 3735628; 549021, 3735590; 549038, 3735580; 549075, 3735551; 549085, 3735544; 549101, 3735534; 549131, 3735513; 549131, 3735526; 549125, 3735553; 549111, 3735581; 549105, 3735594; 549077, 3735654; 549074, 3735660; 549074, 3735680; 549089, 3735687; 549102, 3735682; 549097, 3735720; 549094, 3735745; 549093, 3735749; 549102, 3735757; 549132, 3735749; 549145, 3735755; 549157, 3735754; 549169, 3735738; 549180, 3735744; 549175, 3735804; 549186, 3735810; 549195, 3735817; 549205, 3735819; 549238, 3735827; 549245, 3735846; 549250, 3735853; 549251, 3735854; 549278, 3735863; 549285, 3735868; 549280, 3735880; 549283, 3735883; 549285, 3735886; 549307, 3735894; 549331, 3735897; 549350, 3735888; 549369, 3735874; 549387, 3735876; 549392, 3735881; 549418, 3735882; 549440, 3735896; 549472, 3735885; 549482, 3735882; 549484, 3735894; 549462, 3735909; 549457, 3735936; 549469, 3735963; 549475, 3735976; 549488, 3735971; 549491, 3735983; 549476, 3736004; 549481, 3736011; 549496, 3736013; 549480, 3736033; 549471, 3736057; 549476, 3736063; 549495, 3736054; 549524, 3736058; 549532, 3736058; 549543, 3736072; 549566, 3736077; 549559, 3736095; 549544, 3736095; 549536, 3736099; 549533, 3736119; 549533,

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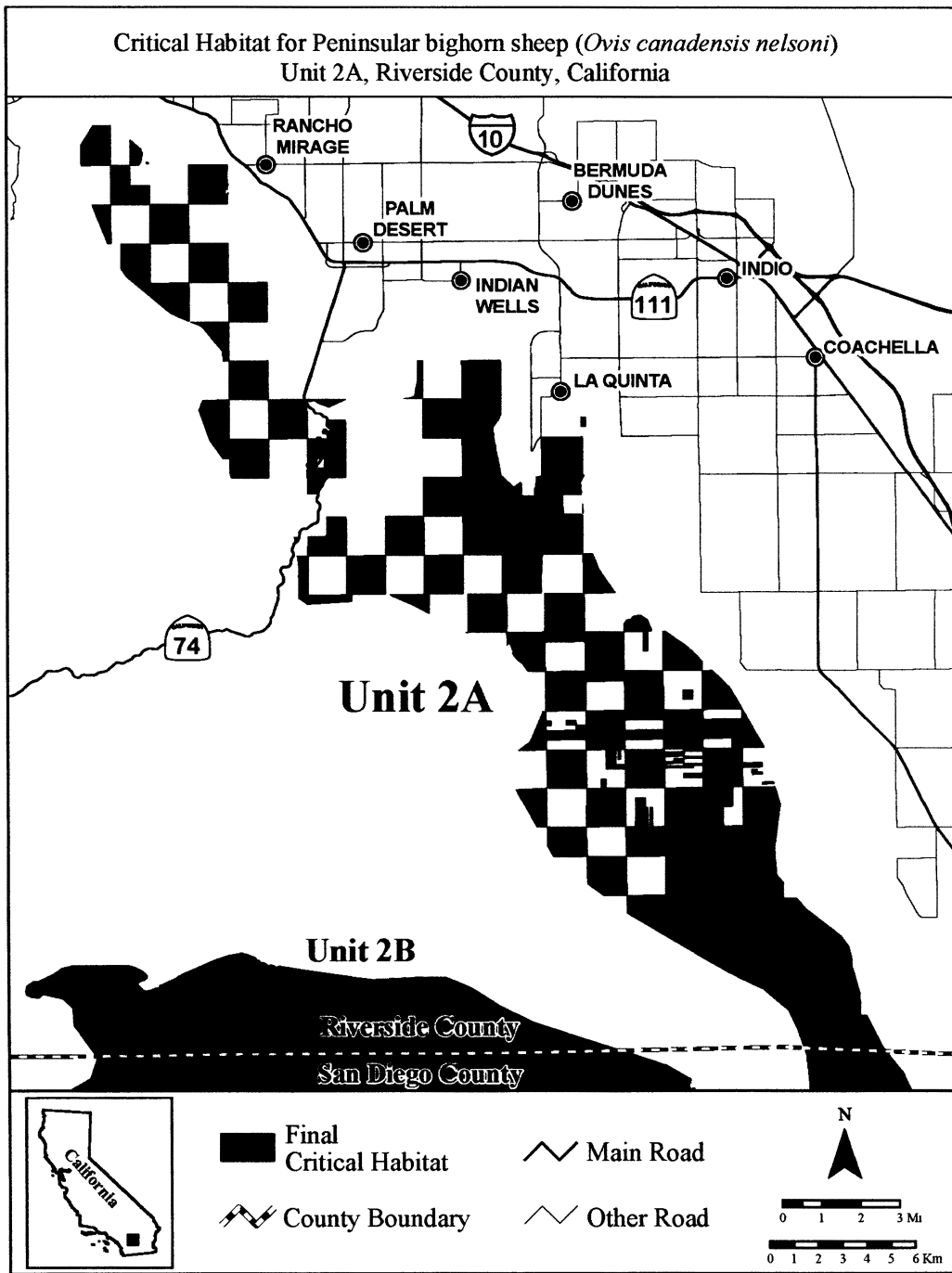
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(ii) *Note:* Map of Unit 2A, North Santa  
Rosa Mountains follows:

**BILLING CODE 4310-55-P**





(8) Unit 2B: South Santa Rosa Mountains south to Vallecito Mountains, Riverside, San Diego, and Imperial Counties, California.

(i) From USGS 1:24,000 quadrangles Agua Caliente Hot Springs, Arroyo Tapiado, Borrego Mountain, Borrego Mountain SE, Borrego Palm Canyon, Borrego Sink, Bucksnot Mountain, Carrizo Mountain NE, Clark Lake, Clark Lake NE, Collins Valley, Earthquake Valley, Fonts Point, Harper Canyon, Plaster City NW, Rabbit Peak, Seventeen Palms, Tubb Canyon, and Whale Peak. Land bounded by the following Universal Transverse Mercator (UTM) North American Datum of 1927 (NAD27) coordinates (E, N): 552772, 3702586; 552772, 3702567; 552801, 3702567; 552801, 3702539; 552829, 3702539; 552829, 3702511; 552914, 3702511; 552914, 3702482; 552943, 3702482; 552943, 3702454; 552971, 3702454; 552971, 3702426; 552999, 3702426; 552999, 3702397; 553113, 3702397; 553113, 3702369; 553170, 3702369; 553170, 3702340; 553198, 3702340; 553198, 3702312; 553255, 3702312; 553311, 3702284; 553311, 3702255; 553340, 3702255; 553340, 3702284; 553368, 3702284; 553368, 3702312; 553453, 3702312; 553453, 3702284; 553538, 3702284; 553538, 3702255; 553567, 3702255; 553567, 3702227; 553624, 3702227; 553624, 3702199; 553652, 3702199; 553652, 3702227; 553709, 3702227; 553709, 3702255; 553717, 3702255; 554616, 3702119; 556163, 3701891; 557619, 3701709; 559531, 3701800; 560669, 3701800; 561670, 3701390; 562899, 3700617; 564310, 3699934; 569738, 3698190; 570758, 3697602; 570758, 3697546; 570730, 3697546; 570730, 3697433; 570702, 3697433; 570702, 3697404; 570673, 3697262; 570702, 3697262; 570702, 3697206; 570730, 3697206; 570730, 3697177; 570787, 3697177; 570787, 3697206; 570815, 3697206; 570815, 3697234; 570900, 3697234; 570900, 3697177; 570929, 3697177; 570957, 3697149; 570957, 3697121; 571014, 3697121; 571014, 3697092; 571042, 3697092; 571042, 3697064; 571014, 3697064; 571014, 3697036; 570985, 3697036; 570985, 3696950; 570957, 3696950; 570957, 3696894; 571212, 3696894; 571212, 3696865; 571382, 3696865; 571382, 3696752; 571411, 3696752; 571411, 3696667; 571382, 3696667; 571382, 3696553; 571411, 3696553; 571411, 3696525; 571468, 3696525; 571468, 3696497; 571496, 3696497; 571496, 3696440; 571468, 3696440; 571468, 3696326; 571439, 3696326; 571439, 3696270; 571496,

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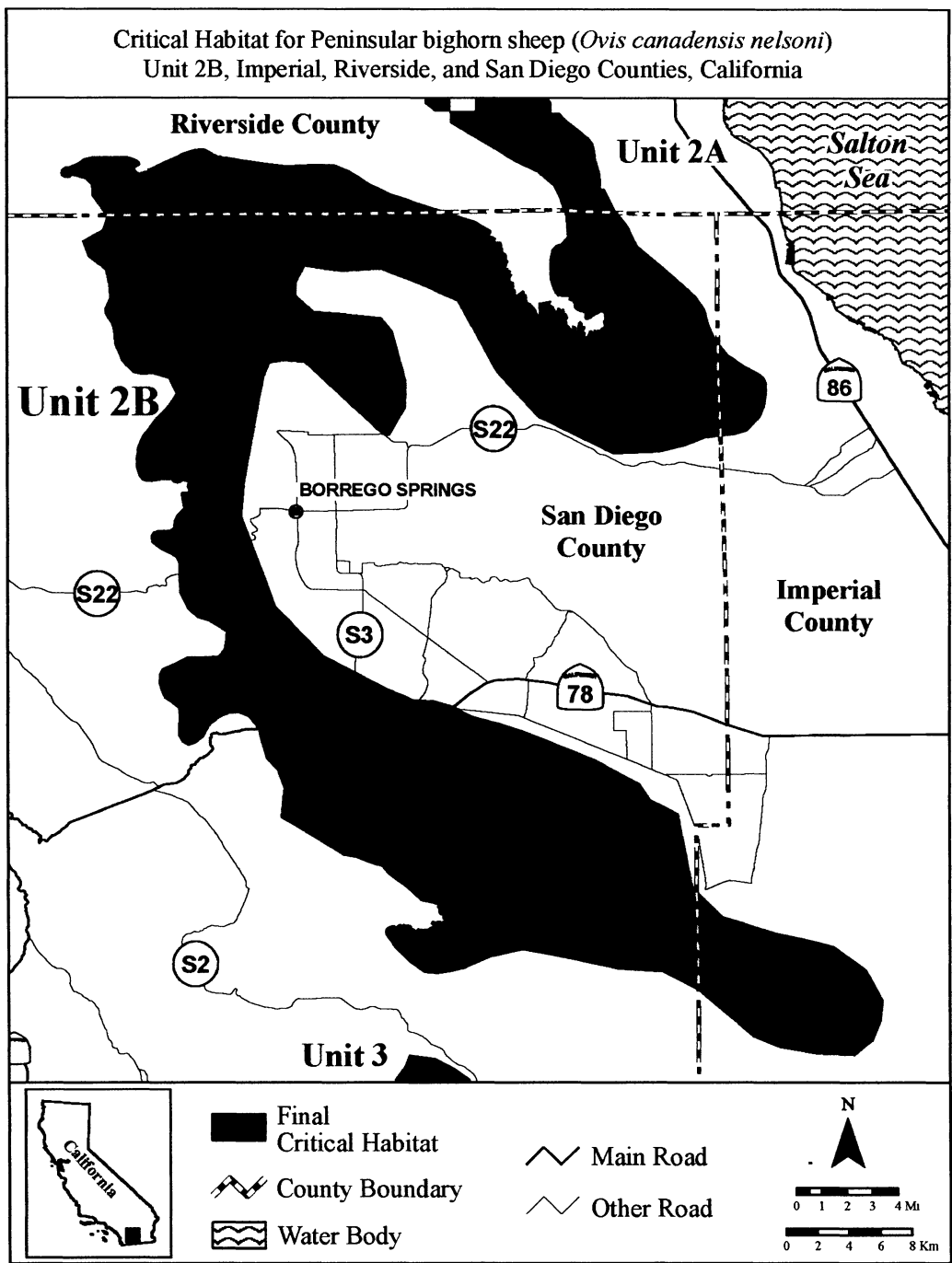
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 3702627; thence returning to 552772,  
 3702586.

(ii) Note: Map of Unit 2B, South Santa Rosa Mountains south to Vallecito Mountains follows:

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(9) Unit 3: Carrizo Canyon, San Diego and Imperial Counties, California.

(i) From USGS 1:24,000 quadrangles Agua Caliente Hot Springs, Arroyo Tapiado, Carrizo Mountain, In-Ko-Pah Gorge, Jacumba, Painted Gorge, Sombrero Peak, and Sweeney Pass.

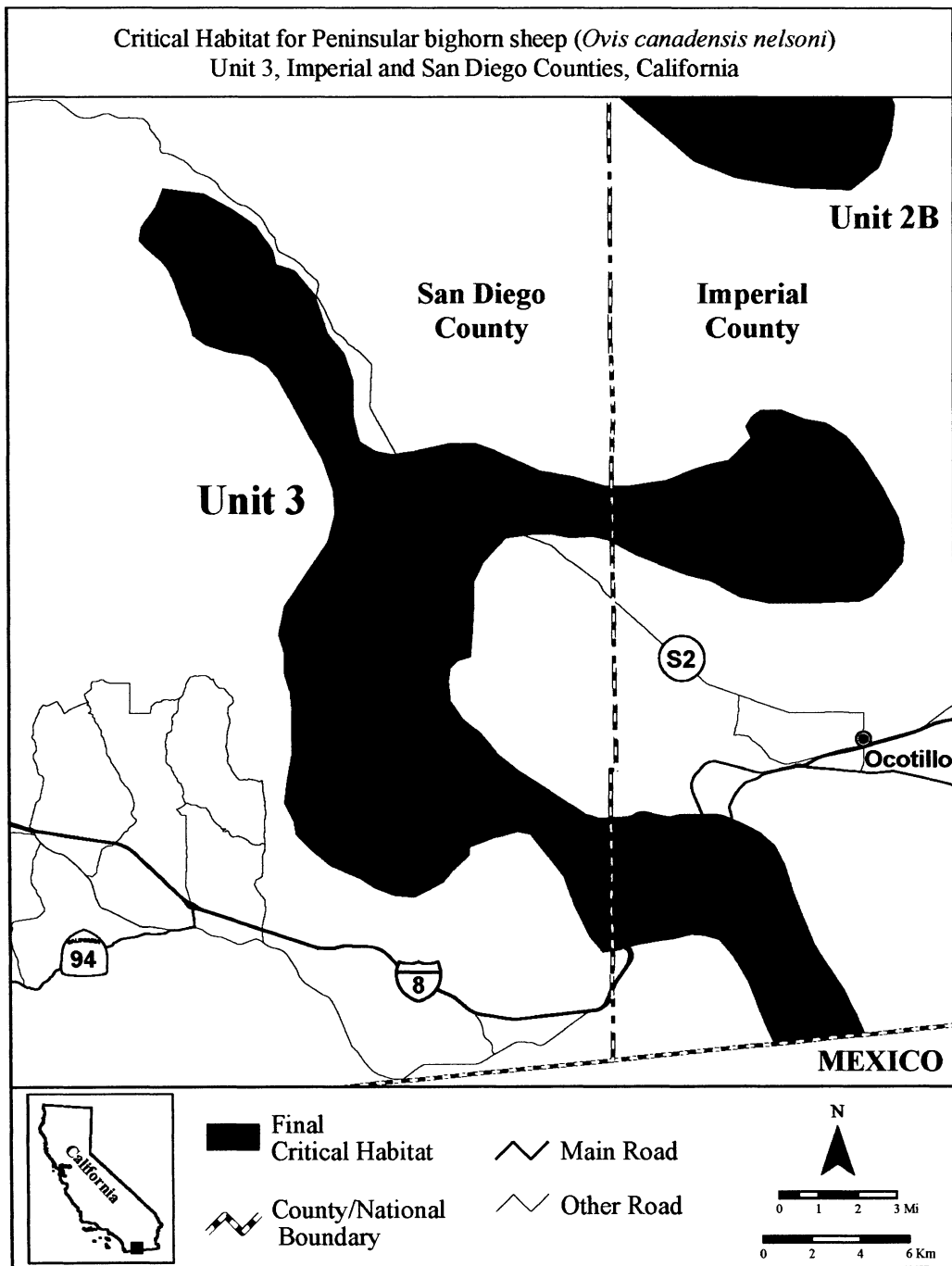
Land bounded by the following Universal Transverse Mercator (UTM) North American Datum of 1927

(NAD27) coordinates (E, N): 574159, 3634261; 574922, 3634108; 575915, 3634261; 577290, 3634566; 578359, 3634566; 579199, 3634261; 580039, 3633879; 581032, 3633421; 582406, 3633192; 583705, 3632810; 584697, 3632810; 586225, 3633039; 587370, 3633497; 588134, 3633726; 588821, 3633879; 589738, 3634795; 589508, 3635253; 589738, 3635635; 590119, 3635941; 590959, 3635941; 591952, 3635559; 592792, 3635406; 593632, 3634871; 594320, 3634031; 595083, 3632810; 595771, 3631511; 596000, 3630519; 595923, 3629679; 595312, 3628915; 594702, 3628304; 594167, 3628075; 592411, 3627998; 591189,

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(ii) Note: Map of Unit 3, Carrizo Canyon follows:



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Dated: March 31, 2009.

**Will Shafroth,**

*Deputy Assistant Secretary for Fish and Wildlife and Parks.*

[FR Doc. E9-7767 Filed 4-13-09; 8:45 am]

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