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50 CFR Part 17

**Endangered and Threatened Wildlife and
Plants; Final Determination of Critical
Habitat for Peninsular Bighorn Sheep;
Final Rule**

DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17****RIN 1018-AG17****Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for Peninsular Bighorn Sheep**

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for Peninsular bighorn sheep pursuant to the Endangered Species Act of 1973, as amended (Act). A total of approximately 341,919 hectares (844,897 acres) in Riverside, San Diego, and Imperial counties, California, are designated as critical habitat for Peninsular bighorn sheep.

Critical habitat identifies specific areas that have the physical and biological features that are essential to the conservation of a listed species, and that may require special management considerations or protection. The primary constituent elements for the Peninsular bighorn sheep are those habitat components that are essential for the primary biological needs of feeding, sheltering, reproduction, dispersal, and genetic exchange. All areas designated as critical habitat for the Peninsular bighorn sheep contain one or more of the primary constituent elements.

Section 7 of the Act prohibits destruction or adverse modification of critical habitat by any activity funded, authorized, or carried out by any Federal agency. Section 4 of the Act requires us to consider economic and other impacts of specifying any particular area as critical habitat. We solicited data and comments from the public on all aspects of the proposed rule and economic analysis.

DATES: This rule will be effective March 5, 2001.

ADDRESSES: Comments and materials received, as well as supporting documentation used in the preparation of this final rule, will be available for public inspection, by appointment, during normal business hours at the Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2730 Loker Avenue West, Carlsbad, California 92008.

FOR FURTHER INFORMATION CONTACT: Field Supervisor, Carlsbad Fish and Wildlife Office, at the above address

(telephone: 760/431-9440; facsimile 760/431-9624).

SUPPLEMENTARY INFORMATION:**Background**

The bighorn sheep (*Ovis canadensis*) is a large mammal (family Bovidae) originally described by Shaw in 1804 (Wilson and Reeder 1993). Wild sheep became established in North America after crossing the Bering land bridge from Eurasia during the late Pleistocene (Geist 1971), and their range has since spread to include desert habitats as far south as northern Mexico (Manville 1980). In North America, two species of wild sheep currently are recognized: the thinhorn sheep (*Ovis dalli*) and the bighorn sheep (*Ovis canadensis*).

Bighorn sheep were once divided into seven recognized subspecies based on differences in skull measurements (Cowan 1940; Buechner 1960; Shackleton 1985). These subspecies included Audubon bighorn sheep (*Ovis canadensis auduboni*), Peninsular bighorn sheep (*O. c. cremnobates*), Nelson bighorn sheep (*O. c. nelsoni*), Mexican bighorn sheep (*O. c. mexicana*), Weems bighorn sheep (*O. c. weemsi*), California bighorn sheep (*O. c. californiana*), and Rocky Mountain bighorn sheep (*O. c. canadensis*). Audubon bighorn sheep are now extinct. As described below, bighorn sheep taxonomy has since been revised.

The term "desert bighorn" is used to describe bighorn sheep that inhabit dry and relatively barren desert environments and typically includes bighorn sheep subspecies that have, to date, been classified as *Ovis canadensis nelsoni*, *O. c. mexicana*, *O. c. cremnobates*, and *O. c. weemsi* (Manville 1980). The validity of these subspecies delineations has been questioned and reassessed. Based on morphometric and genetic analyses, Wehausen and Ramey (1993) synonymized Peninsular bighorn with the subspecies *nelsoni*, which is the current taxonomy.

In the Peninsular Mountain Ranges, bighorn sheep are found from the San Jacinto Mountains of southern California south into the Volcan Tres Virgenes Mountains near Santa Rosalia, Baja California, Mexico, a total distance of approximately 800 kilometers (km) (500 miles (mi)). The area occupied by the distinct vertebrate population segment covered herein coincides with the range of the former subspecies *Ovis canadensis cremnobates* in California. The California Fish and Game Commission listed *O. c. cremnobates* as "rare" in 1971. The designation was changed to "threatened" by the California Department of Fish and Game

(CDFG) to conform with terminology of the amended California Endangered Species Act.

The Peninsular bighorn sheep is similar in appearance to other desert bighorn sheep. The coat is pale brown, and the permanent horns, which become rough and scarred with age, vary in color from yellowish-brown to dark brown. The horns are massive and coiled in males; in females, they are smaller and not coiled. In comparison to other desert bighorn sheep, the Peninsular bighorn sheep is generally described as having paler coloration and having horns with very heavy bases (Cowan 1940).

Peninsular bighorn sheep occur on steep, open slopes, canyons, and washes in hot and dry desert regions where the land is rough, rocky, and sparsely vegetated. Most of these sheep live between 91 and 1,219 meters (m) (300 and 4,000 feet (ft)) in elevation, where average annual precipitation is less than 10 centimeters (cm) (4 inches (in)) and daily high temperatures average 104° Fahrenheit in the summer. Caves and other forms of shelter (e.g., rock outcrops) are used during inclement weather and for shade during the hotter months. Lambing areas are associated with ridge benches or canyon rims adjacent to steep slopes or escarpments. Alluvial fans (sloping deposits of gravel, sand, clay, and other sediments that spread fan-like at the base of canyons and washes) are also used for breeding, feeding, and movement.

Peninsular bighorn sheep use a wide variety of plant species as their food source (Turner 1976; Scott 1986). Cunningham (1982) determined that the bighorn sheep diet in Carrizo Canyon (at the south end of the U.S. Peninsular Ranges) consisted of 57 percent shrubs, 32 percent herbaceous annuals and perennials, 8 percent cacti, and 2 percent grasses. Scott (1986) and Turner (1976) reported similar diet compositions at the north end of the range. Diet composition varied among seasons (Cunningham 1982; Scott 1986), presumably because of variability in forage availability, selection of specific plant species during different times of the year (Scott 1986), and seasonal movements of bighorn sheep. As discussed in the approved Recovery Plan (Service 2000), the high metabolic demands of ewes during pregnancy and lactation require the seasonal availability of high protein forage sources such as found on the deeper, more productive soils of alluvial fans and canyon bottoms.

Peninsular bighorn sheep typically produce only one lamb per year. In the Peninsular Ranges, ewes estimated to be

between 2 and 16 years of age have been documented to produce lambs (Ostermann *et al.* in press; Rubin *et al.* 2000). Lambs are born after a gestation of approximately 174 days (Shackleton *et al.* 1984). Lambing occurs from January through August (Service 1999); however, most lambs are born between February and April (Rubin *et al.* 2000). Ewes and lambs frequently occupy steep terrain that provides escape cover and shelter from excessive heat; they tend to congregate near dependable water sources during the summer. Lambs are able to eat native forage within 2 weeks of their birth and are weaned between 4 and 6 months of age.

Bighorn ewes exhibit a high degree of site fidelity to their home range, and this behavior is learned by their offspring (Geist 1971). Ewes that share portions of a range, referred to as "ewe groups" in this rule, are likely to be more closely related to each other than they are to other ewes (Festa-Bianchet 1991; Boyce *et al.* 1999). However, bighorn ewes occasionally move well beyond their traditional home ranges (Rubin *et al.* 1998), and may even between mountain ranges (Bleich *et al.* 1990, 1996). By following older animals, young bighorn sheep gather knowledge regarding escape terrain, migration routes, water sources, and lambing habitat (Geist 1971). Rams do not show the same level of site fidelity and tend to range more widely, often moving among ewe groups and mountain ranges. As young rams reach 2 to 4 years of age, they follow older rams away from their birth group during the fall breeding period, or rut, and may rejoin ewe groups following the fall breeding (Geist 1971; Festa-Bianchet 1991).

From May through October, permanent water sources greatly enhance the ability of Peninsular bighorn sheep to survive high temperatures, and their distribution is typically more localized. Bighorn sheep populations aggregate during this period due to a combination of breeding activities and diminishing water sources. Summer concentration areas are associated primarily with dependable water sources, and ideally provide a diversity of vegetation to meet the forage requirements of bighorn sheep. Once rains arrive in the fall, desert bighorn sheep typically expand or shift their home ranges to include areas farther from water sources (McQuivey 1978; Leslie and Douglas 1979; Krausman *et al.* 1989). These home range expansions may allow the heavily used forage around permanent water sources a chance to recover.

Bighorn sheep are primarily diurnal (Krausman *et al.* 1985) but may be active

at any time of day or night (Miller *et al.* 1984). Their daily activity pattern includes feeding and resting periods. As bighorn sheep rely on vigilance to detect predators, they benefit from gregariousness and group alertness (Geist 1971; Berger 1978). Within each ewe group, ewes appear to associate with other ewes based on their availability rather than on their matrilineal (descent through the mother) relationships (Festa-Bianchet 1991; Boyce *et al.* 1999). These subgroups are dynamic, that is, they may split, reform, or change membership on a daily or hourly basis as animals move through their home ranges.

The decline of the Peninsular bighorn sheep is attributed to a combination of factors, including: (1) the effects of disease and parasitism (Buechner 1960; DeForge and Scott 1982; DeForge *et al.* 1982; Jessup 1985; Wehausen *et al.* 1987; Elliott *et al.* 1994); (2) low lamb recruitment (DeForge *et al.* 1982; Wehausen *et al.* 1987; DeForge *et al.* 1995); (3) habitat loss, degradation, and fragmentation (Service 2000; Rubin *et al.* 1998); and (4) predation (DeForge *et al.* 1997; Hayes *et al.* 2000).

Disease has been identified as one of the factors responsible for population declines in the Peninsular Ranges and elsewhere. Analysis of exposure to disease-causing agents between 1978 and 1990 showed that Peninsular bighorn sheep populations and surrounding populations in southern California have higher levels of pathogen exposure than other populations of bighorn sheep in the State (Elliott *et al.* 1994). However, tests of exposure to pathogens have revealed the presence of antibodies to several infectious disease agents in healthy as well as in clinically ill animals (Clark *et al.* 1993; Elliott *et al.* 1994; DeForge *et al.* 1997), and essentially all of the viruses, bacteria, and parasites that have been reported extant in Peninsular bighorn sheep appear to be widespread among desert bighorn sheep in the western United States (Jessup *et al.* 1990). All evidence indicates that the influence of disease in the Peninsular Ranges has subsided in more recent years. For example, examinations of bighorn sheep throughout the range indicate that most animals are clinically normal (DeForge *et al.* 1997; Borjesson *et al.* 2000). The reduced influence of disease on Peninsular bighorn sheep (at the same time they are in decline) suggests that other factors, such as predation, habitat loss and modification, and human-related disturbance, currently limit the population.

In the Peninsular Ranges, a growing human population and increased

activity adjacent to and within bighorn sheep habitat are adversely affecting bighorn sheep by altering their normal behavior, which has evolved in the absence of excessive human disturbance. Human development impacts sheep through habitat loss, fragmentation, or other modifications. At least 7,490 hectares (ha) (18,500 acres (ac) or about 30 square miles) of suitable habitat has been lost to urbanization and agriculture along the urban interface between Palm Springs and La Quinta (Service 2000). Much of the lost habitat consisted of low elevation alluvial fans and washes that furnished important sources of nutrients to ewes while they were rearing their lambs. Moreover, in the northern Santa Rosa Mountains, from 1991 to 1996, thirty-four percent of adult mortalities appear to have been directly caused by urbanization. Five bighorn sheep were killed by cars; 5 bighorns died from feeding on toxic, non-native ornamental plants; and 1 was strangled in a wire fence (DeForge and Ostermann 1997).

Impacts also extend into bighorn sheep habitat beyond the urban edge. These may include increased noise and lighting, an increased number of humans and their pets venturing into sheep habitat, and potentially an increase in some predators, such as coyotes, along the wildland/urban interface. Numerous researchers have expressed concern over the impact human activity has on bighorn sheep (*e.g.*, Light and Weaver 1973; Jorgensen and Turner 1973; Hicks 1978; Olech 1979; Graham 1980; Cunningham 1982; DeForge and Scott 1982; Gross 1987; Smith and Krausman 1988; Sanchez *et al.* 1988; Krausman *et al.* in prep.). Although cases have been cited in which bighorn sheep populations did not appear to be negatively impacted by human activity (*e.g.*, Hicks and Elder 1979; Hamilton *et al.* 1982), numerous researchers, including the previous authors, have documented altered bighorn sheep behavior in response to human-related disturbance. Bighorn sheep avoided using areas while humans were present. In addition to development, a variety of other human activities, such as hiking, mountain biking, horseback riding, camping, hunting, livestock grazing, and use of aircraft and off-road vehicles, have the potential to disrupt normal bighorn sheep social behaviors. Bighorn sheep may also alter their use of essential resources resulting in negative physiological effects or they may abandon traditional habitat as a result of human disturbance (McQuivey 1978; MacArthur *et al.* 1979; Olech 1979;

Leslie and Douglas 1980; Graham 1980; MacArthur *et al.* 1982; Bates and Workman 1983; Miller and Smith 1985; Krausman and Leopold 1986; Krausman *et al.* 1989; Papouchis *et al.* 1999). Desert bighorn sheep populations next to rapidly growing urban areas in Arizona and New Mexico gradually declined to extinction, or nearly so (Krausman *et al.* in prep.). Disease and predation did not appear to be responsible for the extinctions.

However, greatly increased numbers of humans entering bighorn sheep habitat, a loss of low elevation habitat to urbanization, and loss of additional habitat due to fire suppression coincided with the declines (Krausman *et al.* in prep.). Fire suppression caused habitat loss because bighorn sheep quit using areas when vegetation became too dense. In the northern part of their range, specifically the Santa Rosa and San Jacinto Mountains, Peninsular bighorn sheep currently face a situation similar to those described above. Housing developments, golf courses, and urban areas have been built within or immediately adjacent to bighorn sheep habitat, and recreational use of bighorn sheep habitat is increasing.

Mountain lion predation was an apparent limiting factor to some ewe groups in the Peninsular Ranges (Hayes *et al.* 2000). Previously, incidents of lion predation were not common, and predation was not considered to regulate or limit Peninsular bighorn sheep populations (Weaver and Mensch 1970; Jorgensen and Turner 1975; Cunningham 1982). However, the increase in the number of radio-collared bighorn sheep since 1993 may have increased the detection of such mortalities. Bighorn sheep have lived with predators for thousands of years; and larger, healthier bighorn sheep populations would have normally absorbed predation losses. However, a combination of other mortality factors, such as disease, urbanization, and habitat loss, may have decreased the population to such low levels that predation became an important mortality factor, possibly preventing the population from recovering (Caughley and Sinclair 1994). Predation by other species, such as coyotes and bobcats, could reduce lamb recruitment; however, the impact of these predators is not well understood.

The Peninsular bighorn sheep in the United States declined from an estimated 1,171 individuals in 1971 to about 570 individuals in 1991 (Bleich *et al.* 1992). A rangewide census in October, 2000 estimated a population of approximately 400 in about eight ewe

groups in the wild in the United States (Steve Torres, CDFG, pers. comm. 2000).

There are also two captive populations of Peninsular bighorn sheep. The Living Desert Museum, an educational and zoo facility in Palm Desert, California, maintains a small group (seven adult females and two adult males) that is not used to augment wild populations. The Bighorn Institute, also in Palm Desert, maintains a small captive herd of approximately 15 to 20 animals. This private, nonprofit organization, established in 1982 through a Memorandum of Understanding with the CDFG, conducts research and maintains a breeding herd at its facility. Since 1985, seventy-nine animals from this herd have been released into the wild. Releases have occurred in the northern Santa Rosa Mountains (76 releases from 1985 to 2000) and in the San Jacinto Mountains (3 during 1997; Ostermann *et al.*, in press).

Essential habitat for the Peninsular bighorn sheep in the United States is managed by the California Department of Parks and Recreation (167,839 ha (414,739 ac) or 49 percent); CDFG (10,009 ha (24,732 ac) or 3 percent), Bureau of Land Management (BLM) (91,470 ha (226,026 ac) or 27 percent), private landowners (53,285 ha (131,670 ac) or 16 percent), Trust (Tribal and allotted lands) (7,359 ha (18,184 ac) or 2 percent), U.S. Forest Service (Forest Service) (7,277 ha (17,982 ac) or 2 percent), and other State and local entities (4,680 ha (11,564 ac) or 1 percent).

The Santa Rosa Mountains National Monument (Monument) was designated in October 2000. The Monument includes approximately 110,075 ha (272,000 ac) in the Santa Rosa and San Jacinto Mountains. Private land within the Monument may be purchased from willing sellers, and Federal public lands will be jointly managed by the BLM and Forest Service. Approximately 76,657 ha (189,423 ac) of Peninsular bighorn sheep critical habitat are within the Monument boundary.

Previous Federal Action

Bighorn sheep occupying the Peninsular Ranges of southern California were listed as endangered on March 18, 1998; a complete discussion of the history of Federal actions prior to listing can be found in the final rule (63 FR 13134). At the time of the listing, we concluded that designation of critical habitat was not prudent. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The

identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species. We concluded that critical habitat designation for the Peninsular bighorn sheep was not prudent because both of the described situations existed. We were concerned that publishing detailed maps of bighorn habitat would encourage human disturbance in sensitive areas, such as lambing habitat, rutting areas, and water sources, and result in increased disruption of bighorn sheep. We cited the rapidly growing human population in the Coachella Valley and the increasing recreational interest within bighorn habitat. We also concluded that designation of critical habitat did not add an additional regulatory benefit to bighorn sheep due to the limited Federal regulatory jurisdiction, through section 7 of the Act, for the majority of habitat necessary for conservation of the species. Therefore, we concluded that designation of critical habitat could increase the degree of threats to the species and would not provide any additional protection beyond existing regulatory mechanisms.

On December 18, 1998, the Southwest Center for Biological Diversity (Center) and Desert Survivors filed a complaint against the Service alleging that our "not prudent" finding was unsubstantiated. On September 17, 1999, we entered into a Settlement Agreement with the Center and Desert Survivors that stipulated a schedule for reviewing our prudency determination and publishing a Recovery Plan for Peninsular bighorn sheep. The schedule included the following dates—draft Recovery Plan, December 31, 1999; new proposed critical habitat determination, June 30, 2000; final Recovery Plan, October 31, 2000; and final determination of critical habitat as not prudent, September 30, 2000, or final critical habitat, by December 31, 2000. The latter deadline was extended to January 15, 2001 by agreement with the plaintiffs. On December 31, 1999, we published the draft Recovery Plan for the Bighorn Sheep in the Peninsular Ranges (Service 1999). On July 5, 2000, we published a proposed critical habitat determination (65 FR 41405), and on October 31, 2000, the approved Recovery Plan for Bighorn Sheep in the Peninsular Ranges, California, was published.

As required by the Settlement Agreement, we reconsidered our previous prudency determination regarding the threats posed by a potential increase in disturbance at especially sensitive bighorn use areas,

such as lambing areas, resulting from critical habitat designation. As discussed in the proposal to designate critical habitat for the Peninsular bighorn sheep (65 FR 41405), we have now determined that such threats are not sufficient to preclude the designation of critical habitat for the following reasons: (1) Peninsular bighorn sheep distribution and persistence is not solely dependent on isolated habitat features, but requires many essential resources spread across the greater landscape that allows the species to adapt to natural and unnatural environmental processes (McCutchen 1981; Krausman *et al.* 1989; Miller and Gaud 1989); (2) though bighorn sheep ewes typically exhibit a high degree of site fidelity to their immediate home range, rams travel widely across desert valleys and mountain ranges (Bleich *et al.* 1990, 1996) and their long-term distributions change in response to a dynamic environment (McQuivey 1978; Leslie and Douglas 1979; Krausman *et al.* 1989); and, (3) bighorn sheep in the Peninsular Ranges consist of a series of interconnected subpopulations (termed a metapopulation by Levins (1970)) that exchange individuals and/or genetic material (Rubin *et al.* 1998; Bleich *et al.* 1990, 1996). The interchange of individuals within this metapopulation can prevent otherwise isolated subpopulations from going extinct and enhance the genetic fitness and demographic augmentation of subpopulations. As in any metapopulation, habitat destruction and fragmentation can impede movement, thereby degrading the ability of the subpopulations to interact and persist (Ough and DeVos 1984; Bleich *et al.* 1990, 1996; Boyce *et al.* 1997; Rubin *et al.* 1998; Boyce *et al.* 1999). This is particularly true for large mammals that range widely to locate and exploit unpredictably changing sources of food, water, and shelter (Krausman *et al.* 1989; Miller and Gaud 1989; Longshore and Douglas 1995). Accordingly, we have used an ecosystem approach (Armentrout and Boyd 1995; Douglas and Leslie 1999) to delineate critical habitat that includes all of the essential habitat components needed for recovery of bighorn sheep metapopulation in the Peninsular Ranges.

Furthermore, we determined that the limited section 7 nexus for the majority of Peninsular bighorn habitat, as discussed in the final listing rule, was not, by itself, an adequate basis for making a "not prudent" finding. Designation of critical habitat will also provide some educational benefit by

identifying the range-wide habitat essential to the conservation of bighorn sheep in the Peninsular Ranges, and help provide a focus for interagency recovery efforts. Therefore, we now conclude that the benefits of designating critical habitat outweigh the potential negative impacts.

On July 5, 2000, we published a proposed determination for the designation of critical habitat for Peninsular bighorn sheep (65 FR 41405). A total of approximately 354,343 ha (875,613 ac) was proposed as critical habitat for bighorn sheep in Riverside, San Diego, and Imperial counties, California. The comment period was open until August 31, 2000. During this comment period, a public hearing was held on July 20, 2000, in Palm Springs, Riverside County. On October 19, 2000, we published a notice (65 FR 62691) announcing the reopening of the comment period on the proposal to designate critical habitat for bighorn sheep and a notice of availability of the draft economic analysis on the proposed determination. The comment period was open until November 20, 2000.

Critical Habitat

Critical habitat is defined in section 3 of the Act as—(I) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic 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" means the use of all methods and procedures that are necessary to bring an endangered or a threatened species to the point at which listing under the Act is no longer necessary.

Critical habitat receives protection under section 7 of the Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. Section 7 also requires consultation on Federal actions that are likely to result in the destruction or adverse modification of critical habitat. In our regulations at 50 CFR 402.02, we define destruction or adverse modification as " * * * the direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations

adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." Aside from the added protection that may be provided under section 7, the Act does not provide other forms of protection to lands designated as critical habitat. Because consultation under section 7 of the Act does not apply to activities on private or other non-Federal lands that do not involve a Federal nexus, critical habitat designation would not afford any additional protections under the Act against such activities.

To be included in a critical habitat designation, the habitat must first be "essential to the conservation of the species." Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas that provide essential life cycle needs of the species (i.e., areas on which are found the primary constituent elements, as defined at 50 CFR 424.12(b)).

Section 4 requires that we designate critical habitat at the time of listing and based on what we know at the time of the designation. When we designate critical habitat at the time of listing or under short court-ordered deadlines, we will often not have sufficient information to identify all areas of critical habitat. We are required, nevertheless, to make a decision and thus, must base our designations on what, at the time of designation, we know to be critical habitat.

Within the geographic area occupied by the species, we will designate only areas currently known to be essential. Essential areas should already have the features and habitat characteristics that are necessary to sustain the species. We will not speculate about what areas might be found to be essential if better information became available, or what areas may become essential over time. If the information available at the time of designation does not show that an area provides essential life cycle needs of the species, then the area should not be included in the critical habitat designation. Within the geographic area occupied by the species, we will not designate areas that do not now have the primary constituent elements, as defined at 50 CFR 424.12(b), that provide essential life cycle needs of the species.

Our regulations state that, "The Secretary shall designate as critical habitat areas outside the geographic area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species." (50 CFR 424.12(e)). Accordingly, when

the best available scientific and commercial data do not demonstrate that the conservation needs of the species require designation of critical habitat outside of occupied areas, we will not designate critical habitat in areas outside the geographic area occupied by the species.

Our Policy on Information Standards Under the Endangered Species Act, published in the **Federal Register** on July 1, 1994 (Vol. 59, p. 34271), provides criteria, establishes procedures, and provides guidance to ensure that decisions made by the Service represent the best scientific and commercial data available. It requires Service biologists, to the extent consistent with the Act and with the use of the best scientific and commercial data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, a primary source of information should be the listing package for the species. Additional information may be obtained from a recovery plan, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, 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 may eventually be determined to be necessary for the recovery of the species. For these reasons, all should understand that critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1), and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard and the section 9 take prohibition, as determined on the basis of the best available information at the time of the action. We specifically anticipate that federally funded or assisted 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, or other species conservation planning efforts if new information

available to these planning efforts calls for a different outcome.

Methods

In identifying areas that are essential to conserve the Peninsular bighorn sheep, we used the best scientific and commercial data available. This included data from research and survey observations published in peer-reviewed articles; recovery criteria, habitat analyses, and other information in the approved Recovery Plan (Service 2000); discussions with, and data made available through, the Peninsular Bighorn Sheep Recovery Team and the Coachella Valley Multiple Species Habitat Conservation Plan program; meetings with the County of Riverside, the cities of Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, and La Quinta, and private landowners; and regional Geographic Information System (GIS) coverages. Further, information provided in comments on the proposed designation and draft economic analysis were evaluated and taken into consideration in the development of this final designation.

Primary Constituent Elements

In accordance with section 3(5)(A)(I) of the Act and regulations at 50 CFR 424.12, in determining which areas to designate as critical habitat, we are required to consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species. These include, but are not limited to, space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction and rearing of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distribution of a species.

The areas designated as critical habitat are designed to maintain the metapopulation of bighorn sheep in the Peninsular Ranges, and provide some or all of those habitat components essential for the biological needs of feeding, resting, reproduction and population recruitment, isolation from detrimental human disturbance, as well as dispersal and connectivity between ewe groups. The primary biological and physical constituent elements that are essential to the conservation of Peninsular bighorn sheep include space for the normal behavior of groups and individuals; protection from disturbance; availability of the various native desert plant communities found on different topographic slopes, aspects,

and landforms, such as steep slopes, rolling foothills, alluvial fans, and canyon bottoms; a range of habitats that provide forage, especially during periods of drought; steep, remote habitat for lambing, rearing of young, and escape from disturbance and/or predation; water sources; suitable linkages allowing individual bighorn to move freely between ewe groups, and maintain connections between subpopulations within the Peninsular Range metapopulation; and other essential habitat components to accommodate population expansion to a recovery level. Given the importance and magnitude of the threats to the habitat of this species discussed above, we believe that these areas may require special management considerations or protection.

Criteria Used To Identify Critical Habitat

The criteria for delineating Peninsular bighorn habitat were based on biological information in pertinent literature (*e.g.*, the approved Recovery Plan) and the expert opinion of those most familiar with bighorn sheep in the Peninsular Ranges (*i.e.*, the Recovery Team). The upper elevation boundary was largely determined by relatively dense chaparral and pine-juniper vegetation communities. Bighorn sheep require open terrain to detect and avoid predators, such as mountain lions, and they generally will not frequent dense vegetation.

The lower elevation boundary was determined by the topography, existing urbanization, and bighorn sheep foraging behavior and movement patterns. Along the eastern boundary, habitat within 0.8 km (0.5 mi) of slopes greater than or equal to 20 percent were included in the delineated critical habitat. Researchers have documented bighorn sheep descending from steeper habitat and venturing out upon alluvial fans and washes to acquire the nutritious forage found on these more gentle slopes. Following the delineation of essential habitat, over 22,000 past observations of bighorn sheep were plotted, and the distribution of these observations were compared to the essential habitat boundary to insure that only those areas needed for the recovery of bighorn sheep were included in essential habitat. The similarity of the Recovery Plan definition of essential habitat, and the statutory definition of critical habitat, indicated that the two habitat delineation processes should be coordinated to improve scientific rigor and minimize the potential for legal and biological conflicts.

We used a quarter-section grid based on the Public Land Survey to delineate critical habitat in the proposed rule. A small area of San Diego County within the Valle de San Felipe Land Grant was defined using Universal Transverse Mercator (UTM) coordinates. In response to public comments, we have redelineated critical habitat along the urban edge from Palm Springs to La Quinta using a finer scale of resolution, a 100-meter UTM grid.

In defining critical habitat boundaries, we made an effort to avoid developed areas, such as towns and other similar lands, which do not provide primary constituent elements. Though the minimum mapping unit we used to designate critical habitat does not exclude all developed areas, such as scattered residential housing in sparsely inhabited regions, our 100-meter UTM grid minimum mapping unit was designed to minimize the amount of commercial development along the urban edge. Road and railroad rights-of-way, flood control facilities, or other facilities that must be traversed by bighorn sheep to maintain connectivity between subpopulations, or otherwise may provide food, water, or cover for Peninsular bighorn sheep, are considered to support primary

constituent elements, and therefore are included as critical habitat.

We excluded habitat that is not considered essential to bighorn conservation from the critical habitat boundary. This includes areas such as those that were historically used for migration between other mountain ranges but have since been eliminated due to urban and agriculture development. While bighorn are regularly documented to use areas outside of critical habitat, these areas are considered to be non-essential, for a variety of reasons, including fragmentation and/or proximity to development, non-native vegetation, human-caused hazardous conditions, and not necessary for population movement and individual dispersal within the range of the metapopulation.

Maintaining connectivity between ewe groups is a necessary component for continued viability of metapopulations (Bleich *et al.* 1990, 1996) and to achieve population recovery of bighorn sheep in the Peninsular Ranges (Service 2000). Furthermore, because the environment is dynamic, resources, such as forage, are not distributed evenly across the landscape, and their spatial distribution, abundance and nutritional quality

change over time. Consequently, bighorn sheep need to also adjust their distributions to meet their nutritional needs. Bighorn sheep may range widely within home ranges or may even shift home ranges to find areas with a suitable combination of food, water, and security (Leslie and Douglas 1979). These periodic shifts are important because they allow forage plants an opportunity to regrow and recover from herbivory by bighorn sheep. Given their wide-ranging capabilities, fluctuating habitat requirements, and dynamic habitat conditions, we are not aware of any information suggesting that particular areas within designated critical habitat are currently unsuitable or unused over the generational time-frame needed for the long-term conservation of bighorn sheep in the Peninsular Ranges.

In summary, the critical habitat designated below constitutes our best assessment of areas needed for the species' survival and recovery.

Critical Habitat Designation

The approximate area of designated critical habitat by county and land ownership is shown in Table 1.

TABLE 1.—APPROXIMATE DESIGNATED CRITICAL HABITAT AREA (HECTARES (ACRES)) BY COUNTY AND LAND OWNERSHIP ¹

County	Federal ²	Trust (Tribal and allotted lands)	Local/State	Private	Total
Riverside	36,625 ha (90,501 ac)	5,672 ha (14,016 ac)	16,685 ha (41,231 ac)	27,877 ha (68,886 ac)	86,859 ha (214,634 ac)
San Diego	20,112 ha (49,699 ac)	0 ha (0 ac)	152,841 ha (377,677 ac)	16,245 ha (40,143 ac)	189,198 ha (467,519 ac)
Imperial	42,010 ha (103,808 ac)	1,687 ha (4,168 ac)	13,001 ha (32,126 ac)	9,163 ha (22,642 ha)	65,861 ha (162,744 ac)
Total	98,747 ha (244,008 ac)	7,359 ha (18,184 ac)	182,527 ha (451,034 ac)	53,285 ha (131,671 ac)	341,918 ha (844,897 ac)

¹ Approximate hectares have been converted to acres (1 ha = 2.47 ac). Based on the level of imprecision of mapping at this scale, approximate hectares have been rounded to the nearest hectare when applicable.

² Federal lands include BLM and Forest Service lands.

Designated critical habitat is located in Riverside, San Diego, and Imperial Counties, California, from the San Jacinto Mountains south to the U.S.-Mexican border, generally along the eastern escarpment of the Peninsular Ranges that steeply descends into the Sonoran Desert along the Coachella Valley, Anza-Borrego Desert, and Salton Trough. Critical habitat is designated typically within a narrow elevational band that ranges from the lower alluvial slopes and habitats along the base of the Peninsular Ranges upslope to approximately 5,000 feet in elevation,

which typically corresponds to a vegetational transition from Sonoran Desert plant communities to more coastally influenced chaparral habitats. This area generally includes the desert slopes of the San Jacinto Mountains, Santa Rosa Mountains, San Ysidro Mountains, Pinyon Mountains, Vallecitos Mountains, Fish Creek Mountains, Tierra Blanca Mountains, Sawtooth Mountains, In-Ko-Pah Mountains, Coyote Mountains, and Jacumba Mountains. Lands proposed are under private, local/State, Trust (Tribal and allotted lands), and Federal

ownership, with Federal lands including those lands managed by the BLM and Forest Service.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out do not destroy or adversely modify critical habitat to the extent that the action appreciably diminishes the value of the critical habitat for the survival and recovery of the species. Individuals, organizations,

States, local governments, and other non-Federal entities are affected by the designation of critical habitat only if their actions occur on Federal lands, require a Federal permit, license, or other authorization, or involve Federal funding.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is designated or proposed. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. Conference reports provide conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The conservation recommendations in a conference report are advisory. We may issue a formal conference report if requested by a Federal agency. Formal conference reports on proposed critical habitat contain a biological opinion that is prepared according to 50 CFR 402.14, as if critical habitat were designated. We may adopt the formal conference report as the biological opinion when the critical habitat is designated, if no significant new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)).

If a species is listed or critical habitat is designated, section 7(a)(2) requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Through this consultation, we ensure that the permitted actions do not destroy or adversely modify critical habitat.

When we issue a biological opinion concluding that a project is likely to result in the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. Reasonable and prudent alternatives are defined at 50 CFR 402.02 as alternative actions identified during consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and

jurisdiction, that are economically and technologically feasible, and that the Director believes would avoid destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where critical habitat is subsequently designated and the Federal agency has retained discretionary involvement or control over the action or such discretionary involvement or control is authorized by law. Consequently, some Federal agencies may request reinitiation of consultation or conferencing with us on actions for which formal consultation has been completed if those actions may affect designated critical habitat or adversely modify or destroy proposed critical habitat.

Activities on Federal lands that may affect the Peninsular bighorn sheep or its critical habitat will require section 7 consultation. Activities on private or State lands requiring funding or a permit from a Federal agency, such as the Federal Highway Administration, Federal Aviation Administration, or Federal Emergency Management Agency, will also be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat and actions on non-Federal lands that are not federally funded or permitted do not require section 7 consultation.

Section 4(b)(8) of the Act requires us to evaluate briefly, in any proposed or final regulation that designates critical habitat, those activities involving a Federal action that may adversely modify such habitat or that may be affected by such designation. Activities that may destroy or adversely modify critical habitat include those that alter the primary constituent elements to an extent that the value of critical habitat for both the survival and recovery of the bighorn is appreciably reduced. We note that such activities may also jeopardize the continued existence of the species. Activities that, when carried out, funded, or authorized by a Federal agency, may directly or indirectly adversely affect critical habitat include, but are not limited to:

(1) Unauthorized destruction or degradation of habitat (as defined in the primary constituent elements discussion), including, but not limited to, clearing vegetation, bulldozing

terrain, overgrazing, construction, road building, mining, and disturbing natural hydrology; and

(2) Appreciably decreasing habitat value or quality through indirect effects (e.g., noise, edge effects, low-flying aircraft, invasion of exotic plants or animals, or fragmentation).

To properly portray the effects of critical habitat designation, we must first compare the section 7 requirements for actions that may affect critical habitat with the requirements for actions that may affect a listed species. Section 7 prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat. Actions likely to "jeopardize the continued existence" of a species are those that would appreciably reduce the likelihood of the species survival and recovery. Actions likely to "destroy or adversely modify" critical habitat are those that would appreciably reduce the value of critical habitat for the survival and recovery of the listed species.

Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Given the similarity of these definitions, actions likely to destroy or adversely modify critical habitat would almost always result in jeopardy to the species concerned, particularly when the area of the proposed action is occupied by the species. In those cases, the ramifications of designation of critical habitat are few or none. However, if occupied habitat becomes unoccupied in the future, there is a potential benefit to the species of designation of critical habitat in such areas.

Federal agencies already consult with us on activities in areas currently inhabited by the species to ensure that their actions do not jeopardize the continued existence of the species. These actions include, but are not limited to:

(1) Regulation of activities affecting waters of the United States by the Army Corps of Engineers under section 404 of the Clean Water Act;

(2) Regulation of water flows, damming, diversion, and channelization by Federal agencies;

(3) Regulation of grazing, mining, and recreation by the BLM and Forest Service;

(4) Road construction and maintenance, right-of-way designation, and regulation of agricultural activities by Federal agencies;

(5) Regulation of airspace and flight plans within the Federal Aviation Administration jurisdiction;

(6) Military training, maneuvers, and flights;

(7) Construction of roads and fences along the international border with Mexico, and associated immigration enforcement activities by the Immigration and Naturalization Service;

(8) Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency;

(9) Construction of communication sites licensed by the Federal Communications Commission; and

(10) Activities funded by the U.S. Environmental Protection Agency, U.S. Department of Energy, or any other Federal agency.

Since Federal agencies already consult with us on projects that may affect listed species, we do not anticipate additional regulatory protection or project modifications will result from critical habitat designation.

If you have questions regarding whether specific activities will constitute adverse modification of critical habitat, contact the Field Supervisor, Carlsbad Fish and Wildlife Offices (see **ADDRESSES** section). Requests for copies of the regulations on listed wildlife, and inquiries about prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Branch of Endangered Species, 911 N.E. 11th Ave, Portland, Oregon 97232 (telephone 503/231-2063; facsimile 503/231-6243).

Relationship to Habitat Conservation Plans

Section 4(b)(2) of the Act allows us broad discretion to exclude from critical habitat designation areas where the benefits of exclusion outweigh the benefits of designation, provided the exclusion will not result in the extinction of the species. We expect that critical habitat may be used as a tool to identify those areas essential for the conservation of the species, and we will encourage development of Habitat Conservation Plans (HCPs) for such areas on non-Federal lands. Habitat conservation plans currently under development are intended to provide for protection and management of habitat areas essential for the conservation of the Peninsular bighorn sheep, while directing development and habitat modification to nonessential areas of lower habitat value.

Several HCP efforts are currently under way that address listed and non-listed species in areas within the range of the Peninsular bighorn sheep and in areas we are designating as critical habitat. We are providing technical assistance and will continue to work closely with applicants throughout the

development of future HCPs to identify lands essential for the long-term conservation of the Peninsular bighorn sheep and appropriate management for those lands. The take minimization and mitigation measures provided under these HCPs are expected to protect the essential habitat lands designated as critical habitat in this rule. The HCP development process provides an opportunity for more intensive data collection and analysis regarding the use of particular habitat areas by the Peninsular bighorn sheep. The process also enables us to conduct detailed evaluations of the importance of such lands to the long-term survival of the species in the context of constructing a biologically configured system of interlinked habitat blocks. If an HCP that addresses bighorn sheep as a covered species is ultimately approved, we will reassess the critical habitat boundaries in light of the HCP and applicable law, regulation, policy, and funding constraints.

The Coachella Valley Multiple Species Habitat Conservation Plan, currently under preparation, proposes coverage for Peninsular bighorn sheep. This effort represents an important opportunity to address the long-term conservation needs of Peninsular bighorn sheep throughout the private lands under city and county jurisdiction in Riverside County, and to integrate management with intermixed public lands. The Agua Caliente Band of Cahuilla Indians also is preparing a multi-species HCP for their Reservation. Within Imperial and San Diego counties, Federal land ownership patterns, Federal funding and permitting, and extensive habitat protection on State lands, limit the prospects for HCPs that would include Peninsular bighorn sheep. We fully expect that HCPs undertaken by local jurisdictions (e.g., counties, cities) and other parties will identify, protect, and provide appropriate management for those specific lands within the boundaries of the plans that are essential for the long-term conservation of the species. We believe and fully expect that any HCPs approved in the future will show that covered activities carried out in accordance with the provisions of those HCPs would not result in destruction or adverse modification of critical habitat.

Summary of Comments and Recommendations

In the July 5, 2000, proposed rule (65 FR 41405), we requested all interested parties to submit comments on the specifics of the proposal including information, policy, treatment of HCPs,

and proposed critical habitat boundaries as provided in the proposed rule. The first comment period closed on August 31, 2000. The comment period was reopened from October 19, 2000, to November 20, 2000 (65 FR 62691), to allow for additional comments on the proposed rule and comments on the draft economic analysis of the proposed critical habitat.

We contacted all appropriate State and Federal agencies, Tribes, county governments, elected officials, and other interested parties and invited them to comment. In addition, we invited public comment through the publication of notices in the following newspapers in southern California: *The Desert Sun*, *The Riverside Press Enterprise*, and the *San Diego Union-Tribune*. The inclusive dates of these publications were July 5, 2000, for *The Riverside Press Enterprise* and the *San Diego Union-Tribune*, and July 6, 2000, for *The Desert Sun*. In these notices and the proposed rule, we announced the date and times of two public hearings that were to be held on the proposed rule. These hearings were held in Palm Springs, California on July 20, 2000. Transcripts of these hearings are available for inspection (see **ADDRESSES** section). A public workshop with biological and economic experts was held on November 2, 2000, in Palm Desert, to provide additional opportunity for discussion of issues and promote understanding of biology, economic, and procedural issues.

We requested four scientists, who have familiarity with Peninsular bighorn sheep, to review the proposed critical habitat designation. None of the peer reviewers submitted comments on the proposed critical habitat designation.

We received a total of 29 oral and 90 written comments during the two comment periods. Of these comments, 12 of the commenters who submitted oral testimony also submitted duplicative written comments. In total, oral and written comments were received from 3 Tribal governments, 1 Federal agency, 1 State agency, 1 State elected official, 3 local agencies, and 60 private organizations or individuals. We reviewed all comments received for substantive issues and new data regarding critical habitat and bighorn sheep. Comments of a similar nature are grouped under four general issues relating specifically to the proposed critical habitat determination and draft economic analysis on the proposed determination. These are addressed in the following summary.

Issue 1: Habitat Delineation

Comment: Many commenters noted that delineating the proposed critical habitat boundary on a quarter-section grid created the impression that areas that were clearly developed were included in critical habitat and should be removed.

Our Response: One of the challenges to legally describing bighorn sheep critical habitat in the Santa Rosa and San Jacinto Mountains is that development hugs the highly contorted toe of slope. Even though the proposed rule stated that existing development within the critical habitat boundary did not support constituent elements, using a quarter-section grid was confusing to many due to its coarse resolution. In the proposed rule, a quarter-section grid was chosen as a practical means of defining critical habitat over a large area, without an unduly complex legal description. In the final designation, we have decided to reduce public confusion and increase biological precision by refining the delineation and using a 100-meter grid in Riverside County that minimizes the inclusion of existing development.

Comment: Several commenters cited 16 U.S.C. 1532(5)(C), stating that critical habitat could not include the entire geographic range of bighorn sheep; others stated that critical habitat should be expanded to include all areas used by Peninsular bighorn sheep. One commenter felt that critical habitat should encompass a smaller area than essential habitat. Another commenter stated that critical habitat does not include some areas that should be included, specifically, "the southern extension of the In-Ko-Pah Mountains" in San Diego County, including "Goat Mountain, Old George Mountain, Music Mountain and Rattlesnake Mountain". Several commenters expressed support for the proposed critical habitat designation.

Our Response: 16 U.S.C. 1532(5)(C) states that "critical habitat should not include the entire geographic area that can be occupied by the threatened or endangered species" absent a finding of exceptional circumstances by the Secretary. We based our critical habitat designation on the Recovery Team's delineation of essential habitat in the approved Recovery Plan, dated October 25, 2000. The Team used their collective experience and knowledge of the ecology of bighorn sheep in the Peninsular Ranges to develop a method for delineating essential habitat, which is described in Appendix B of the Recovery Plan. The upper elevation boundary was largely determined by

dense vegetation types, because bighorn sheep require open terrain to detect and avoid predators, such as mountain lions. The lower elevation boundary was determined by the topography, existing urbanization, and bighorn sheep foraging behavior and movement patterns. The Recovery Team did not include all areas that have documented historic and current use by bighorn sheep; only those areas that are regarded as essential for recovery were included. Because the Recovery Plan definition of essential habitat is essentially the same as the statutory definition of critical habitat, we have elected to make them as similar as possible, given the practical limitations of legal boundary descriptions.

While portions of the In-Ko-Pah Mountains are included in critical habitat, we did not include the specific lands listed above in the proposal because we concluded these lands were not essential for the conservation of bighorn sheep. This conclusion was based largely on the lack of bighorn sightings and the dominance of dense chaparral vegetation in the area, which bighorn sheep generally don't use.

Comment: Several commenters suggested that certain lands proposed within critical habitat be excluded. Suggested land for exclusion included: areas with flood control and water supply structures; and lands with mining interests.

Our Response: We evaluated all submitted site-specific documentation to determine whether modifications to the proposal were appropriate. Based on discussions with Riverside County Flood Control and Water Conservation District, Desert Water Agency, and Coachella Valley Water District, normal operations and maintenance of existing facilities would not conflict with the management objectives for essential habitat. Flood control facilities typically occur in washes and alluvial habitats that still support the same important habitat values as surrounding areas. As such, these facilities are not *de facto* unsuitable or detrimental to bighorn sheep use. If reasonably managed, these areas can fulfill their intended function while at the same time contributing to bighorn sheep conservation. As described above, we met with numerous local jurisdictions and private landowners to refine critical habitat boundaries along the heavily parcelized urban interface with Coachella Valley. Our objective was to collaboratively blend the critical habitat designation with the essential habitat in the Recovery Plan, as well as the preserve design in the ongoing multi-species planning effort to increase biological

precision and minimize the potential for unnecessary social and economic effects.

There appear to be very few active mines within critical habitat and, as with the construction and maintenance of infrastructural facilities, any future project proposals will be reviewed case by case under the regulatory provisions of sections 7 and 9 of the Act to determine whether mining is compatible with sheep survival and recovery.

Comment: One commenter questioned why private lands were included when so much public land was available for designation.

Our Response: The location and distribution of private lands mandated their inclusion. Many of the valuable lower elevation habitats with key forage and water resources essential to the conservation of the species are located on private lands. In addition, the prevailing checkerboard landownership pattern of intermixed public and private lands in many areas of the Peninsular Ranges requires their inclusion because the primary constituent elements transcend ownership boundaries.

Comment: Several commenters noted that their lands should be excluded because their expert sheep consultants have studied their properties and concluded that they are unsuitable or of low value.

Our Response: Some commenters have submitted consultant reports, but then refused to meet with us to discuss the information or visit the proposed project site, whereas others allege they have site specific information but did not submit it for our review. Either way, we cannot rely upon such data in making regulatory decisions if we are unable to discuss, clarify, or inspect site specific information. In other circumstances, we had in our possession reliable information which contradicted what was provided by the commenter. In situations such as these, we did not modify the proposed critical habitat boundary.

Comment: Several commenters criticized the critical habitat proposal for not specifically excluding previously approved projects.

Our Response: Many project proponents have reached an agreement with us on the details of project proposals and, consequently, we have refined the final designation from that in the proposed rule to more closely conform with the actual essential habitat, using a combination of a 100-meter grid system and conveniently located landmarks. In this way, we avoided designation over as much of the non-essential portion of project sites as

possible. We will continue to work with applicants with whom we have yet to reach agreement on how to avoid jeopardy or adverse modification of habitat deemed essential to the conservation of the species.

Comment: One comment suggested that areas below the 2000-foot contour should be excluded; another suggested the 1000-foot contour; while another suggested the 700-foot contour.

Our Response: These conflicting comments appear to address the objectives of specific proposed developments and not bighorn biology. This rule and the Recovery Plan clearly document the importance of the unique habitat values provided by lower elevation habitats, such as washes and alluvial fans, and the critical role these areas play in bighorn sheep recovery. These lower elevation areas support different vegetation communities than adjacent steep rocky areas, because of the different soil compositions and moisture regimes in less steep areas. Consequently, these areas produce nutritious forage at critical times of the year for bighorn sheep. Much of this low elevation habitat has already been lost to development. Rather than choosing an arbitrary contour, we based the boundary on biological criteria discussed in the Recovery Plan and included habitat providing the primary constituent elements within 0.8 km (0.5 mi) of slopes greater than or equal to 20 percent.

Comment: Tribal lands should be excluded from critical habitat.

Our Response: We have a trust responsibility to work with Tribes in designating critical habitat. We have been working with the affected Tribes to address their concerns and develop compatible management strategies. Though these discussions are ongoing, the current absence of agreements or completed land-use management plans does not allow us to exclude Tribal lands from designation. We have determined that Tribal lands are important to bighorn conservation because they provide critical physical and biological features that are essential to the conservation of the species.

Comment: Numerous commenters requested that areas without documented evidence of bighorn use be removed from critical habitat. They also claimed that all habitat is not occupied by bighorn sheep, contrary to statements in the proposed rule, and only a portion of designated lands contain suitable habitat.

Our Response: Most of these comments refer to developed areas that were excluded by text within the proposed rule but were located within

the critical habitat boundary. Most of these areas have been removed by using the finer resolution of the 100-meter grid mapping approach. Other comments suggested that if a focused survey for bighorn sheep was negative, the surveyed area should be removed from critical habitat. Such logic overlooks the fact that bighorn sheep are wide-ranging animals adapted to exploiting sparsely distributed resources over large tracts of habitat for feeding, breeding, sheltering, and dispersing. Bighorn sheep use certain areas more frequently than others, and these areas are termed home ranges or core use areas. The home range concept implies that the probability of locating an individual bighorn sheep will be greater within its home range, not that bighorns confine all of their movements to home ranges. Furthermore, home ranges may shift over time, and the resources bighorn sheep require from outside their home ranges may be critical for their survival.

Rams and ewes have been documented to move many miles beyond their normal home ranges and may infrequently use certain areas on a seasonal or annual basis. This differs from the common public perception that occupancy means the detectable presence of bighorn sheep in a particular area at any time throughout the breeding and non-breeding seasons. Furthermore, the present reduced population level has a contracted geographic distribution. As the population recovers, the number and size of home ranges should expand, providing increased connectivity to areas where bighorn sheep were formerly more common. The goal is to delineate an area that provides the opportunity for a reduced population to survive and recover. Given the bighorn sheep's wide-ranging habits, as well as numerous historic and recent distributional records extending outside the area designated as critical habitat, we find no basis for concluding that bighorn sheep are absent from or incapable of using particular areas within designated critical habitat.

Comment: The proposed rule should exclude the area governed by existing and pending HCPs.

Our Response: Since no approved HCPs currently exist within the proposed critical habitat boundary, none were excluded. Our approach to any HCPs approved in the future is discussed in response to the next comment.

Comment: Two commenters stated that the final critical habitat rule should provide automatic removal from critical habitat of areas covered by future HCPs,

while one commenter stated that adjustments could not be automatically made and any proposed changes need to be published in the **Federal Register**.

Our Response: We anticipate that future HCPs in the range of bighorn sheep may include it as a covered species. We expect that HCPs undertaken by local jurisdictions (e.g., counties, cities) and other parties will identify, protect, and provide appropriate management for those specific lands within the boundaries of the plans that are essential for the long-term conservation of bighorn sheep. We fully expect that any future approval of HCPs and section 10(a)(1)(B) permits would show that covered activities carried out in accordance with the provisions of the HCPs and section 10(a)(1)(B) permits would not result in the destruction or adverse modification of critical habitat designated for Peninsular bighorn sheep. By law, any proposed changes to critical habitat cannot be automatically made and must be published in the **Federal Register**.

Comment: Several commenters recommended that we postpone issuing a final determination until a more specific and defensible critical habitat proposal can be written and an accurate and quantitative economic analysis be conducted.

Our Response: We are required to use the best available information in designating critical habitat. Under our settlement agreement, we must complete the designation of bighorn critical habitat by January 15, 2001. We solicited any new biological data, invited public participation during the comment period, conducted public hearings on the proposed rule and subsequent comment periods, and held a public workshop for the draft economic analysis and proposed rule. These comments have been taken into account in the development of this final determination. Accordingly, we have used the best scientific and commercial information available in the designation.

Comment: Some landowners expressed concern that because their properties were located within critical habitat, they would be subject to additional constraints under the California Environmental Quality Act (CEQA).

Our Response: According to section 15065 of the CEQA guidelines, environmental impact reports are required by local lead agencies when, among other things, a project has the potential to "reduce the number or restrict the range of an endangered, rare or threatened species." Thus, local lead agencies must address potential effects to listed species regardless of whether

critical habitat is designated. Local lead agencies would make the determination of whether critical habitat is pertinent under State law for separate projects.

Comment: Several landowners expressed concern about how critical habitat designation may affect their particular properties and what they would and would not be allowed to do in the future because of the designation. Some of these landowners expressed concerns that they would need to seek incidental take authorization from the Service for every type of action taken on their property.

Our Response: We are sensitive to the concerns of individuals concerning their property rights. As described in the rule, critical habitat receives protection under section 7 of the Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. The designation of critical habitat for bighorn sheep does not impose any additional requirements or conditions on property owners beyond those required by the listing of bighorn sheep as a federally endangered species, unless a Federal nexus (*e.g.*, permit, funding, right-of-way, loan guarantee) is involved. If a Federal nexus exists on private property, the involved Federal agency would have a responsibility under section 7 to consult with us on any proposed actions that may affect a listed species.

All landowners, public and private, are responsible for making sure their actions do not result in the unauthorized "take" of a listed species, regardless of whether or not the activity occurs within designated critical habitat. "Take" is defined by regulation to include "significant habitat modification or degradation that actually kills or injures wildlife". The definition was upheld by the U.S. Supreme Court in *Sweet Home Chapter of Communities for a Great Oregon et al. v. Babbitt*. Take prohibitions apply regardless and are independent of critical habitat designation. The designation of critical habitat does not expand the requirement for incidental take authorization.

Issue 2: Bighorn Sheep Biology and Management

Comment: Connectivity needs to be maintained between ewe groups and areas needed for long-term recovery, *e.g.*, south of Interstate 8.

Our Response: Connectivity is a primary constituent element for Peninsular bighorn sheep, and the current critical habitat configuration attempts to provide long-term

connectivity between ewe groups, including the area south of Interstate 8. Within the areas designated as critical habitat, we will work with affected interests to resolve existing barriers to bighorn sheep movement, such as fences and high traffic roads, as outlined in the Recovery Plan.

Comment: Two commenters felt that cattle grazing was compatible with bighorn sheep recovery, and that cattle grazing had been unfairly targeted by the designation of critical habitat.

Our Response: Federal agencies that issue grazing permits on lands containing endangered species are required to consult with us. These consultations are required by section 7 of the Act, and result from the listing of the species, even in the absence of the designation of critical habitat. The purposes of section 7 consultations are to analyze the effects of grazing practices, to determine if they jeopardize the continued existence of the endangered species, to avoid and minimize the impact of incidental take, and, if needed, to suggest reasonable and prudent alternatives that will avoid jeopardy. Although they will also have to consult on whether they will destroy or adversely modify critical habitat, the designation of critical habitat does not necessarily affect grazing allotments beyond the initial requirements of listing the species. Some grazing operations are currently involved in disputes with land management agencies. These legal actions and their settlements are separate from the designation of critical habitat and the section 7 process.

Comment: Several commenters felt that the designation of critical habitat was unnecessary, because the decline of bighorn sheep in the Peninsular Ranges has been caused solely or mainly by mountain lion predation. They felt that controlling mountain lions would, by itself, result in the recovery of bighorn sheep.

Our Response: Bighorn sheep evolved during the Ice Ages with a suite of large predators, including mountain lions. Consequently, they developed effective defenses, such as good eyesight, vigilance, herding behavior, and the ability to move with great agility and speed across steep, rocky terrain. Many of these traits were shaped by the presence of large carnivores, some of which became extinct long ago. However, both bighorn sheep and mountain lions have survived to present times. The two species have coexisted in the Peninsular Ranges for thousands of years.

Research indicates that in certain circumstances individual mountain

lions may develop a preference for bighorn sheep, while other resident lions spend little time pursuing bighorn sheep. In the past, larger, healthier bighorn populations were capable of withstanding the periodic mortality caused by mountain lions. However, once a population declines below a certain threshold, predation can have a limiting effect. Man has impacted the landscape greatly, and other factors, such as disease, urbanization, highway construction, human disturbance, and habitat loss, have reduced the population to such a low level that any mortality, including mountain lion predation, becomes very significant. Thus, the decline of bighorn sheep has not been caused by one single factor, and a recovery strategy must address a complex array of interacting mortality factors to be successful.

Comment: Several commenters stated that recreational opportunities need to be considered when designating critical habitat. Two commenters suggested that the Coral Reef Mountains, adjacent to La Quinta, be removed from critical habitat to accommodate present and perceived future recreation needs in the area. One commenter requested that the Lake Cahuilla Recreation Area be removed because of the potential for affecting recreational activities, especially trail use. Other commenters were concerned that traditional hikes would be curtailed and popular areas closed, especially in Anza-Borrego Desert State Park.

Our Response: Critical habitat designation does not automatically eliminate recreational opportunities. With proper management recreational activities can be compatible with bighorn recovery. Regardless of critical habitat, we are working with local interests, including State and Federal land management agencies, to prepare a trails management plan as part of existing agency responsibilities and the Coachella Valley multi-species planning program. Bighorn sheep have been recently documented using the Coral Reef Mountains as lambing habitat. Given the current low population numbers in the Peninsular Ranges, protection of lambing habitat is essential to recovery. We have discussed with the City of La Quinta and project proponents in the area alternative trail alignments and other opportunities that are compatible with bighorn recovery.

Lake Cahuilla and surrounding areas at the southern end of the Coral Reef Mountains are owned by the Bureau of Reclamation, which we assume will consult with us through section 7 on any potential activities that may affect bighorn sheep. We anticipate that recreational activities associated with an

urban lake will be compatible with bighorn recovery. A regional trails plan involving Federal, State and local entities is in preparation and can be designed to be compatible with bighorn sheep conservation. In Anza-Borrego Desert State Park, critical habitat designation is unlikely to affect recreational hiking because most Park activities lack a Federal nexus and the State is implementing a land-use plan that appears to be compatible with bighorn sheep conservation.

Comment: Several commenters stated that the proposed critical habitat designation was "not specific" and was too "expansive" and "overbroad" and, therefore, failed to comply with Congressional intent to restrict critical habitat to those areas "essential to the conservation of the species." Other commenters stated that the designation was not inclusive enough and failed to include areas that bighorn have used and are necessary for recovery of the species.

Our Response: Determination of critical habitat for bighorn sheep in the Peninsular Ranges was based on information and expertise provided through the recovery planning process. We assembled a Recovery Team to prepare a Recovery Plan, which included the delineation of essential habitat. During the development of the essential habitat boundary, in conjunction with the Coachella Valley multiple species planning effort, affected stakeholders were included in discussions to refine the essential habitat boundary area and a reserve design for the multi-species plan. During a succession of meetings, areas without long-term conservation value were excluded from delineated essential habitat. This process resulted in the essential habitat delineation that was described in the approved Recovery Plan. The designation of critical habitat reflects these efforts by adhering to the delineation of essential habitat as closely as possible. We believe this to be a logically and scientifically sound approach to critical habitat designation that provides the specific habitat necessary for survival and recovery, while taking into consideration the concerns of local government and landowners.

Comment: The primary constituent elements described in the proposed rule were too vague, and the exact locations of each of the primary constituent elements should be discussed in the final designation of critical habitat.

Our Response: The biological needs of bighorn sheep can be discussed at several levels of complexity. The primary constituent elements are

intended to denote the most basic habitat components required by bighorn sheep for survival. Within individual primary constituent elements, additional layers of complexity could be described, especially for complex higher organisms, such as bighorn sheep. For example, availability of adequate forage could be further described by listing each of the forage species utilized by bighorn sheep, and then further described by listing the nutritional composition of each forage species.

Since bighorn sheep forage on a wide variety of plant species (Turner (1973) recorded 43 species), attempts to comprehensively list them, as well as all of the other biological requirements of bighorn sheep would not be possible. Similarly, an attempt to precisely describe the location of each resource would also be impractical. For example, water sources change in response to weather patterns and temporary water sources can be as important as permanent sources. Scientists and land managers are continually learning more about bighorn sheep and the ecosystem that they depend on, therefore, a reductionist approach to describing the biological needs of bighorn sheep would likely fail to include all of the environmental, physiological, and behavioral complexities needed for their survival. Therefore, we chose to discuss the biological requirements of bighorn sheep at an ecosystem level, thus insuring that none of the particular requirements of bighorn sheep would be excluded. More detailed information for specific proposed activities will be developed during the section 7 consultation process.

Comment: Several commenters questioned the applicability of metapopulation theory to bighorn sheep in the Peninsular Ranges.

Our Response: As described in more detail in the Recovery Plan, Peninsular bighorn sheep are considered a metapopulation because ewe groups are connected by movement of rams and ewes. However, bighorn sheep are slow colonizers and the processes of colonization and extinction extend over long time periods. Without proper management, an unstable metapopulation could result if extinctions occurred at a faster rate than colonizations, thereby lessening the likelihood of successful recovery of the species.

Comment: One commenter recommended moving sheep out of areas proposed for development to make critical habitat more achievable.

Our Response: The proposal to move bighorn sheep and critical habitat out of conflict areas presumes that the areas in

question would not be essential to conservation. We have coordinated this designation through the recovery planning and section 10(a)(1)(B) regional habitat conservation planning program in the Coachella Valley to determine where critical habitat boundaries needed movement and refinement. The results of this coordination are reflected in the final designation, which removed approximately 12,430 ha (30,716 ac) from the proposed designation.

Issue 3: Procedural Issues

Comment: Critical habitat should not have been proposed before an economic and other impact analyses were completed, and the opportunity to comment on the economic analysis and the proposed rule was limited.

Our Response: Pursuant to 50 CFR 424.19, we are not required to conduct an economic analysis at the time critical habitat is initially proposed. We realize that under ideal circumstances we would provide the draft economic analysis at the same time as the proposal. However, due to the short time frame available to us to complete the proposal and a heavy economic analysis workload, we were unable to do so. We published the proposed determination in the **Federal Register** (65 FR 41405), invited public comment, and held two public hearings. We used comments received on the proposed critical habitat to assist in developing the draft economic analysis. We then reopened public comment period on the draft economic analysis and the proposed designation for 33 days, and held a public workshop. Furthermore, we were unable to provide a longer comment period given the short time frame ordered by the Court.

Comment: Critical habitat designation requires a National Environmental Policy Act (NEPA) review.

Our Response: As stated in the proposed rule, we have determined that compliance with NEPA is not required in connection with regulations adopted pursuant to section 4(a) of the Act. Further, the Ninth Circuit Court of Appeals has ruled that, within its Circuit, compliance with NEPA for critical habitat designations is not required. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Comment: The role of the Service as the sole determiner of physical and biological features is inappropriate and dictatorial. The unwillingness to recognize scientific peer reviews is further evidence of the Service's unresponsiveness to public comment.

Our Response: Section 3(5)(A)(I) of the Act and regulations at 50 CFR 424.12 require us to determine the physical and biological features (primary constituent elements) that are essential to the conservation of the species. In this case, we used the best science available, including published scientific literature, expertise of Recovery Team members, other biologists familiar with Peninsular bighorn sheep, and the Recovery Plan. The Recovery Team includes scientists from a variety of Federal and State agencies, Tribal, and other public, and private research institutions with an impressive depth of experience working with bighorn sheep in the Peninsular Ranges. The public hearings, a public workshop, and two comment periods, provided ample opportunity for public involvement. All input from the public was evaluated for incorporation into the final rule. We also solicited peer review comments from four scientists familiar with Peninsular bighorn sheep.

Comment: Map exhibits in the proposed rule and at the public hearings did not show enough detail.

Our Response: The maps in the **Federal Register** are meant to provide a general location and shape of critical habitat. At the public hearings and workshop, these maps were expanded into wall-size aerial photos to assist the public in better understanding the proposal. These larger scale GIS products also were provided to individuals upon request. The legal descriptions, based on the Public Land Survey system, are readily plotted and transferable to a variety of mapping formats.

Comment: Conclusions drawn in the proposed rule lack scientific citations and/or rely on unpublished science.

Our Response: We used the recovery planning process to assist in the preparation of the proposed and final critical habitat designation. Integration of these processes strengthened the scientific basis and minimized the potential contradictions or discrepancies between the two processes. Please refer to the approved Recovery Plan for a more detailed treatment of the biological literature and recovery concepts. Additional biological explanation and references were added to this final rule in response to public comments.

Comment: Two commenters stated that Peninsular bighorn sheep are *Ovis canadensis nelsoni* and, therefore, are not deserving of a critical habitat designation.

Our Response: The bighorn sheep in the Peninsular Ranges are listed as a distinct vertebrate population segment.

Please refer to 63 FR 13134, dated March 18, 1998, for a discussion of the applicability of our policy on implementing the Act's provisions for listing distinct vertebrate population segments.

Comment: Several commenters requested that additional hearings be held in other areas to accommodate a wider group of affected groups and individuals. Suggested areas included San Diego and Orange counties.

Our Response: Holding public hearings in multiple areas would have been more convenient for some people. However, administrative costs, staffing limitations, and the limited attendance at the hearings that were held, were all taken into consideration in deciding on the appropriate number of hearings to be held. Palm Springs was chosen for the public hearing because it is the closest urban center to the proposed critical habitat boundary and, therefore, accommodated most interests directly affected. While much of the proposed critical habitat is in the Anza-Borrego Desert State Park portion of San Diego County, this area is remotely located from populous regions. Since the Park has management goals that are largely compatible with bighorn sheep recovery, and the likelihood of Federal involvement is limited, the effect of critical habitat designation in this area is likely to be small. Since no critical habitat for Peninsular bighorn sheep was proposed in Orange County, and attendance was relatively small at the Palm Springs hearing, meetings in outlying areas were not considered to be a priority use of the limited resources available to us in developing this rule.

Comment: Tribal interests contended that not enough was known about bighorn use on their lands to warrant designation of critical habitat.

Our Response: Past survey efforts for bighorn sheep have been led by the CDFG and other cooperators. We have obtained much of their information and provided it to the Tribes and public in the approved Recovery Plan, and in a separate bighorn sheep distribution map, dated October 13, 2000. Though the State and its cooperators did not agree to provide many of the attributes behind the data, we are convinced by the best available information that the area that we are designating as critical habitat is essential to the conservation of the species. We intend to continue to work with the Tribes on obtaining additional information so that we can fulfill our responsibilities to the them.

Comment: One commenter raised a series of questions related to Tribal lands and the Recovery Plan.

Our Response: Questions related to the Recovery Plan are better addressed separately, and we are available to discuss these issues within the recovery planning context. For critical habitat, Tribal lands were assessed using the same physical and biological criteria as other lands in determining their potential contribution to bighorn conservation. These criteria, and the approach described in Appendix B of the Recovery Plan, indicated that some Tribal lands merited inclusion as critical habitat.

Comment: One Tribe commented that their past and present land management practices have been compatible with bighorn sheep conservation, and that their future HCP precludes the necessity of designating critical habitat on Tribal lands.

Our Response: Though past management practices of Tribal lands have apparently, for the most part, been compatible with bighorn sheep recovery, Tribes have not informed us of the details of their current and past management practices. We are preparing agreements with some of the Tribes that better define coordination protocols for addressing issues relating to the Act. If these agreements lead to future HCPs that contain measures that conserve bighorn sheep habitat, critical habitat could be revised and areas covered by the HCP either excluded under a section 4(b)(2) analysis or removed because they no longer meet the definition of critical habitat. Pursuant to the definition of critical habitat in section 3 of the Act, any area so designated may require "special management considerations or protections." Adequate special management or protection is provided by a legally operative plan that addresses the maintenance and improvement of the essential elements and provides for the long-term conservation of the species. The Service considers a plan adequate when it meets all of the following three criteria: (1) The plan provides a conservation benefit to the species (*i.e.*, the plan must maintain or provide for an increase in the species' population or the enhancement or restoration of its habitat within the area covered by the plan); (2) the plan provides assurances that the management plan will be implemented (*i.e.*, those responsible for implementing the plan are capable of accomplishing the objectives, have an implementation schedule and/or have adequate funding to implement the management plan); and, (3) the plan provides assurances the conservation plan will be effective (*i.e.*, it identifies biological goals, has provisions for reporting progress, and is of a duration sufficient to implement the

plan and achieve the plan's goals and objectives). If an area is covered by a plan that meets these criteria, it does not constitute critical habitat as defined by the Act.

Issue 4: Economics

Comment: Some commenters disagreed with the assumption applied in the economic analysis that the designation of critical habitat will cause no impacts above and beyond those caused by the listing of the species within the essential habitat line identified in the Peninsular bighorn sheep Recovery Plan. They assert that "adverse modification" and "jeopardy" are different, will result in different impacts, and should be analyzed as such in the economic analysis.

Our Response: Section 7 prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat. Actions likely to "jeopardize the continued existence" of a species are those that would appreciably reduce the likelihood of both the survival and recovery of a listed species. Actions likely to result in the destruction or adverse modification of critical habitat are those that would appreciably reduce the value of critical habitat for the survival and recovery of a listed species. Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Given the similarity of these definitions, actions likely to result in the destruction or adverse modification of critical habitat would typically result in jeopardy to Peninsular bighorn sheep. Through broad distribution of the Recovery Plan, Federal agencies are aware of our concern for bighorn sheep within this area. Given the similarities of essential and critical habitat, the designation likely will not result in any appreciable increase in the number of section 7 consultations or the impacts of these consultations on actions.

Comment: Some commenters were concerned that, while we discussed impacts that are more appropriately attributable to the listing of bighorn sheep than to the proposed designation of critical habitat, we did not include in the baseline those costs attributable to the listing.

Our Response: The Act is clear that listing decisions be based solely on scientific criteria, using the best available scientific and commercial data available (section 4(b) of the Act). Congress also made it clear in the Conference Report accompanying the

1982 amendments to the Act that "economic considerations have no relevance to determinations regarding the status of species". If we were to consider the economic impacts of listing in the critical habitat designation analysis it would lead to confusion, because the designation analysis is meant to determine whether areas should be excluded from the designation of critical habitat based solely upon the costs and benefits of the designation, and not upon the costs and benefits of the listing. Additionally, because the Act specifically precludes us from considering the economic impacts of the listing, it would be improper to consider those impacts in the context of an economic analysis of the critical habitat designation. Our economic analyses address how the actions we are currently considering may affect current or planned activities and practices; they do not address impacts associated with previous Federal actions, which in this case includes the listing of Peninsular bighorn sheep as an endangered species. This method is consistent with the standards published by the Office of Management and Budget for preparing economic analyses under Executive Order 12866.

Comment: Some commenters stated that we should have estimated the cumulative effect of the critical habitat designation for bighorn sheep along with the effect of future pending and proposed critical habitat for other species in Southern California.

Our Response: Future pending and proposed critical habitat designations for other species in the area will be part of separate rulemakings and consequently, their economic effects will be considered separately. We are required to only consider the effect of the proposed government action, which in this case is the designation of critical habitat for bighorn sheep. Again, the appropriate baseline to use in an analysis of a Federal action is the future without the proposed regulation. Against this baseline, we attempt to identify and measure the incremental costs and benefits associated with the government action. Because the Peninsular bighorn sheep is already a federally protected species, any effect this listing has on the regulated community is considered part of the baseline scenario, which remains largely unaffected by our critical habitat designation.

Comment: Some commenters believe that the draft economic analysis underestimated the potential costs of critical habitat designation.

Our Response: In preparing the economic analysis, we estimated the potential effects from critical habitat designation. As previously stated, we believe that many of the effects perceived by the public to be attributable to critical habitat would actually occur regardless of critical habitat designation because Peninsular bighorn sheep are a federally protected species. Because we are attempting to estimate potential future effects from critical habitat designation, our estimates are based on potential future activities that are typical for the area. In reality, some individuals may experience impacts greater than we estimated, while others experience less. On the whole, however, we have provided a reasonable estimation of the potential future impacts of critical habitat designation for Peninsular bighorn sheep.

Comment: Some commenters believe that the economic analysis is flawed because it ignores regional and local government economic projection data and that critical habitat designation could have an effect on projected housing demand in the area.

Our Response: Our draft economic analysis provided a socio-economic profile of the proposed critical habitat area, which was based on Federal, State, and local government data. While we acknowledged that critical habitat designation within the "uncertain lands" could have a small impact due to an increase in section 7 consultations, we do not believe that these potential future consultations will have significant impacts on land development patterns within the Coachella Valley.

Comment: Some commenters believed we should have speculated about property value effects to private landowners due to critical habitat designation.

Our Response: Our economic analysis acknowledged that critical habitat designation may, in some instances, have short-term effects on private property values. However, as we stated in the analysis, we did not attempt to quantify such effects due to their highly speculative nature and propensity to have offsetting effects. Since we conducted the draft economic analysis, a study was released by the Coalition for Sonoran Desert Protection that examined the impact of designating habitat for the cactus ferruginous pygmy-owl in southern Arizona. Performed 1 year after the designation, the study found that dire predictions made by developers in that region have not materialized. Specifically, high-density housing development has not

slowed, the value of vacant land has risen, land sales have continued, and the construction sector has continued its steady growth (McKenney 2000). We similarly believe that critical habitat designation for bighorn sheep will also not likely exert a measurable influence on real estate development within the Coachella Valley.

Comment: Some commenters believe that the economic analysis overstated potential benefits of critical habitat designation.

Our Response: Our draft economic analysis discussed the potential benefits associated with preserving bighorn sheep, but did not attempt to differentiate between benefits attributable to listing, and benefits attributable to critical habitat designation. Because critical habitat designation for bighorn sheep will have little effect on the current and planned activities in the Coachella Valley, we also believe that the benefits from designation will likewise be limited.

Comment: Some commenters believed that the draft economic analysis failed to estimate the potential project modification and delay costs that could be associated with potential additional section 7 consultations due to critical habitat designation.

Our Response: Our economic analysis attempted to quantify the effects of future section 7 consultations likely to occur due to critical habitat designation. This estimate included many of the discrete activities that may occur during the consultation process, which included project modification and delay costs. We estimated these costs to range between \$25,000 and \$900,000. These cost estimates were only meant to represent potential average changes in a "typical" development project's description that sometimes occur during the course of the consultation process and that may be attributed to critical habitat designation. Often project designs are changed or projects are delayed due to factors outside the scope of the Act, which may be caused by other Federal or State regulations and local zoning ordinances. As previously stated, due to the similarity in definitions, we believe that planned projects that could adversely modify critical habitat in most cases would also cause jeopardy to the continued existence of the species. Consequently, such effects would occur regardless of critical habitat designation.

Comment: One commenter stated that the without critical habitat baseline conditions need to include the recent creation of the Santa Rosa and San Jacinto National Monument.

Our Response: At the time the draft was written, the Santa Rosa and San Jacinto National Monument Act had yet to be signed into law. However, our economic analysis discussed the potential effect creating the Santa Rosa and San Jacinto National Monument would have on proposed critical habitat. Both the BLM and Forest Service are required to develop a management plan within 3 years following enactment. Because these agencies are already aware of our concern for bighorn sheep within these areas, we do not believe the designation of critical habitat will have incremental effects on the need to consult.

Comment: Several commenters voiced concern that they were not directly contacted for their opinions on the economic impacts of critical habitat designation.

Our Response: We are not required to contact every potential stakeholder to develop an economic analysis. We were able to understand the issues of concern to the local community based on public comments submitted on the proposed rule, on transcripts from public hearings, and from detailed discussions with Service representatives. To clarify issues, we also contacted representatives from other Federal, State, and local government agencies, as well as private landowners. When the draft economic analysis was completed, we provided notice of its availability in the **Federal Register** and local newspapers, and requested public comment. In particular, we requested comments on the adequacy of the economic analysis.

Summary of Changes From the Proposed Rule

Based on a review of public comments received on the proposed determination of critical habitat for bighorn sheep, we re-evaluated our proposed designation of critical habitat. This resulted in one significant change that is reflected in this final determination. Based on public comment, due to the highly urbanized interface from Palm Springs to La Quinta in Riverside County, we refined the minimum mapping unit for the designation from one-quarter PLS section (approximately $\frac{1}{4}$ square mile), or UTM equivalent in the Spanish Land Grant areas, to a 100-m UTM grid that approximates the boundary of lands essential to bighorn sheep conservation. Where feasible, identifiable landmarks, such as flood control channels and streets were used to further refine the boundary and increase on-the-ground clarity. This resulted in the removal of significant urban or developed areas.

The overall refinement of critical habitat boundaries due to the revised mapping scale resulted in a reduction of approximately 12,430 ha (30,716 ac).

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific and commercial data available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat upon a determination that the benefits of such exclusions outweigh the benefits of specifying such areas as critical habitat. We cannot exclude such areas from critical habitat when such exclusion will result in the extinction of the species.

Economic effects caused by listing bighorn sheep as an endangered species and by other statutes are the baseline against which the effects of critical habitat designation are evaluated. The economic analysis must then examine the incremental economic and conservation effects and benefit of the critical habitat designation. Economic effects are measured as changes in national income, regional jobs, and household income. An analysis of the economic effects of bighorn sheep critical habitat designation was prepared (Industrial Economics, Inc. 2000) and made available for public review (65 FR 62691). The final analysis, which reviewed and incorporated public comments, concluded that no significant economic impacts are expected from critical habitat designation above and beyond that already caused by listing Peninsular bighorn sheep.

The most likely economic effects of critical habitat designation are on activities funded, authorized, or carried out by a Federal agency. The final analysis examined the effects of the designation on: (1) areas included in the proposed critical habitat designation, but removed from the final rule; (2) re-initiation of section 7 consultations; (3) length of time in which section 7 consultations are completed; and (4) new consultations resulting from the determination. Because areas proposed for critical habitat are within the geographic range of bighorn sheep, activities that may affect critical habitat may also affect the species, and would thus be subject to consultation whether or not critical habitat is designated. We believe that any project that would adversely modify or destroy critical habitat likely would also jeopardize the continued existence of the species, and that reasonable and prudent alternatives to avoid jeopardizing the species would

also avoid adverse modification of critical habitat. Thus, no regulatory burden or associated significant additional costs would accrue because of critical habitat above and beyond that resulting from listing. Our economic analysis does recognize that there may be costs from delays associated with reinitiating completed consultations after the critical habitat designation is made final. There also may be economic effects due to the reaction of the real estate market to critical habitat designation, as real estate values may be lowered due to perceived increase in the regulatory burden. We believe this impact will be short-term, however, and does not justify exclusion of any areas.

A copy of the final economic analysis and description of the exclusion process

with supporting documents are included in our administrative record and may be obtained by contacting our office (see **ADDRESSES** section).

Required Determinations

Regulatory Planning and Review

This document has been reviewed by the Office of Management and Budget (OMB), in accordance with Executive Order 12866. OMB makes the final determination under Executive Order 12866.

(a) This rule will not have an annual economic effect of \$100 million or adversely affect an economic sector, productivity, jobs, the environment, or other units of government. Peninsular bighorn sheep were listed as an

endangered species in 1998. In fiscal years 1998 through 2000, we have conducted three formal section 7 consultations with other Federal agencies to ensure that their actions would not jeopardize the continued existence of the species.

The areas designated as critical habitat are currently within the geographic range inhabited by bighorn sheep. Under the Act, critical habitat may not be adversely modified by a Federal agency action; it does not impose any restrictions on non-Federal persons unless they are conducting activities funded or otherwise sponsored or permitted by a Federal agency (see Table 2 below).

TABLE 2.—IMPACTS OF PENINSULAR BIGHORN SHEEP LISTING AND CRITICAL HABITAT DESIGNATION

Categories of activities	Activities potentially affected by species listing only	Additional activities potentially affected by critical habitat designation
Federal activities potentially affected.	Activities such as those affecting U.S. waters by the Army Corps of Engineers under section 404 of the Clean Water Act; Regulation of water flows, damming, diversion, and channelization by Federal agencies; Regulation of grazing, mining, and recreation by the Bureau of Land Management and U.S. Forest Service; Road construction and maintenance, right-of-way designation, and regulation of agricultural activities; Regulation of airspace and flight plans within the Federal Aviation Administration jurisdiction; Military training, maneuvers, and flights; Construction of roads and fences along the international border with Mexico, and associated immigration enforcement activities by the Immigration and Naturalization Service; Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency; Construction of communication sites licensed by the Federal Communications Commission; and Activities funded by the U.S. Environmental Protection Agency, U.S. Department of Energy, or any other Federal agency.	None.
Private or other non-Federal Activities potentially affected.	Activities that affect bighorn whether directly (e.g., grading, overgrazing, construction, road building, mining, etc.) or through indirect effects (e.g., noise, edge effects, invasion of exotic species, or fragmentation) that require a Federal action (permit, authorization, or funding).	None.

Section 7 requires Federal agencies to ensure that they do not jeopardize the continued existence of the species. Based upon our experience with the species and its needs, we conclude that any Federal action or authorized action that could potentially cause an adverse modification of the proposed critical habitat would currently be considered as “jeopardy” under the Act. Accordingly, the designation of critical habitat does not have any incremental impacts above the listing on what actions may or may not be conducted by Federal agencies or non-Federal persons that receive Federal authorization or funding. Non-Federal persons that do not have any Federal involvement with their actions are not restricted by the designation of critical habitat, however, they continue to be bound by the provisions of the Act concerning “take” of the species.

(b) This rule will not create inconsistencies with other agencies’ actions. As discussed above, Federal agencies have been required to ensure that their actions do not jeopardize the continued existence of the Peninsular bighorn sheep since the listing in 1998. The prohibition against adverse modification of critical habitat is not expected to impose any restrictions in addition to those that currently exist because all designated critical habitat is within the geographic range inhabited by bighorn sheep.

(c) This rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Federal agencies are currently required to ensure that their activities do not jeopardize the continued existence of the species, and as discussed above we do not anticipate that the adverse modification prohibition (resulting from critical

habitat designation) will have any significant incremental effects.

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

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

In the economic analysis, we determined that designation of critical habitat will not have a significant effect on a substantial number of small entities. As discussed under Regulatory Planning and Review above, and in this final determination, this designation of critical habitat for bighorn sheep is not expected to result in any restrictions in addition to those currently in existence. As indicated on Table 1 (see Critical Habitat Designation section), we have designated property owned by Federal,

State and local governments, and private property.

Within these areas, the types of Federal actions or authorized activities that we have identified as potential concerns are:

(1) Regulation of activities affecting waters of the United States by the Army Corps under section 404 of the Clean Water Act;

(2) Regulation of water flows, damming, diversion, and channelization by Federal agencies;

(3) Regulation of grazing, mining, and recreation by the BLM or Forest Service;

(4) Road construction and maintenance, right of way designation, and regulation of agricultural activities by Federal agencies;

(5) Regulation of airport improvement activities within the Federal Aviation Administration jurisdiction;

(6) Military training and maneuvers and flights;

(7) Construction of roads and fences along the International Border with Mexico, and associated immigration enforcement activities by the Immigration and Naturalization Service;

(8) Hazard mitigation and post-disaster repairs funded by the Federal Emergency Management Agency;

(9) Construction of communication sites licensed by the Federal Communications Commission; and

(10) Activities funded by the U. S. Environmental Protection Agency, Department of Energy, or any other Federal agency.

Many of these activities sponsored by Federal agencies within critical habitat areas are carried out by small entities (as defined by the Regulatory Flexibility Act) through contract, grant, permit, or other Federal authorization. As discussed in section 1 above, Federal agencies engaging in these actions are currently required to comply with the listing protections of the Act, and the designation of critical habitat is not anticipated to have any additional effects on these activities.

For actions on non-Federal property that do not have a Federal connection (such as funding or authorization), the current restrictions concerning take of the species remain in effect, and this final determination will have no additional restrictions.

Small Business Regulatory Enforcement Fairness Act (5 U.S.C. 804(2))

Based on our economic analysis of this action, we have determined that designation of critical habitat will not cause (a) any effect on the economy of \$100 million or more, (b) any increases in costs or prices for consumers, individual industries, Federal, State, or

local government agencies, or geographic regions in the economic analysis, or (c) any significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises.

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

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.):

(a) This rule will not “significantly or uniquely” affect small governments. A Small Government Agency Plan is not required. Small governments will only be affected to the extent that any Federal funds, permits or other authorized activities must ensure that their actions will not adversely affect the critical habitat. However, as discussed in section 1, these actions are currently subject to equivalent restrictions through the listing protections of the species, and no further restrictions are anticipated.

(b) This rule will not produce a Federal mandate of \$100 million or greater in any year, that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments.

Takings

In accordance with Executive Order 12630, the rule does not have significant takings implications. A takings implication assessment is not required. As discussed above, the designation of critical habitat affects only Federal agency actions. The rule will not increase or decrease the current restrictions on private property concerning take of bighorn sheep. Due to current public knowledge of the species protection, the prohibition against take of the species both within and outside of the designated areas, and the fact that critical habitat provides no incremental restrictions, we do not anticipate that property values will be affected by the critical habitat designation. While real estate market values may temporarily decline following designation, due to the perception that critical habitat designation may impose additional regulatory burdens on land use, we expect any such impacts to be short term. Additionally, critical habitat designation does not preclude development of HCPs and issuance of incidental take permits. Landowners in areas that are included in the designated critical habitat will continue to have the opportunity to utilize their property in

ways consistent with the survival of bighorn sheep.

Federalism

In accordance with Executive Order 13132, the rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this critical habitat proposal with, appropriate State resource agencies in California, as well as during the listing process. The designation of critical habitat for Peninsular bighorn sheep imposes no additional restrictions to those currently in place, and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the survival of the species are specifically identified. While making this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-range planning (rather than waiting for case-by-case section 7 consultations to occur) and may lead to quicker recovery of the species.

Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We designate critical habitat in accordance with the provisions of the Act and held public hearings on the proposed designation during the comment period. The rule uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of Peninsular bighorn sheep.

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

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

National Environmental Policy Act

We have determined that we do not need to prepare an Environmental Assessment and/or an Environmental Impact Statement as defined by the

National Environmental Policy Act of 1969 in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act, as amended. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship With Tribes

We have determined that there are Tribal Trust lands essential for the conservation of the Peninsular bighorn sheep because they contain the primary constituent elements that support Peninsular bighorn sheep populations, and provide essential linkages between ewe groups in the Peninsular Ranges metapopulation. Therefore, we are designating critical habitat for bighorn sheep on Trust lands of the Morongo Band of Mission Indians, Agua Caliente Band of Cahuilla Indians, and Torres-Martinez Desert Cahuilla Indians. In the future, we may revise this designation to exclude some or all of these lands from critical habitat upon a determination that the benefits of excluding them outweighs the benefits of designating these areas as critical habitat, as provided under section 4(b)(2) of the Act.

Lands within the Agua Caliente Reservation necessary to the survival

and recovery of Peninsular bighorn sheep occur within the current home range of the San Jacinto Mountains ewe group and provide a dispersal linkage to the northern Santa Rosa Mountains ewe group. The Tribe and Service are coordinating on the development of a habitat management plan that would protect Peninsular bighorn sheep and more clearly define how Indian lands would contribute to regional conservation planning and the overall recovery program for Peninsular bighorn sheep. We understand that this management plan will be proposed as an HCP and will be considered in any future critical habitat revisions.

On the Torres-Martinez Reservation, the Tribe and Service have discussed coordinating on a habitat analysis and management plan, if appropriate, that would be considered in any future revisions to critical habitat.

On the Morongo Reservation, the Tribe and Service are working on the development of an agreement that would describe coordination protocols for land use management decisions that would be considered in any future revisions to critical habitat.

References Cited

A complete list of all references cited in this final rule is available upon

request from the Carlsbad Fish and Wildlife Office (see **ADDRESSES** section).

Author: The primary authors of this notice are the Carlsbad Fish and Wildlife Office staff (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and record keeping requirements, Transportation.

Regulation Promulgation

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

PART 17—[AMENDED]

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

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

2. In § 17.11(h) revise the entry for “Sheep, bighorn” under “MAMMALS” to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *
(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*
MAMMALS							
*	*	*	*	*	*		*
Sheep, bighorn	<i>Ovis canadensis</i>	U.S.A. (western conterminous States), Canada (southwestern), Mexico (northern).	U.S.A. (CA) Peninsular Ranges.	E	634	17.95(a)	NA
*	*	*	*	*	*		*

3. In § 17.95 add critical habitat for the bighorn sheep (Peninsular Ranges) (*Ovis canadensis*) under paragraph (a) in the same alphabetical order as this species occurs in § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(a) *Mammals.*

* * *

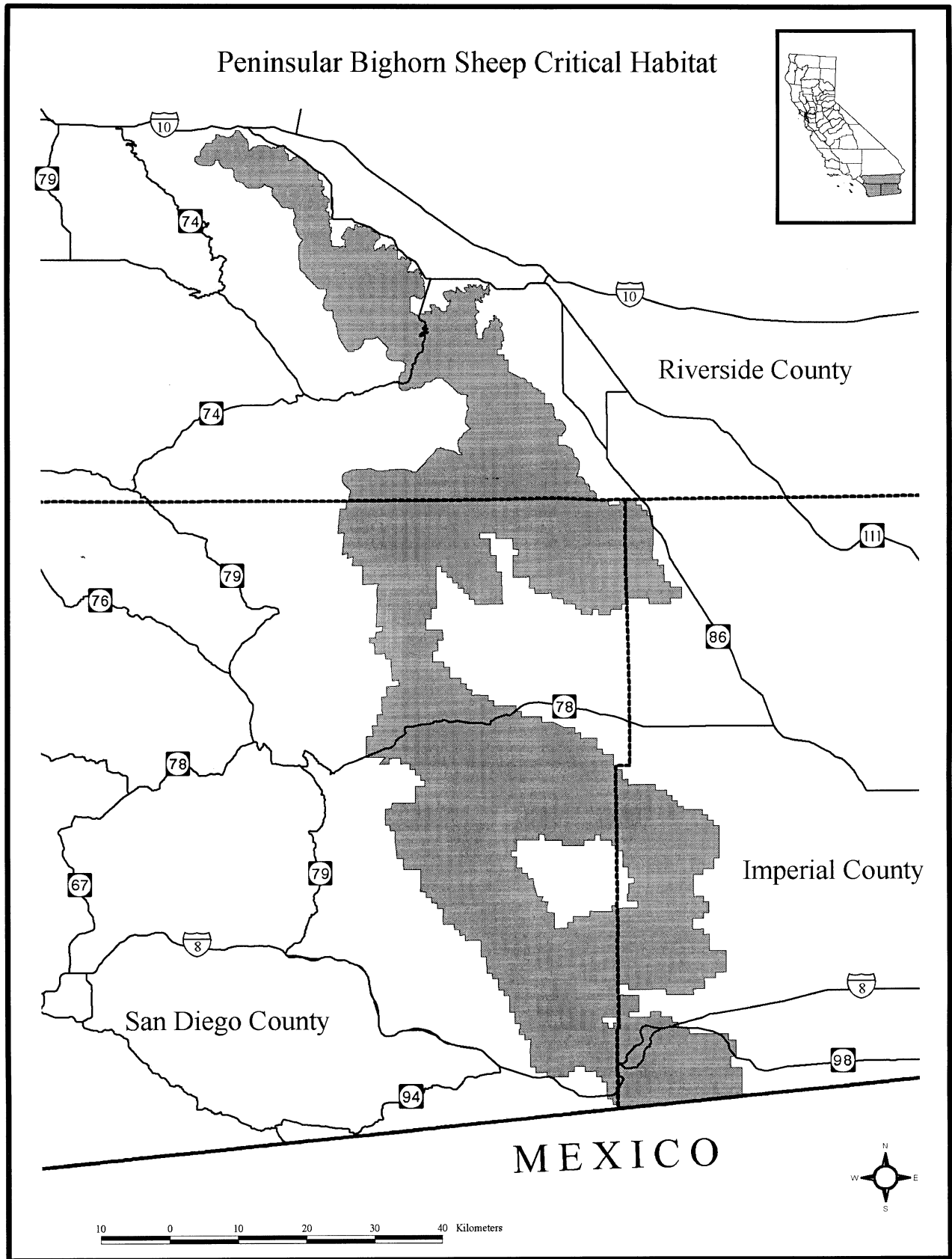
Bighorn Sheep (Peninsular Ranges) (*Ovis canadensis*)

1. The following map shows the general location of three contiguous designated critical habitat units for the

Peninsular bighorn sheep in Riverside, San Diego, and Imperial counties, California, respectively.

Note: Map follows:

BILLING CODE 4310–55–P



2. Within these areas, the primary constituent elements for Peninsular bighorn sheep are those habitat components that are essential for the primary biological needs of feeding, resting, reproduction and population recruitment, dispersal, connectivity between ewe groups, and isolation from detrimental human disturbance. The principal biological and physical constituent elements that are essential to the conservation of Peninsular bighorn sheep include: space for the normal behavior of groups and individuals; protection from disturbance; availability of the various native desert plant communities found on different topographic slopes, aspects, and landforms, such as steep slopes, rolling foothills, alluvial fans, and canyon bottoms; a range of habitats that provide forage, especially during periods of drought; steep, remote habitat for lambing, rearing of young, and escape from disturbance and/or predation; water sources; suitable linkages allowing individual bighorn to move freely between ewe groups and maintain connections between subpopulations.

3. Towns and similar developed lands, which do not provide primary constituent elements, are not critical habitat. Road and railroad rights-of-way, flood control facilities, or other facilities that must be traversed by bighorn sheep to maintain connectivity between subpopulations, or otherwise may provide food, water, or cover for Peninsular bighorn sheep, are considered to support primary constituent elements, and therefore are included as critical habitat.

Critical Habitat Unit 1: Riverside County, California. From USGS 1:100,000 quadrangle maps Borrego Valley (1982), and Palm Springs (1982), California, beginning at the Riverside-San Diego County line at Universal Transverse Mercator (UTM) Zone 11, North American Datum of 1927 (NAD27) X-coordinate 544400, land bounded by the following UTM NAD27 coordinates (X, Y): 544400, 3698700; 544500, 3698700; 544500, 3699200; 544600, 3699200; 544600, 3699600; 544700, 3699600; 544700, 3700200; 544600, 3700200; 544600, 3700300; 544500, 3700300; 544500, 3700400; 544300, 3700400; 544300, 3700500; 544200, 3700500; 544200, 3700600; 544100, 3700600; 544100, 3700700; 544000, 3700700; 544000, 3700800; 543900, 3700800; 543900, 3700900; 543800, 3700900; 543800, 3701100; 543700, 3701100; 543700, 3701200; 543600, 3701200; 543600, 3701500; 543500, 3701500; 543500, 3702200; 543600, 3702200; 543600, 3702400;

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543600, 3736000; 543600, 3736100;
543700, 3736100; then southwestward
along Bogert Trail and north on Andreas
Hills Drive to X-coordinate 544000; then
north and eastward along UTM NAD27
coordinates (X, Y) 544000, 3736300;
543900, 3736300; 543900, 3736600;
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548400, 3738100; 548400, 3738000;
548500, 3738000; 548500, 3738100;
548700, 3738100; 548700, 3738000;
549000, 3738000; to X-coordinate
549000 at the levee; then southward
along the top of the levee to Y-
coordinate 3735800; then eastward
along UTM NAD27 coordinates (X, Y)
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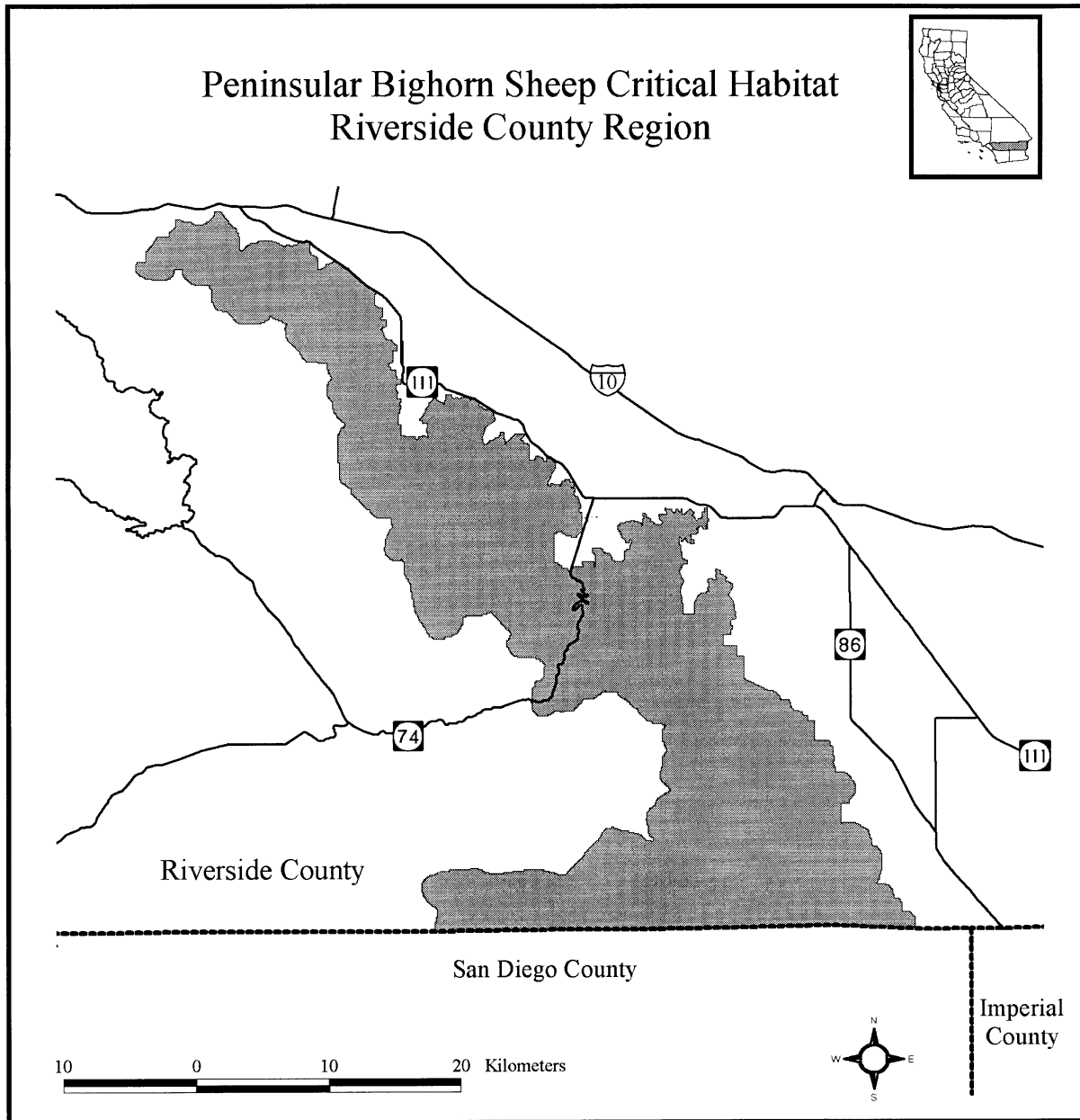
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550600, 3736100; 550600, 3736200;
551400, 3736200; 551400, 3736100; to
Y-coordinate 3736100 at the levee; then
southward along the top of the levee to
Y-coordinate 3735700; then
southwestward along UTM NAD27
coordinates (X, Y) 551300, 3735700;
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553500, 3734100; 553600, 3734100;
553600, 3734000; 553700, 3734000;
then south to the levee at X-coordinate
553700; then south along the top of the
levee to X-coordinate 553100; then east
and south along UTM NAD27
coordinates (X, Y) 553100, 3732300;
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555100, 3731700; 555100, 3731500;
555200, 3731500; 555200, 3731400;
555400, 3731400; 555400, 3731300;
then east to the levee at Y-coordinate
3731300; then southward along the top
of the levee to X-coordinate 555600;
then southward along UTM NAD27
coordinates (X, Y) 555600, 3730500;
555500, 3730500; 555500, 3730200;
555700, 3730200; then south along X-
coordinate 3730200 to the levee; then
southwest along the top of the levee to
Y-coordinate 3728400; then west, south
and eastward along UTM NAD27
coordinates (X, Y) 555300, 3728400;
555300, 3728300; 554900, 3728300;
554900, 3728400; 554500, 3728400;
554500, 3728500; 554400, 3728500;
554400, 3728600; 554200, 3728600;
554200, 3728800; 554100, 3728800;
554100, 3728700; 553800, 3728700;
553800, 3728600; 553600, 3728600;
553600, 3726400; 553900, 3726400;
553900, 3726300; 554000, 3726300;
554000, 3726200; 554200, 3726200;
554200, 3726000; 554600, 3726000;
554600, 3725800; 554700, 3725800;
554700, 3725700; 554800, 3725700;
554800, 3725600; 554900, 3725600;
554900, 3726000; 555000, 3726000;
555000, 3726100; 555800, 3726100;
555800, 3726300; 555700, 3726300;
555700, 3726500; 556600, 3726500;
556600, 3726100; 556700, 3726100;
556700, 3727000; 556600, 3727000;
556600, 3727100; 556500, 3727100;
556500, 3727500; 557200, 3727500;
557200, 3727400; 557300, 3727400;
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557500, 3727100; 557800, 3727100;
557800, 3727000; 557900, 3727000;
557900, 3726800; 558000, 3726800;
558000, 3726600; 558200, 3726600;
558200, 3726500; 558800, 3726500;
558800, 3726600; 558900, 3726600;
558900, 3727300; 559100, 3727300;
559100, 3727400; 559300, 3727400;
559300, 3727700; 559400, 3727700;
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558600, 3729400; 559000, 3729400;
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559400, 3729600; 559700, 3729600;
559700, 3729500; 560000, 3729500;
560000, 3729400; 560200, 3729400;
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560300, 3729700; 560400, 3729700;
560400, 3729900; 560300, 3729900;
560300, 3730100; 560500, 3730100;
560500, 3730000; 560600, 3730000;
560600, 3729800; 560800, 3729800;
560800, 3729700; 560900, 3729700;
560900, 3729500; 561100, 3729500;
561100, 3729400; 561200, 3729400;
561200, 3729300; then east to Eldorado
Drive at Y-coordinate 3729300; then
northward along Eldorado Drive to Y-
coordinate 3730000; then east to UTM
NAD27 coordinate 561800, 3730000;
then north to Eldorado Drive at X-
coordinate 561800; then eastward along
Eldorado Drive past X-coordinate
562000 and northward back to X-
coordinate 562000; then eastward and
southward along UTM NAD27
coordinates (X, Y) 562000, 3730500;
562100, 3730500; 562100, 3730400;
562500, 3730400; 562500, 3730200;
562600, 3730200; 562600, 3730100;
562700, 3730100; 562700, 3730200;
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563700, 3726600; 563700, 3726300;
563400, 3726300; 563400, 3726200;
563300, 3726200; 563300, 3726000;
563200, 3726000; 563200, 3725800;
563100, 3725800; 563100, 3725700;
then east to X-coordinate 563100 at the
levee; then southward along the top of
the levee past Y-coordinate 3723500 to
X-coordinate 563300; then along UTM
NAD27 coordinates (X, Y) 563300,
3723300; 563400, 3723300; 563400,
3722500; 564200, 3722500; then north
to Avenida Bermudas at X-coordinate
564200; then northwest along Avenida
Bermudas to Y-coordinate 3724000;
then north and eastward along UTM
NAD27 coordinates (X, Y) 564700,
3724000; 564700, 3724100; 565100,
3724100; 565100, 3724200; 565300,
3724200; 565300, 3724300; 565200,
3724300; 565200, 3724500; 565300,
3724500; 565300, 3724900; 565200,
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3725100; 565300, 3725200; 565600,
3725200; 565600, 3725100; 565900,
3725100; 565900, 3725300; 565800,
3725300; 565800, 3725500; 565900,
3725500; 565900, 3725700; 565800,
3725700; 565800, 3725900; 566000,

3725900; 566000, 3725800; 566200, 3725800; 566200, 3725500; 566400, 3725500; 566400, 3725400; 566600, 3725400; 566600, 3725300; 566700, 3725300; 566700, 3725200; 566600, 3725200; 566600, 3725000; 566800, 3725000; 566800, 3724900; 567000, 3724900; 567000, 3724800; 567100, 3724800; 567100, 3724700; then to a point 50 feet west of the Coachella Canal at Y-coordinate 3724700; then southward remaining 50 feet west of the Coachella Canal past Y-coordinate 3721800 to X-coordinate 567000; then southward along UTM NAD27 coordinates (X, Y) 567000, 3721600; 567100, 3721600; 567100, 3721300; 567000, 3721300; 567000, 3720900; 566400, 3720900; 566400, 3720100; 567400, 3720100; 567400, 3719300; 568000, 3719300; 568000, 3717600; 568100, 3717600; 568100, 3717500; 568300, 3717500; 568300, 3717400; 568500, 3717400; 568500, 3717300; 568700, 3717300; 568700, 3717200; 568900, 3717200; 568900, 3717100; 569100, 3717100; 569100, 3717000; 569300, 3717000; 569300, 3716900; 569500, 3716900; 569500, 3716800; 569700, 3716800; 569700, 3716700; 570200, 3716700; 570200, 3716600; 570400, 3716600; 570400, 3716500; 570500, 3716500; 570500, 3716400; 570600, 3716400; 570600, 3716300; 570700, 3716300; 570700, 3716100; 570800, 3716100; 570800, 3716000;

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Note: Map follows:



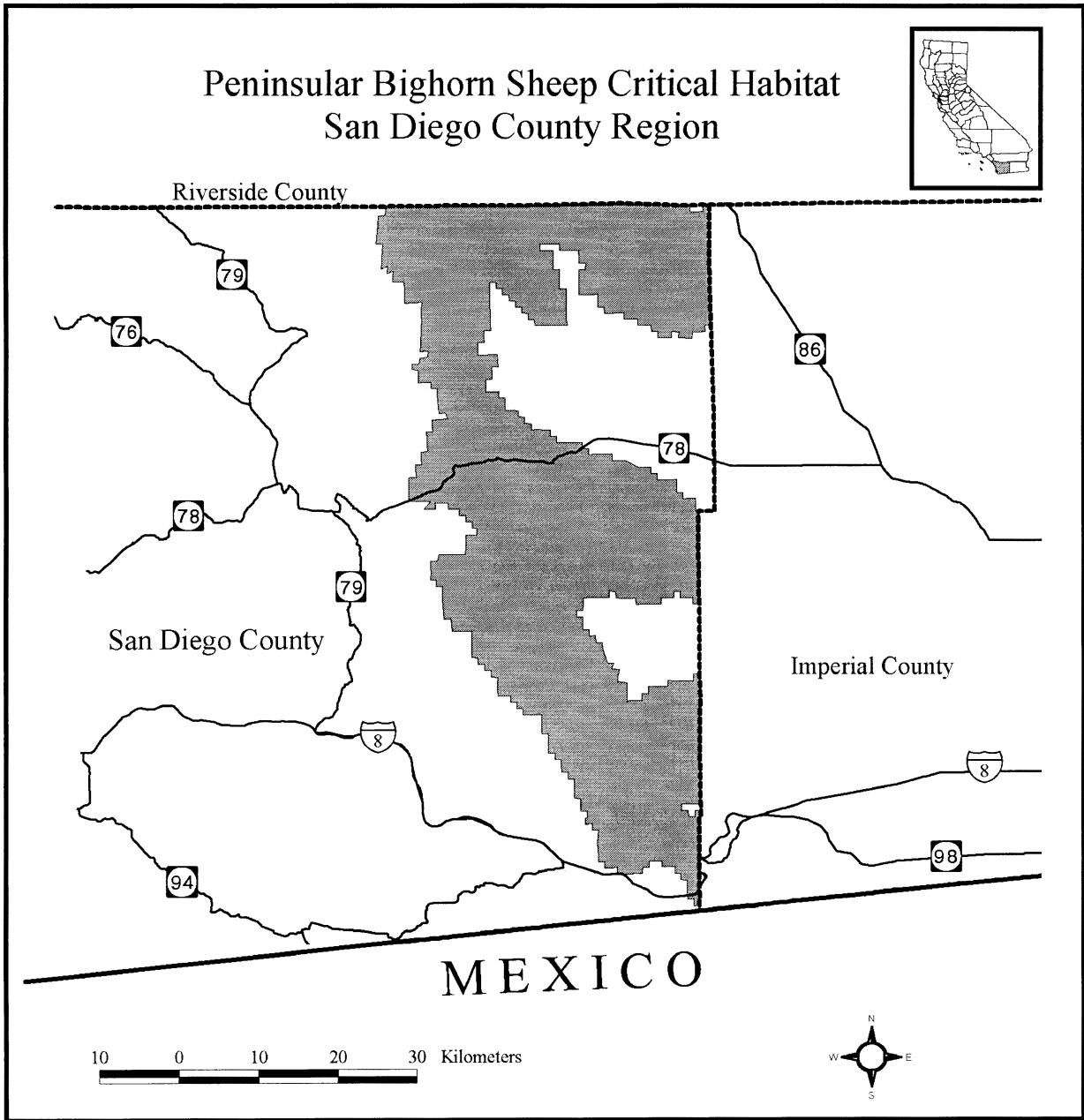
Critical Habitat Unit 2: San Diego County, California. From USGS 1:100,000 quadrangle maps Borrego Valley (1982) and El Cajon (1979), California. Lands in San Diego County within T9S, R4E, S1; T9S, R4E, S2SE; T9S, R4E, S11NE; T9S, R4E, S11SE; T9S, R4E, S12-S13; T9S, R4E, S14NE; T9S, R4E, S24; T9S, R4E, S25NW; T9S, R4E, S25NE; T9S, R4E, S25SE; T9S, R5E, S1-S36; T9S, R6E, S1-13; T9S, R6E, S14NW; T9S, R6E, S14NE; T9S, R6E, S15-S23; T9S, R6E, S24SW; T9S, R6E, S24SE; T9S, R6E, S25-S36; T9S, R7E, S1-S18; T9S, R7E, S19NE; T9S, R7E, S20NW; T9S, R7E, S20NE; T9S, R7E, S21-S27; T9S, R7E, S28NW; T9S, R7E, S28NE; T9S, R7E, S28SE; T9S,

R7E, S31NW; T9S, R7E, S31SW; T9S, R7E, S33-S36; T9S, R8E, S1NE; T9S, R8E, S1SE; T9S, R8E, S1SW; T9S, R8E, S2NW; T9S, R8E, S2SW; T9S, R8E, S2SE; T9S, R8E, S3-S36; T10S, R5E, S1-S5; T10S, R5E, S8NW; T10S, R5E, S8NE; T10S, R5E, S9-S28; T10S, R5E, S33NE; T10S, R5E, S33NW; T10S, R5E, S33SE; T10S, R5E, S34-S36; T10S, R6E, S1-S4; T10S, R6E, S5NE; T10S, R6E, S6-S7; T10S, R6E, S9NE; T10S, R6E, S10-S14; T10S, R6E, S15NE; T10S, R6E, S18-S19; T10S, R6E, S23NE; T10S, R6E, S24NW; T10S, R6E, S24NE; T10S, R6E, S30NW; T10S, R6E, S30SW; T10S, R7E, S1-S4; T10S, R7E, S6NW; T10S, R7E, S6SW; T10S, R7E, S6SE; T10S, R7E, S7; T10S, R7E, S10NE; T10S, R7E, S10SE;

T10S, R7E, S11-S12; T10S, R7E, S13NW; T10S, R7E, S13NE; T10S, R7E, S14NW; T10S, R7E, S14NE; T10S, R7E, S18; T10S, R7E, S19NW; T10S, R7E, S19NE; T10S, R8E, S1-S18; T10S, R8E, S19NE; T10S, R8E, S20NE; T10S, R8E, S20NW; T10S, R8E, S20SE; T10S, R8E, S21-S23; T10S, R8E, S24NW; T10S, R8E, S24NE; T10S, R8E, S24SW; T10S, R8E, S26NW; T10S, R8E, S27NE; T10S, R8E, S28NW; T10S, R8E, S28NE; T11S, R5E, S1-S4; T11S, R5E, S5SE; T11S, R5E, S9-S14; T11S, R5E, S15NE; T11S, R5E, S15NW; T11S, R5E, S15SE; T11S, R5E, S22NE; T11S, R5E, S22SE; T11S, R5E, S23-S26; T11S, R5E, S27NE; T11S, R5E, S34-S36; T11S, R6E, S5NW; T11S, R6E, S5SW; T11S, R6E,

S6-S7; T11S, R6E, S18NW; T11S, R6E, S18SW; T11S, R6E, S19; T11S, R6E, S20NW; T11S, R6E, S20SW; T11S, R6E, S20SE; T11S, R6E, S28SW; T11S, R6E, S28SE; T11S, R6E, S29-S33; T11S, R6E, S34NW; T11S, R6E, S34SW; T11S, R6E, S34SE; T12S, R5E, S1-S3; T12S, R5E, S4NE; T12S, R5E, S4SE; T12S, R5E, S9NE; T12S, R5E, S9SE; T12S, R5E, S9SW; T12S, R5E, S10-S16; T12S, R5E, S17SE; T12S, R5E, S20NE; T12S, R5E, S20SE; T12S, R5E, S20SW; T12S, R5E, S21-S33; T12S, R5E, S34NE; T12S, R5E, S34NW; T12S, R5E, S35-S36; T12S, R6E, 1NW; T12S, R6E, S1SW; T12S, R6E, S1SE; T12S, R6E, S2-S36; T12S, R7E, S7-S8; T12S, R7E, S9SW; T12S, R7E, S13SE; T12S, R7E, S13SW; T12S, R7E, S14SW; T12S, R7E, S15-S36; T12S, R8E, S18SE; T12S, R8E, S18SW; T12S, R8E, S19; T12S, R8E, S20NW; T12S, R8E, S20SW; T12S, R8E, S20SE; T12S, R8E, S21SW; T12S, R8E, S21SE; T12S, R8E, S27SW; T12S, R8E, S28-S34; T12S, R8E, S35NW; T12S, R8E, S35SW; T13S, R5E, S1NW; T13S, R5E, S1NE; T13S, R5E, S1SE; T13S, R5E, S13SE; T13S, R5E, S13NE; T13S, R5E, S22SE; T13S, R5E, S23SW; T13S, R5E, S23SE; T13S, R5E, S24NE; T13S, R5E, S24SW; T13S, R5E, S24SE; T13S, R5E, S25-S27; T13S, R5E, S34NW; T13S, R5E, S34NE; T13S, R5E, S34SE; T13S, R5E, S35-S36; T13S, R6E, S1-S6; T13S, R6E, S7NW; T13S, R6E, S7NE; T13S, R6E, S7SE; T13S, R6E, S8-S36; T13S, R7E, S1-S36; T13S, R8E, S1-S36; T14S, R5E, S1-S2; T14S, R5E, S11-S13; T14S, R5E, S14NW; T14S, R5E, S14NE; T14S, R5E, S14SE; T14S, R5E, S23NE; T14S, R5E, S24NE; T14S, R5E, S24NW; T14S, R6E, S1-S30; T14S, R6E, S31NW; T14S, R6E, S31NE; T14S, R6E, S31SE; T14S, R6E, S32-S36; T14S, R7E, S1NW; T14S, R7E, S1NE; T14S, R7E, S1SE; T14S, R7E, S2-S9; T14S, R7E, S16NW; T14S, R7E, S16SE; T14S, R7E, S16SW; T14S, R7E, S17-S21; T14S, R7E, S22SW; T14S, R7E, S26SW; T14S, R7E, S27-S34; T14S, R7E, S35NW; T14S, R7E, S35SW; T14S, R8E, S1; T14S, R8E, S2NE; T14S, R8E, S2NW; T14S, R8E, S2SE; T14S, R8E, S3-S6; T14S, R8E, S8NW; T14S, R8E, S8NE; T14S, R8E, S9NW; T14S, R8E, S9NE; T14S, R8E, S12NE; T15S, R6E, S1-S4; T15S, R6E, S5NW; T15S, R6E, S5NE; T15S, R6E, S5SE; T15S, R6E, S9-S15; T15S, R6E, S16NW; T15S, R6E, S16NE; T15S, R6E, S22NE; T15S, R6E, S23-S24; T15S, R6E, S25NE; T15S, R6E, S25SE; T15S, R6E, S36NE; T15S, R7E, S1SW; T15S, R7E, S2-S11; T15S, R7E, S12NW; T15S, R7E, S12SW; T15S, R7E, S12SE; T15S, R7E, S13-S36; T15S, R8E, S10SE; T15S, R8E, S11SW; T15S, R8E, S11SE; T15S, R8E, S12NE; T15S, R8E, S12SW; T15S, R8E, S12SE; T15S, R8E, S12SE; T15S, R8E, S13-S16; T15S, R8E, S17SE; T15S, R8E, S19-S36; T16S, R7E, S1-S6; T16S, R7E, S7NE; T16S, R7E, S8-S16; T16S, R7E, S17NW; T16S, R7E, S17NE; T16S, R7E, S17SE; T16S, R7E, S21-S27; T16S, R7E, S28NW; T16S, R7E, S28NE; T16S, R7E, S28SE; T16S, R7E, S33NE; T16S, R7E, S34-36; T16S, R8E, S1-S34; T16S, R8E, S35NW; T16S, R8E, S35SW; T16S, R8E, S35SE; T16S, R8E, S36SE; T17S, R7E, S1-S2; T17S, R7E, S3NE; T17S, R7E, S3NW; T17S, R7E, S3SE; T17S, R7E, S11-S14; T17S, R7E, S23NW; T17S, R7E, S23NE; T17S, R7E, S23SE; T17S, R7E, S24; T17S, R7E, S25NE; T17S, R8E, S1-S20; T17S, R8E, S21NW; T17S, R8E, S21NE; T17S, R8E, S22-S25; T17S, R8E, S26NW; T17S, R8E, S26NE; T17S, R8E, S26SE; T17S, R8E, S29NW; T17S, R8E, S30NW; T17S, R8E, S30NE; T17S, R8E, S36; T18S, R8E, S1NW; T18S, R8E, S1NE; T18S, R8E, S1SE. The following lands within the Valle de San Felipe Land Grant bounded by UTM NAD27 coordinates (X, Y): 547000, 3664000; 548000, 3664000; 548000, 3663000; 552000, 3663000; 552000, 3662000; 551000, 3662000; 551000, 3661000; 547000, 3661000; 547000, 3664000.

Note: Map follows:



Critical Habitat Unit 3: Imperial County, California. From USGS 1:100,000 quadrangle maps Borrego Valley (1982), El Cajon (1979), Salton Sea (1982), and El Centro (1982), California. Lands in Imperial County within T9S, R9E, S5SW; T9S, R9E, S6-S8; T9S, R9E, S9SW; T9S, R9E, S16NW; T9S, R9E, S16SW; T9S, R9E, S17-S20; T9S, R9E, S21NW; T9S, R9E, S21SW; T9S, R9E, S28NW; T9S, R9E, S28SW; T9S, R9E, S29-S32; T9S, R9E, S33NW; T9S, R9E, S33SE; T9S, R9E, S33SW; T10S, R9E, S3NW; T10S, R9E, S3SW; T10S, R9E, S4-S9; T10S, R9E, S10NW; T10S, R9E, S10SE; T10S, R9E, S10SW; T10S, R9E, S14-S18; T10S, R9E, S21NE;

T10S, R9E, S21NW; T10S, R9E, S22NE; T10S, R9E, S22NW; T13S, R9E, S6SW; T13S, R9E, S7NW; T13S, R9E, S7SE; T13S, R9E, S7SW; T13S, R9E, S14SW; T13S, R9E, S15NW; T13S, R9E, S15SE; T13S, R9E, S15SW; T13S, R9E, S16-S23; T13S, R9E, S24SW; T13S, R9E, S25-S36; T13S, R10E, S29SW; T13S, R10E, S30-S32; T13S, R10E, S33SW; T14S, R9E, S1-S17; T14S, R9E, S18NE; T14S, R9E, S18SE; T14S, R9E, S19NE; T14S, R9E, S20-S28; T14S, R9E, S29NE; T14S, R9E, S29NW; T14S, R9E, S29SE; T14S, R9E, S32-S36; T14S, R10E, S4NW; T14S, R10E, S4SW; T14S, R10E, S5-S8; T14S, R10E, S9NW; T14S, R10E, S9SW; T14S, R10E, S16NW; T14S,

R10E, S17-S19; T14S, R10E, S20NE; T14S, R10E, S20NW; T14S, R10E, S30NW; T14S, R10E, S30SW; T14S, R10E, S31NW; T14S, R10E, S31SW; T15S, R9E, S1-S5; T15S, R9E, S6NE; T15S, R9E, S7-S36; T15S, R10E, S5SW; T15S, R10E, S6-S7; T15S, R10E, S8NW; T15S, R10E, S19; T15S, R10E, S20SW; T15S, R10E, S29NW; T15S, R10E, S29SW; T15S, R10E, S30-S33; T16.5S, R9.5E, S1NW; T16.5S, R9.5E, S1SE; T16.5S, R9.5E, S1SW; T16.5S, R9.5E, S2; T16.5S, R10E, S4SE; T16.5S, R10E, S4SW; T16.5S, R10E, S5SE; T16.5S, R10E, S5SW; T16.5S, R10E, S6SE; T16.5S, R10E, S6SW; T16S, R9E, S1-S14; T16S, R9E, S15NE; T16S, R9E,

S15NW; T16S, R9E, S15SE; T16S, R9E, S16NE; T16S, R9E, S16NW; T16S, R9E, S17NE; T16S, R9E, S17NW; T16S, R9E, S18NE; T16S, R9E, S19; T16S, R9E, S28SE; T16S, R9E, S28SW; T16S, R9E, S30NE; T16S, R9E, S30NW; T16S, R9E, S30SW; T16S, R9E, S31-S34; T16S, R9E, S35SW; T16S, R10E, S4-S7; T16S,

R10E, S8NE; T16S, R10E, S8NW; T16S, R10E, S18NE; T16S, R10E, S18NW; T17S, R9E, S1-S36; T17S, R10E, S2-S10; T17S, R10E, S11NW; T17S, R10E, S11NE; T17S, R10E, S11SW; T17S, R10E, S13SW; T17S, R10E, S14NW; T17S, R10E, S14SW; T17S, R10E, S14SE; T17S, R10E, S15-S23; T17S,

R10E, S24NW; T17S, R10E, S24SW; T17S, R10E, S25NW; T17S, R10E, S25SW; T17S, R10E, S26-S35; T17S, R10E, S36NW; T17S, R10E, S36SW; T18S, R9E, S1-S6; T18S, R9E, S7NE; T18S, R9E, S7SE; T18S, R9E, S7NW; T18S, R9E, S8-S11.

Note: Map follows:



Dated: January 12, 2001.

Kenneth L. Smith,
Assistant Secretary for Fish and Wildlife and Parks.

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