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**Endangered and Threatened Wildlife and
Plants; Revised Designation of Critical
Habitat for *Astragalus magdalenae* var.
peirsonii (Peirson's Milk-Vetch); Final
Rule**

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

[FWS-R8-ES-2008-0019; 92210-117-0000-B4]

RIN 1018-AU98

Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for *Astragalus magdalenae* var. *peirsonii* (Peirson's Milk-Vetch)**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are designating final revised critical habitat for *Astragalus magdalenae* var. *peirsonii* (Peirson's milk-vetch) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 12,105 acres (ac) (4,899 hectares (ha)) fall within the boundaries of the revised critical habitat designation for *A. m.* var. *peirsonii*. The revised critical habitat is located in Imperial County, California. We are excluding Unit 2 from this revised designation based on the disproportionate economic and social impacts associated with the designation of this unit relative to the other units designated as critical habitat. This final revised designation constitutes a reduction of 9,758 ac (3,949 ha) from our 21,863 ac (8,848 ha) previous final designation of critical habitat for *A. m.* var. *peirsonii* published in 2004.

DATES: This rule becomes effective on March 17, 2008.

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

FOR FURTHER INFORMATION CONTACT: Jim Bartel, Field Supervisor, U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 6010 Hidden Valley Road, Carlsbad, CA 92011; telephone 760-431-9440; facsimile 760-431-5901. If you use a telecommunications device for the deaf (TDD), call the Federal

Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:**Background**

This final rule addresses revised critical habitat for *Astragalus magdalenae* var. *peirsonii*. For additional information on the taxonomy, biology, and ecology of this taxon, refer to the final rule listing the taxon as threatened, published in the **Federal Register** on October 6, 1998 (63 FR 53596), the proposed and final rules designating critical habitat for this taxon published in the **Federal Register** on August 5, 2003 (68 FR 46143) and on August 4, 2004 (69 FR 47330), respectively, and the proposed rule to revise critical habitat published in the **Federal Register** on July 27, 2007 (72 FR 41258). It is our intention to discuss only those topics directly relevant to the revised designation of critical habitat in this final revised rule.

Astragalus magdalenae var. *peirsonii* is an erect to spreading, herbaceous member of the Fabaceae (legume family) (Barneby 1959, p. 879; 1964, p. 862) that occurs on bowls, swales, and slopes of intact, active windblown sand dunes of the Algodones Dunes of Imperial County, California and the northeastern Estado de Baja California and Gran Desierto of northwestern Sonora, Mexico (Felger 2000, p. 300; Spellenberg 1993, p. 598; Willoughby 2005a, p. 2). Please refer to the "Primary Constituent Elements" section below for additional discussion on habitat requirements of this taxon. Plants may reach 8 to 27 inches (in) (20 to 70 centimeters (cm)) in height and develop tap roots (Barneby 1964, pp. 863-864) that penetrate deeply to the moister sand and that anchor plants in the shifting sand dunes. The root crown is often exposed by wind action moving the sand away from the base of the plants. Seeds are enclosed in fruits or pods and are either dispersed locally by falling out of partly opened fruits on the parent plant, "salt-shaker" style, or are dispersed further if blown across the sand after falling from the parent plant. Thus seeds can be transported from one favorable site to another, or remain near the parent plant, depending on winds (Phillips *et al.* 2001, p. 11).

Seeds require no pre-treatment to induce germination, but germination success has been shown to improve dramatically when the outer seed coat is scarified (e.g., scratched, chipped) (Porter *et al.* 2005, p. 29). Germination appears to be more successful in the cooler months of the year when temperatures are less than 86 °F (30 °C) (Romsper and Burk 1979, pp. 45-46).

Therefore, based on our current understanding of the taxon's life history, sufficient rain in conjunction with cool temperatures and wetter-than-average fall weather appears to trigger germination events.

Depending upon conditions, *Astragalus magdalenae* var. *peirsonii* is capable of flowering before it is one year old (Barneby 1964, p. 862; Romsper and Burk 1979, p. 16; Phillips *et al.* 2001, p. 10; Phillips and Kennedy 2005, p. 22). Porter *et al.* (2005, pp. 31-32) hypothesized that if rains occur early in the growing season, then flowering can begin in as little as 3 months after germination. If, on the other hand, rains (and germination) do not occur until late February, then flowering is delayed until the next rainy season. In dry years, individuals die and are not replaced by new seedlings.

This variability in annual abundance of above-ground plants has caused this taxon to be considered variously as an annual (completing its life cycle in a year or growing season) or a perennial (living for more than 2 years) (Munz 1932, p. 7; Munz 1974, p. 432; Barneby 1959, p. 879; Barneby 1964, p. 862; Spellenberg 1993, p. 598; Willoughby 2001, p. 21). Recent evidence has confirmed that this species is a short-lived perennial (Phillips *et al.* 2001, p. 10; Porter *et al.* 2005, pp. 31, 34). This taxon likely depends on the production of seeds in wetter years and the persistence of the seed bank from previous years to survive until appropriate conditions for germination occur again. Porter *et al.* (2005, p. 29) identified the primary dormancy mechanism in *Astragalus magdalenae* var. *peirsonii* as the impermeability of the seed coat to water and demonstrated little loss of viability in seeds stored for 5 years. This dormancy mechanism is consistent with species having a seed bank (Given 1994, p. 67). Dispersed seeds in a given year that do not germinate during the subsequent growing season become part of the soil seed bank (Given 1994, p. 67).

Species Distribution and Abundance

In the United States, *Astragalus magdalenae* var. *peirsonii* is restricted to about 53,000 ac (21,500 ha) in a narrow band running 40 miles (mi) (64 kilometers (km)) northwest to southeast along the western portion of the Algodones Dunes of eastern Imperial County, California, which is the largest sand dune field in North America. *Astragalus magdalenae* var. *peirsonii* has also been documented from the Gran Desierto of Sonora, Mexico (Felger 2000, p. 300) from an area south and southeast of the Sierra Pinacate lava

field, but the Service has no additional information on the size of the population or extent of area occupied (63 FR 53599). The taxon was noted from the Borrego Valley, California, by Barneby (1959, p. 879) but no verified, reproducing population exists (Porter *et al.* 2005, pp. 9–10). Other observations from Yuma, Arizona, and San Felipe, Baja California, Mexico, were based on misidentified specimens (see Porter *et al.* 2005, pp. 9–10, and Phillips *et al.* 2001, p. 7, for detailed accounts).

The Algodones Dunes (Dunes) are one of the largest sand dune fields in North America, extending about 40 mi (64 km), trending from northwest to southeast (Norris and Norris 1961, p. 608). Please refer to the 2003 proposed critical habitat rule for a more detailed discussion on the geomorphology of the Dunes (68 FR 46143). These dunes are often referred to as the Imperial Sand Dunes, a designation derived from their inclusion in the Imperial Sand Dunes Recreation Area (ISDRA) established by the Bureau of Land Management (BLM). The majority of the Dunes is managed by BLM within 8 management areas, of which 7 are occupied by *Astragalus magdalenae* var. *peirsonii* (Mammoth Wash, North Algodones Wilderness, Glamis, Gecko, Adaptive Management Area (AMA), Ogilby, and Buttercup). The State of California and private individuals own some small inholdings in the Mammoth Wash management area.

The ISDRA is the most popular off-highway vehicle (OHV) area in the southwest United States, with a specified major focus to ensure that

OHV recreation opportunities are continuously available while responding to increased need for protection of plant and animal species in the Dunes (BLM 2003, pp. 1–3). As a result of a settlement agreement reached in 2000, the BLM agreed to establish 5 interim closure areas within the Dunes, temporarily closing these areas to OHV recreation (see Index Map in “Rule Promulgation” section). These temporary closures are currently still in place.

The Dunes are in one of the driest and hottest regions in the United States. The rainfall is often described as scattered or patchy with amounts differing from place to place and from year to year, with areas to the northwest being generally dryer than those to the southeast (Willoughby 2001, p. 20). Romsper and Burk (1979, p. 11) reported average yearly rainfall during the period 1941–1970 was 2.6 in (66 millimeters (mm)). Average yearly rainfall between 1997 and 2002 at seven weather stations in the vicinity of the Dunes ranged from a low of 0.1 in (3.3 mm) during the 2001–2002 growing season to a high of 6.1 in (155 mm) in the 1997–1998 growing season (Willoughby 2004, p.13). Average yearly rainfall between 2002 and 2006 at two weather stations on the Dunes ranged from a low of 0.2 in (5.3 mm) during the 2005–2006 growing season to a high of 4.8 in (122 mm) during the 2004–2005 growing season (Willoughby 2006, p.18).

The distribution and abundance of *Astragalus magdalenae* var. *peirsonii* has been recorded during several

ongoing survey efforts. As discussed in the 2004 final critical habitat rule (69 FR 47330), the 1977 dunes-wide survey for *A. m.* var. *peirsonii* and four other rare psammophytic (sand-loving) scrub species (WESTEC 1977) was considered the most extensive survey of the Dunes conducted at that time. The BLM conducted rare plant surveys for 5 consecutive years from 1998 through 2002, generally repeating the methodology used by WESTEC in its 1977 survey (Willoughby 2001, p. iii). Raw data from the 2001 and 2002 surveys were provided by the BLM to the Service for use in the development of the 2004 final critical habitat rule. However, a written report of the 2001 and 2002 surveys (Willoughby 2004) was completed in October 2004, after the publication of the August 4, 2004, final critical habitat rule. As also discussed in the 2004 final critical habitat rule, Phillips and Kennedy (2002, 2003) conducted surveys for *A. m.* var. *peirsonii* from 2001 through 2003. Since publication of the 2004 final critical habitat rule, both the BLM (Willoughby 2005a, 2005b, 2006) and Phillips and Kennedy (2004, 2005, 2006) continued to conduct annual surveys for this species through 2006. Table 1 below summarizes all of the various survey efforts, including the number of sampling points or transects and the effective area surveyed by each effort as well as the estimated population by the survey methodology and the actual number of plants counted.

TABLE 1.—COMPARISON OF SURVEY DATA COLLECTED FOR ASTRAGALUS MAGDALENAE VAR. PEIRSONII IN THE DUNES; DATA TAKEN FROM 13 UNPUBLISHED REPORTS

Year	Surveyor	Number of plants counted	Estimated population	Number of samples	Effective area *ac)
1977	WESTEC	N/A	N/A	1,611	53,000
1998	BLM ¹	5,064	N/A	542	53,000
1999	BLM ¹	942	N/A	542	53,000
2000	BLM ¹	86	N/A	542	53,000
2001	BLM ¹	5,930	N/A	542	53,000
2002	BLM ¹	2,297	N/A	542	53,000
2001	Phillips ²	³ 71,926	N/A	127	~ 35,000
2001	Phillips ²	30,771	N/A	25	138
2003	Phillips ²	33,202	N/A	25	138
2005	Phillips ²	77,922	⁴ 173,328	25	138
2006	Phillips ²	1,233	⁴ 2,035	25	138
2004	BLM ¹	25,798	286,374	37,169	53,000
2005	BLM ¹	739,805	1,831,076	123,488	53,000
2006	BLM ¹	761	83,451	775	53,000

¹ BLM reports cited as Willoughby.

² Phillips reports cited as Phillips *et al.* or Phillips and Kennedy.

³ Reconnaissance of unspecified area.

⁴ Estimated population for 60 specific sample sites.

Since different methodologies and survey effort were used by the BLM as

compared to Phillips and Kennedy, it is difficult to compare the annual

estimates of dunes-wide species abundance reported from the two

different survey efforts. Early surveys conducted by WESTEC in 1977 (WESTEC 1977) and by BLM from 1998 through 2002 (Willoughby 2001, 2004) incorporated a methodology [whereby plants encountered along transects were qualitatively indexed to an abundance value] and represented in quadrants measuring 0.45 mi (0.72 km) on each side. Analysis of these coarse, dune-wide surveys could only provide relative comparisons of mean abundance values between years. In 2004, the BLM embarked on a new sampling methodology that sampled a larger portion of the Dunes in greater detail (Willoughby 2005a, pp. 1–5). Unlike previous surveys, the recent BLM surveys were scientifically and statistically designed to estimate the standing *Astragalus magdalenae* var. *peirsonii* population (Willoughby 2005a, 2005b, 2006). Data were compiled in adjacent 82 foot x 82 foot (ft) (25 meters x 25 meters (m)) cells along 2.5–3.1 mi (4–5 km) transects covering the full length of the Dunes, and all micro-habitats were sampled along each transect (Willoughby 2005b, pp. 1–3). Within these 82 ft x 82 ft (25 m x 25 m) cells, surveyors noted: The total number of plants; age class of plants; number of seedlings; number of flowering versus non-flowering plants; number of plants exhibiting damage from OHVs; and the number of plants showing damage from other sources (Willoughby 2005b, p. 3). The recent BLM surveys also increased the number of sample transects to 135 in 2004, and to 510 for the spring 2005 surveys (Willoughby 2005b). In 2006, the BLM used a randomized sample of 2005 known occupied cells during the very dry winter and spring of 2006 to yield a population estimate for the 2005–2006 survey year (Willoughby 2006, p. 6). Both the WESTEC and BLM surveys effectively covered the entire Dunes and thus encompassed all management areas containing *Astragalus magdalenae* var. *peirsonii* (Willoughby 2005a, p. 2).

By comparison, Phillips *et al.* (2001, p. 6) counted individual *Astragalus magdalenae* var. *peirsonii* from 127 specific locations covering an unspecified area of about 35,000 ac (14,165 ha) (Phillips and Kennedy 2002, Appendix A). Phillips and Kennedy (2002, 2003, 2004, 2005, 2006) then established 25 monitoring sites from these 127 locations for their multi-year survey effort, which had an effective area of about 138 ac (56 ha).

The disparity between these three survey methods and the data collected makes it difficult to assess status and trends of the *Astragalus magdalenae* var. *peirsonii* population. However, we

consider the surveys conducted by BLM to be the most extensive and precise effort to determine overall population abundance and distribution for this species because this effort effectively covered the entire Dunes and thus encompassed all management areas containing *Astragalus magdalenae* var. *peirsonii*, and because the amount of data gathered in 2005 was the result of an exceptionally good rainfall year and extraordinary monitoring effort. We agree with the BLM that the 2005 survey effort represents the best estimate to date of distribution and abundance of the species on the Dunes (Willoughby 2006, p. v). The 2005–2006 survey year was an exceptionally dry year, with no *A. m.* var. *peirsonii* germination reported (Willoughby 2006, p. vi).

While direct comparison of annual estimates of *Astragalus magdalenae* var. *peirsonii* abundance reported by BLM and Phillips and Kennedy is difficult due to differences in survey methodologies and effort used by the surveyors, some comparisons can be made which illustrate the wide variation in numbers of standing individuals found in any given year and in any given area of the Dunes depending on abundance and distribution of rainfall. If we compare BLM data from 1998 with BLM 2000 data, and compare Phillips and Kennedy's 2001 data with their 2003 data, we see the annual variation in species abundance at occupied sites. Along the same series of west to east transects, BLM counted a total of 5,064 plants in 1998, a heavy rainfall year, and 86 plants in 2000, a low rainfall year (Willoughby 2004, p. 36). The record of steep decline of the cohort counted by Phillips *et al.* in 2001 was tracked by Phillips and Kennedy (2002, p. 18), who reported that only 26 percent of the plants seen in spring of 2001 were present in late 2001. Phillips and Kennedy (2003, p. 12) also reported that only 0.26 percent of the plants counted in spring 2001 survived to spring 2003.

This wide variation in numbers of standing individuals is also evident when comparing results of the BLM's dunes-wide surveys conducted in 2004, 2005, and 2006. In 2004, estimated dunes-wide abundance was 286,374 plants (5.5 plants/ac (13.5/ha)) (Willoughby 2005a, p. 37). In 2005, estimated dunes-wide abundance was 1,831,076 plants (39.8 plants/ac (86/ha)) (Willoughby 2005b, pp. 9–11). In 2006, estimated dunes-wide abundance was 83,451 plants (1.6 plants/ac (3.9/ha)) (Willoughby 2006, p. vi). Differences in densities (plants per acre) are likely due to differences in rainfall between years.

An above average amount of rainfall was recorded during the 2004–2005 growing season, resulting in the greatest abundance of plants to date, while the 2005–2006 growing season was considered an exceptionally dry year, resulting in zero reported germination. Density in 2004 may have also been decreased due to higher average monthly maximum temperatures recorded during the survey period, potentially impacting germination (Willoughby 2005a, p. 12).

In any given year, *Astragalus magdalenae* var. *peirsonii* may be present as standing plants, as a “soil seed bank” in the sand dunes, or as plants persisting as perennial root crowns in the sand dunes. During any given year, the suitable habitat for *A. m.* var. *peirsonii* may be occupied by various combinations of these three life history phases. The dynamics of dune morphology, local rainfall patterns and amounts, and the spatial distribution of the soil seed bank contribute to the patchy or mosaic nature of the distribution of standing plants of *A. m.* var. *peirsonii*. As discussed above, local rainfall patterns and amounts are likely to cause shifts in the proportions of these three life history phases.

This species was federally listed as threatened due to threats of increasing habitat loss from OHV use and associated recreational development, destruction of plants, and lack of protection afforded the plant under State law (63 FR 53596). Impacts to individual plants and their habitat associated with OHV activities and recreation development continue to be the primary threat to this species in the United States. Please refer to the final listing rule (63 FR 53596) for a detailed discussion of the threats to the species and to the “Special Management Considerations or Protection” section of this final revised rule for a more detailed discussion on threats to this species' habitat.

Previous Federal Actions

On August 4, 2004, we published a final rule designating approximately 21,863 ac (8,848 ha) of critical habitat for *Astragalus magdalenae* var. *peirsonii* in Imperial County, California (69 FR 47330). Following publication of the final rule, a lawsuit was filed against the BLM and the Service alleging, among other violations related to protection of *A. m.* var. *peirsonii* and desert tortoise (*Gopherus agassizii*), that the Service did not properly consider and weigh the benefits and costs associated with designating critical habitat for *A. m.* var. *peirsonii*. The lawsuit was filed by the Center for Biological Diversity, Sierra

Club, Public Employees for Environmental Responsibility, and Desert Survivors (*Center for Biological Diversity et al., Plaintiffs v. Bureau of Land Management et al., Defendants, and American Sand Association, et al., Defendant Intervenors*, case 3:03-cv-02509). In a September 25, 2006, order and injunction regarding final relief, the court ordered the Service to submit for publication a new final critical habitat rule to the **Federal Register** no later than February 1, 2008. In addition, the Court ordered that the August 4, 2004, final critical habitat designation remain in full regulatory force and effect pending completion of the new final critical habitat rule for *A. m. var. peirsonii*. When effective, this final revised rule replaces the August 4, 2004, final critical habitat designation.

On July 27, 2007 (72 FR 41258), we published a notice in the **Federal Register** announcing: (1) The availability of the proposed rule to designate approximately 16,108 ac (6,519 ha) of land within Imperial County, California, as revised critical habitat for *Astragalus magdalenae* var. *peirsonii*; (2) the availability of the draft economic analysis (DEA) of the proposed rule to revise critical habitat for public review; and (3) the scheduling of public hearings on the proposed critical habitat designation and DEA. Public hearings were conducted on August 23, 2007, in Carlsbad, California. The public comment period closed on September 25, 2007.

Summary of Comments and Recommendations

We requested written comments from the public on the proposed rule to revise critical habitat for *Astragalus magdalenae* var. *peirsonii* and the associated DEA published on July 27, 2007 (72 FR 41258). During the comment period, we requested all interested parties to submit comments or information related to the proposed revision to the critical habitat designation, including, but not limited to, the following: Unit boundaries, species occurrence information and distribution, land use designations that may affect critical habitat, potential economic effects of the proposed designation, benefits associated with critical habitat designation, areas considered but not proposed for designation and the associated rationale for the non-inclusion or exclusion of these areas, and methods used to designate critical habitat.

We also contacted appropriate Federal and State agencies, County governments, elected officials, and other

interested parties through telephone calls, letters, and news releases sent by facsimile, U.S. mail, or electronic mail, and invited them to comment on the proposed revised rule and the associated DEA. We also invited public comment through the publication of a notice in the San Diego Union-Tribune. In addition, we held two public hearings on August 23, 2007, from 1 p.m. to 3 p.m. and from 6 p.m. to 8 p.m. in Carlsbad, California. Transcripts of these hearings are available for inspection (see **ADDRESSES**).

During the comment period that opened on July 27, 2007, and closed on September 25, 2007, we received 61 comments directly addressing the proposed revised critical habitat designation and the DEA: 3 from peer reviewers, 1 from a Federal agency (BLM), and 57 from organizations or individuals. We received no comments from State or local agencies.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from seven knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. We received responses from three of the peer reviewers. The peer reviewers were generally supportive of the designation of critical habitat. Most, however, recommended adjusting the proposed critical habitat boundaries and altering management strategies to provide for better coexistence of OHV recreation and *Astragalus magdalenae* var. *peirsonii* survival and recovery.

We reviewed all comments received from the peer reviewers and the public for substantive issues and new information regarding critical habitat for *Astragalus magdalenae* var. *peirsonii*. All comments received were grouped into general issue categories relating to the proposed rule to revise critical habitat for *A. m. var. peirsonii* and are addressed in the following summary and incorporated into this final revised rule as appropriate.

Peer Reviewer Comments

Comment 1: One peer reviewer suggested the entire Dunes system should be designated critical habitat since *Astragalus magdalenae* var. *peirsonii* grows throughout the dune system.

Our Response: The Act defines critical habitat as the specific areas within the geographical area occupied by the species at the time it is listed on which are found those physical or

biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed upon a determination by the Secretary that such areas are essential for the conservation of the species. We believe that our proposed and final designations accurately describe all areas meeting the definition of critical habitat for *Astragalus magdalenae* var. *peirsonii*. Application of the of the criteria described below (see "Criteria Used to Identify Critical Habitat" section of the proposed rule and this final rule) captures areas supporting the physical and biological features that are essential to the conservation of the species, identified as the primary constituent elements (PCEs) laid out in the appropriate quantity and spatial arrangement essential for the conservation of the species. Thus, not all areas supporting the identified PCEs will meet the definition of critical habitat. We did not designate the entire dune system as critical habitat because we do not believe that the entire dune system meets the definition of critical habitat for *Astragalus magdalenae* var. *peirsonii*. Areas outside the proposed critical habitat designation will continue to be subject to conservation actions implemented under section 7(a)(1) of the Act and regulatory protections afforded by the section 7(a)(2) jeopardy standard and the prohibitions of section 9 of the Act.

Comment 2: According to one peer reviewer, the most populous site in the Dunes in terms of number of plants found during a 2004–05 survey was along the International Boundary in the southern portion of Subunit 4 (Phillips and Kennedy 2005). The third and fourth most populous sites were also in this subunit. Because these sites have been systematically excluded from BLM surveys, the commenter recommended that a Geographic Information System (GIS) specialist should determine if these three sites are included in the proposed critical habitat, and if not, adjust the boundaries to include them.

Our Response: After reviewing the GIS data, we have determined that the survey sites referenced by Phillips and Kennedy 2005 are within the boundaries of the critical habitat designation.

Comment 3: One reviewer questioned the necessity of including 92 percent of the *Astragalus magdalenae* var. *peirsonii* populations within the critical habitat designation to maintain species viability. The reviewer further suggested that using a lower percentage of

captured populations may allow for more intervening areas between designated areas of critical habitat, where pass-through routes for OHVs could be placed.

Our Response: Including 92 percent of the *Astragalus magdalenae* var. *peirsonii* population observed in 2005 was not one of the criteria of the proposed critical habitat designation; rather, it was a result of applying the methodology outlined in the proposed rule. OHV usage patterns were not taken into consideration when proposing revisions to critical habitat for *A. m.* var. *peirsonii*. The most appropriate locations for OHV pass-through routes may be determined by the BLM as part of their management plan.

Comment 4: One reviewer expressed concern that designating all of Subunit 3A and the northern portion of Subunit 3B as critical habitat could result in greater impacts to *Astragalus magdalenae* var. *peirsonii* than are now taking place. The reviewer stated that those areas received little relative OHV use from 1998 through 2001 (Willoughby 2001), and predicted the formation of "sand highways," as currently observed around existing closure stakes, which may increase disturbance if critical habitat designation results in closures to OHV use in those areas.

Our Response: We will work with the BLM to avoid or minimize these potential impacts during future section 7 consultations, as appropriate, and recommend the BLM take these potential impacts into consideration when developing their management plans.

Comment 5: One peer reviewer stated that according to McGrann et al. (2005), moderate to high levels of OHV use can significantly decrease the abundance of *Astragalus magdalenae* var. *peirsonii* seedlings, while low levels of OHV use does not significantly affect *A. m.* var. *peirsonii*. The reviewer suggested that the entire dune system could be opened to OHV use if a management scheme were put in place reducing the number of OHV recreationists using the Dunes to low levels that would not significantly affect *A. m.* var. *peirsonii*.

Our Response: On Federal land, it is the responsibility of the appropriate land management agency to develop and implement resource management plans. Comments and suggestions regarding resource management in the Dunes should be directed to the BLM. As part of developing and implementing a recovery strategy for a listed species, we do consider site-specific management strategies important to the conservation of the species and we also

work with land owners, managers, researchers, and others to develop and implement them, as appropriate, as part of the recovery process.

Comment 6: One peer reviewer stated that reproductive success of *Astragalus magdalenae* var. *peirsonii* is not dependent upon the presence of flowering plants between bowls (hollows among the dunes), and that no basis was presented in the proposed rule for the assumption that areas between bowls are important for maintaining gene flow within the population. According to this reviewer, the growing season of 2004 to 2005 was the first season since 2000 that showed plants growing in any quantity on ridges and other features between the bowls that constitute the main habitat of *A. m.* var. *peirsonii*. The reviewer was concerned whether pass-through routes for OHVs could be designated within critical habitat in areas that are normally unoccupied without impeding gene flow.

Our Response: The most appropriate locations for OHV pass-through routes through designated critical habitat may be determined by the BLM as part of their management plan if deemed necessary. We do not concur with the reviewer's suggestion that because areas between bowls are not consistently occupied by *Astragalus magdalenae* var. *peirsonii* plants, they may be less important for maintaining gene flow within the population. Gene flow is influenced by the movement of pollinators and the wind dispersal of fruit and seeds. It is not necessary that *Astragalus magdalenae* var. *peirsonii* plants be present in an area for that area to be important to gene flow.

Comment 7: One peer reviewer suggested consideration should be given to associated habitat and taxa necessary for the accumulation of nitrogen-containing compounds when designating critical habitat for *Astragalus magdalenae* var. *peirsonii*. The presence of detritivores such as termites, herbivores, and woody debris, such as that from *Croton wigginsii* and *Eriogonum deserticola*, should be present in sufficient quantities to allow for the continued support of this species in areas that have been designated critical habitat when sufficient rainfall is available.

Our Response: The psammophytic scrub plant community that supports detritivores and other biota, of which *Astragalus magdalenae* var. *peirsonii* is a component, is included as a PCE in the rule. The need to preserve this community was considered in our analysis. While we did not specifically analyze the role detritivores play in

providing mineral resources to *A. m.* var. *peirsonii*, we believe that the associated psammophytic scrub plant community within designated critical habitat should support detritivores in sufficient quantities to provide the necessary mineral resources for *A. m.* var. *peirsonii*.

Comment 8: One peer reviewer pointed out that given the constant shifting of the Dunes, the Dunes are relatively non-static; therefore, critical habitat designated in 2007 may not be as viable in 2015 because the depth of available *Astragalus magdalenae* var. *peirsonii* seed and the aspect of bowls may change over time. The reviewer suggested that we allow for the dynamic nature of the dune landscape by designating critical habitat units that are "oriented slightly NW to SE from proposed positions" in some instances.

Our Response: *Astragalus magdalenae* var. *peirsonii* is adapted to the non-static nature of the Dunes. If the aspect of bowls changes over time without changing geographic position, they likely would remain within critical habitat. Critical habitat can also be revised if new information indicates changes in the distribution of essential features have occurred (this current rule is such a revision).

Comment 9: One peer reviewer commented that Phillips and Kennedy (2005) documented plants germinating and flowering in the first growing season twice over the past seven years. The reviewer suggested we cite this data-based conclusion rather than the Porter et al. (2005) hypothesis on page 41259 of the proposed rule (72 FR 41258; July 27, 2007).

Our Response: Phillips and Kennedy (2005) were cited in the proposed critical habitat (see 72 FR 41259, third column, second full paragraph, first sentence). We believe that both citations are relevant.

Comment 10: One reviewer noted that reference to the existence of a seed bank for *Astragalus magdalenae* var. *peirsonii* is made on numerous occasions in the proposed rule, but Phillips and Kennedy's (2002, 2006) two reports detailing studies of the seed bank are not cited. The reviewer suggested that these reports either be acknowledged, or a reason presented for their exclusion.

Our Response: Although the two studies in question do provide valuable information regarding the seed bank of *Astragalus magdalenae* var. *peirsonii*, we determined that it was not appropriate to cite either study in relation to the specific statements referenced in the rule.

Comment 11: One reviewer recommended that the Service form an

advisory committee comprised of representatives from affected agencies and advocacy groups with the goal of developing a critical habitat designation.

Our Response: Through our rulemaking process, we have solicited input from affected agencies and advocacy groups via our request for comments on the proposed critical habitat designation and during the public hearings. All comments received have been considered and incorporated into the final critical habitat rule as appropriate. Therefore, we believe we have appropriately sought and considered the opinions of all interested parties during the promulgation of this revised rule.

Comment 12: All three peer reviewers offered recommendations intended to improve management of the Dunes to allow coexistence of *Astragalus magdalenae* var. *peirsonii* and OHV use in coordination with the critical habitat designation, or to alter the proposed critical habitat designation based on dune management considerations.

Our Response: On Federal land, it is the responsibility of the appropriate land management agency to develop and implement resource management plans. Comments and suggestions regarding resource management in the Dunes should be directed to the BLM. As part of developing and implementing a recovery strategy for a listed species, we do consider site-specific management strategies important to the conservation of the species and work with landowners, managers, researchers, and others to develop and implement such strategies, as appropriate, as part of the recovery process.

Public Comments

Comment 13: A number of commenters asserted that scientific evidence supports the hypothesis that OHV activity does not harm *Astragalus magdalenae* var. *peirsonii* populations. Some commenters cited personal observations that the habitat has changed little during their history of visitation and that OHV users deliberately avoid *A. m. var. peirsonii* because of damage to tires.

Our Response: The commenters did not provide any additional scientific information or data to support the hypothesis that OHV activity does not harm *Astragalus magdalenae* var. *peirsonii* populations. The best scientific information suggests that OHV use can damage *A. m. var. peirsonii* habitat (Groom *et al.* 2007). Groom *et al.* (2007, p.132) demonstrated that OHV impact reduced the survival of small *A. m. var. peirsonii* individuals by 33

percent over a 3 month period. Further, this study indicated that within the Dunes, areas open to OHV use supported 4 to 5 times fewer plants than areas closed to OHV use (Groom *et al.* 2007, p. 130). However, in the relatively short time frame that *A. m. var. peirsonii* has been monitored, populations of the plant appear to persist in areas of OHV use, perhaps because OHV users tend to avoid *A. m. var. peirsonii* as asserted by the commenter. Further monitoring may show whether this persistence will continue over time and which factors, including avoidance, influence *A. m. var. peirsonii* persistence.

Comment 14: One commenter asserted the proposed revised rule did not include all the best available science. Specifically the commenter asserted the proposed revised rule did not: (1) Incorporate data from monitoring other than those collected during 2004–2005; in particular no data was considered from the highest precipitation season (1997–1998); (2) take into consideration that more conservative design and implementation of conservation plans are required for species whose numbers are not stable (cited Noss *et al.* 1997); (3) take into consideration the hypothesis that genetically similar plants may not be able to produce viable seeds, and therefore populations must maintain a “large number of individuals” (cited Porter *et al.* 2005); and (4) take into consideration the transient or shifting nature of *Astragalus magdalenae* var. *peirsonii* habitat distribution. The commenter asserted the Dunes are documented to migrate in a southeasterly direction 16 to 66 ft (5 to 20 m) per year (cited Porter *et al.* 2005); therefore, the proposed critical habitat may not include the primary constituent elements (PCEs) in 100 years.

Our Response: Regarding the commenter's first assertion, we did take into consideration the 1998 data, but found the 2004 to 2005 data to be more appropriate for use in our critical habitat model. For example, the 2005 study more intensively sampled areas found to be occupied in the 1998 study, and distribution information had a finer geographic resolution (provided more spatial detail). Also, average annual rainfall during both sample seasons was approximately double the annual average in the ISDRA (which includes approximately 167,000 ac (67,582.50 ha) of the Dunes), and when data from all 1997–2005 surveys are overlaid on proposed revisions to critical habitat, all higher density distribution areas within sample sites appear to be captured. It is not likely that final revisions to critical habitat would have been altered by

inclusion of data from years other than 2005. In the proposed revision to critical habitat (72 FR 41258; July 27, 2007), we cited Willoughby's 2001 report with 1997 to 1998 survey data 5 times; in the background section regarding variability in annual abundance of above-ground plants, rainfall variability, and data availability, we specifically stated that this information was considered in our methodology. Regarding the commenter's second assertion, although we do consider conservation and recovery standards when designing critical habitat, critical habitat is not a conservation plan. The design and implementation of conservation initiatives will be addressed by those charged with management of Dunes lands (e.g., the BLM). Regarding the commenter's third assertion, although Porter *et al.* (2005) did conclude that a “large number of individuals” must be maintained because of the need for high genetic diversity at the self-incompatibility loci (location of genes on the DNA strand), he did not give any quantitative estimate of what was meant by “large.” Porter also concluded that the number of individuals present in the ISDRA is “quite high,” and the number of individuals is not as important as the genetic diversity of individuals present. No information provided by Porter (2005) indicates that areas not included in proposed revisions to critical habitat (72 FR 41258; July 27, 2007) contain individuals with higher genetic diversity, or that densities we used as criteria for including areas in the critical habitat designation were too low. Regarding the commenter's fourth assertion, future recovery plans, habitat conservation plans, or other species conservation planning efforts will take into consideration changes in the distribution of essential features, if new information indicates such changes have occurred. Critical habitat can also be revised if new information indicates changes in the distribution of critical habitat have occurred (this current rule is such a revision). We do not believe it is prudent to predict dune position 100 years into the future, especially considering changes in temperatures, precipitation amounts, wind patterns, and extreme weather, including droughts, heavy precipitation, and climate change predicted globally (IPCC 2007, pp. 8–9) and in southern California (Field *et al.* p. 52; Seager *et al.* 2007, p. 1181).

Comment 15: One commenter alleged the proposed revised rule is flawed because it does not include all occupied habitat, and does not include any unoccupied habitat. Specifically: (1) No

scientific justification was given for the use of 100 plants per 2.5-ac (1-ha) density as a criterion for inclusion; (2) the 328 ft (100 m) distance between 2.5 ac (1 ha) core areas does not take into consideration the distance *Astragalus magdalenae* var. *peirsonii* inflated seedpods can disperse; (3) the area required to assure species persistence and recovery depends on numerous other attributes besides density (cited Burgman *et al.* 2001); and (4) recent science indicates occupied habitat containing populations on the periphery of the range of the species is essential to long-term species survival, especially with regard to preservation of local genetic diversity (cited Leppig and White 2006, Gapare *et al.* 2005, Channell and Lomolino 2000, Lammi *et al.* 1999) and global climate change (cited Safriel *et al.* 1994).

Our Response: Regarding the commenter's first statement, we are not aware of any published scientific information providing quantified density requirements for this species, and no such information was provided by the commenter. As discussed in the "Summary of Changes from the Previously Designated Critical Habitat and 2007 Proposed Revised Rule" section below, the reference to 100 plants/ha was an error in the proposed rule, and the actual density used was 480 plants/ha. Since no established density criteria exist for *Astragalus magdalenae* var. *peirsonii*, we chose the 480 plants/ha based on the qualitative observation that it captured the majority of large clusters of standing plants and the belief that these densities are likely to be correlated with high-quality habitat characteristics (e.g., suitable dune morphology, soil moisture) and high-density seed banks. We also note that this density only applied to cells selected in the first criterion as a starting point for inclusion, and was not exclusive of adjacent, potentially lower density areas. We subsequently expanded each cell to a size 16 times greater. The first criterion captured approximately half of the 2005 observed population, while after all subsequent criteria were applied, approximately 92 percent had been captured.

Regarding the commenter's second statement, we agree the potential distance seeds can be dispersed is greater than 328 ft (100 m); however, we aggregated the 2.5-ac (1-ha) core areas within 328 ft (100 m) of each other to maintain unoccupied space for wind dispersal of seeds between occupied dune bowls. This 328 ft (100 m) distance is a Dunes-wide approximation of the average distance between aggregated core areas.

Regarding specific comments 3 and 4, these comments, and all scientific papers cited by the commenter, are based on the density or importance of distinct biological populations on the periphery of a species' range and do not apply to *Astragalus magdalenae* var. *peirsonii* in the context of this rule. The entire range of *A. m.* var. *peirsonii* within the ISDRA appears to function as a single population with a semi-continuous distribution (includes movement areas, a semi-continuous distribution of standing plants) composed of spatially clustered, but not isolated, "colonies" (Porter 2005, p. 14, 21). Even colonies not connected by habitat for adult growth (for example, separated by a highway) would not be independent biological populations unless the non-growth habitat area significantly reduced genetic exchange among colonies. Although Porter (2005, p. 17) sampled 30 "populations," the word population in that context refers to statistical, not biological, populations.

Comment 16: One commenter asserted that the proposed rule is flawed because it fails to address all primary constituent elements (PCEs). Specifically: (1) Habitat for the white-faced digger bee (*Habropoda pallida*, the most common pollinator), the digger wasp, or the European honeybee should have been included, because pollination is required in order for *Astragalus magdalenae* var. *peirsonii* to set viable seeds (cited Porter 2005); and (2) by removing core areas over 1,312 ft (400 m) from higher density core areas, the proposal fails to include areas containing the PCE "intervening areas for gene flow and connectivity within the population." The commenter asserted that basic conservation biology principles dictate the need for large connected areas of habitat that support essential ecological functions such as pollinator habitat and seed dispersal (cited Noss *et al.* 1997). The commenter stated that although data on forage distances for native pollinators are not available, studies of other solitary bees found a foraging distance ranged from 492 to 1,969 ft (150 to 600 m) (cited Gathmann and Tscharntke 2002) and the median foraging range of the European honeybee is 3.8 mi (6.1 km) (cited Beekman and Ratnieks 2000).

Our Response: Primary constituent element number 2 as defined in the proposed revised rule states that habitat for insect pollinators, particularly the white-faced digger bee, is required for reproduction of *Astragalus magdalenae* var. *peirsonii*, and we believe the proposed revised critical habitat incorporates sufficient habitat to support these pollinator species. The

information regarding pollinator movement distances appears to suggest that all areas within those distances from an occurrence of *A. m.* var. *peirsonii* should be included in critical habitat. We considered this approach, but concluded that doing so would include large areas of unoccupied habitat that are not essential to the conservation of *A. m.* var. *peirsonii*, because based on the best scientific information available to us, sufficient habitat exists to support pollinators within the designated critical habitat units. We agree that basic conservation biology principles support the value of connected areas of habitat of suitable size for supporting essential ecological functions such as pollinator habitat and seed dispersal. We believe this final revised critical habitat designation constitutes sufficient areas of connected habitat to support seed dispersal and pollination, and therefore does not violate basic conservation biology principles.

Comment 17: One commenter expressed the belief that the Service's biological methodology was sound and the criteria were appropriate. They stated the 16,106 ac (6,518 ha) of proposed critical habitat is "more than adequate" to protect *Astragalus magdalenae* var. *peirsonii* and ensure species' recovery.

Our Response: We appreciate the comment in support of this revised designation of critical habitat for *Astragalus magdalenae* var. *peirsonii*.

Comment 18: One commenter expressed the opinion that recreational use does not appear to negatively affect pollination of *Astragalus magdalenae* var. *peirsonii* by white-faced digger bees.

Our Response: Please see response to comment 13 above. Because the commenter did not provide any additional information or data to support their opinion, we were unable to consider the validity of the claim.

Comments Related to Legal and Procedural Issues

Comment 19: A number of commenters expressed concern regarding continued or additional closures of dune areas to OHV activity. In some cases it appeared they believed critical habitat designation was equivalent to closure, in other cases the designation would mandate additional or expanded closures, and in a few cases commenters were apparently confused regarding the reason for existing closures.

Our Response: Current closures in the ISDRA are not a result of critical habitat designation; they are a result of legal

proceedings and administrative actions taken by the BLM that pre-date the current critical habitat designation (69 FR 47330; August 4, 2004). Critical habitat designation does not establish a refuge, wilderness reserve, preserve, or other conservation area. If a project that requires Federal funding, permitting, or authorization (such as management actions by the BLM) is planned in designated critical habitat, and the Federal agency (such as BLM) determines the project may affect *Astragalus magdalenae* var. *peirsonii* or its critical habitat, the agency responsible for providing the funding or permit is required, in consultation with the Service, to ensure that the project will not jeopardize the continued existence of the species or adversely modify critical habitat. We assume that BLM will take the critical habitat designation into consideration during their revised ISDRA planning process, as well as other relevant factors. Areas within a critical habitat designation, particularly occupied areas (all in this case), are already subject to regulatory protections afforded by the section 7(a)(2) jeopardy standard of the Act.

Comment 20: A number of commenters suggested management strategies to reduce the threat of OHV impacts to *Astragalus magdalenae* var. *peirsonii*.

Our Response: Please see response to comment 5.

Comment 21: One commenter asserted that because the proposed critical habitat did not include all recently occupied habitats, it does not meet the recovery standard of critical habitat designation. The commenter asserted that species recovery standards must be met by critical habitat designations, not just species extinction thresholds needed to meet the jeopardy standard.

Our Response: Please see response to comment 1. We do not concur with the commenter's assertion that all recently occupied habitats need to be designated as critical habitat in order to achieve recovery of the species.

Comment 22: One commenter stated they were opposed to any exclusions of essential habitat based on coverage by management plans. They stated that all essential habitat needs special management because it is subject to impacts from motorized vehicle recreation, even in wilderness areas where closure violations occur, and the District Court in Arizona found that existence of a management plan is proof that an area qualifies as critical habitat (cited *Center for Biological Diversity, et al. v. Norton*, 240 F. Supp. 2d 1090, 1099).

Our Response: No exclusions based on management plans were proposed or made in this final rule.

Comments From Other Federal Agencies

Comment 23: One commenter stated that Fall weather does not have to be wetter than average to trigger germination; all that is required is a single rainfall event sufficient to induce germination (approximately 1 in (2.5 cm)), so Fall rainfall could still be below the Fall average. The commenter recommended we alter the assertion in 72 FR 41259, column 3, paragraph 2, last sentence (“* * * based on our current understanding of the taxon’s life history, sufficient rain in conjunction with cool temperatures and wetter-than-average Fall weather appears to trigger germination events”) to reflect this point in the final rule.

Our Response: By “germination event,” we meant germination of a large number of *Astragalus magdalenae* var. *peirsonii* seeds at the same time. Thus, the statement in the proposed revised critical habitat rule is correct. While it may not require wetter-than-average Fall weather to trigger germination of some *Astragalus magdalenae* var. *peirsonii* seeds, wetter-than-average Fall weather is likely necessary to produce a mass germination event.

Comment 24: One commenter stated that there is no evidence that wind-driven sand provides the primary mechanism for seed scarification. The commenter stated that seeds usually have their hard seed coats rendered permeable by high summer temperatures or fire. In citing Baskin and Baskin (1989) as support for this statement, the commenter recommended we alter the statement in 72 FR 41263, column 3, paragraph 3, sentence 1 of the proposed revised rule to reflect this point in the final rule.

Our Response: It has been shown that wind-driven sand does scarify *Astragalus magdalenae* var. *peirsonii* seeds (Porter *et al.* 2005, p. 29); however, heat may be a contributing factor as well. We will consider this information in future management recommendations.

Comment 25: One commenter requested that we clarify the use of the word “higher” on 72 FR 41268 of the proposed rule which reads, “Habitat within these subunits [Subunits 1A and 1B in the Mammoth Wash management area] contains a higher density of standing plants and is likely to support a large seed bank based on our analysis of BLM’s 2004 survey data in addition to containing the PCEs required by the species.”

Our Response: We clarified this statement in this final rule to indicate that the habitat within Subunits 1A and 1B contained a higher density of standing *Astragalus magdalenae* var. *peirsonii* plants than areas adjacent to and outside of Subunits 1A and 1B based on our analysis of BLM’s 2005 survey data.

Comments Related to the Draft Economic Analysis

Geographic Scope of Analysis

Comment 26: Several commenters believe that the Draft Economic Analysis (DEA) underestimates impacts because it fails to consider impacts outside of Imperial and Yuma Counties. Commenters noted that most visitors to the ISDRA do not come from the local area. Another commenter asserted that the DEA overstates regional economic impacts because there is no evidence that people visiting the ISDRA are purchasing their groceries or a significant portion of their ORV equipment and supplies in Imperial or Yuma County.

One commenter also provided additional information on the geographic and economic scope of the sand-recreation industry. Specifically, the commenter provided a summary by location of 488 advertisers that support the American Sand Association to demonstrate that only a small proportion of these businesses and associations are located in Imperial and Yuma Counties. This commenter also provided anecdotal evidence to support the fact that businesses outside of Imperial and Yuma Counties are likely to be affected by the proposed critical habitat. This commenter also noted that there are “practical and sound theoretical reasons” for limiting the geographic scope of the regional economic analysis to Imperial and Yuma Counties.

Our Response: In the DEA, as in the 2004 Economic Analysis, the focus of the analysis is on the two counties that are expected to bear the greatest impact of any reduced visitation by OHV enthusiasts to the ISDRA, relative to overall economic activity in these counties (see Section 3.3.2 of the DEA). Thus, any change in sales resulting from changes in ISDRA visitation would be expected to have a disproportionate effect on these economies. This study area was chosen based on information in the 2003 Final Environmental Impact Study (FEIS) of the BLM’s Recreation Area Management Plan (RAMP) and discussion with the American Sand Association (ASA), Imperial County Board of Supervisors, and the Brawley

Chamber of Commerce. Additional text related to this issue has been added to the Final Economic Analysis (FEA) in Section 3.3.3.

Expenditure Estimates

Comment 27: Several commenters believe the per-vehicle trip expenditure estimate is understated because it does not include equipment purchases. Various commenters believe that the DEA failed to account for investment in high-value dune recreation equipment and specialty parts. Several commenters stated that if additional restrictions are imposed on duning activity as a result of the proposed critical habitat, this equipment will lose its value and no reinvestment in such assets will occur. One commenter asserted that the potential loss of revenue for the sheet metal fabrication industry will go into the billions of dollars, and two commenters provided information regarding the 2006 Sand Sports Super Show as support for the magnitude of the industry likely to be affected.

Our Response: Potential impacts on OHV sales are difficult to assess, as no data exist to model where OHV enthusiasts from the greater California and Arizona region purchase vehicles and other equipment, or how these purchases will change in response to reduced access within the ISDRA. As discussed in Section 3.3.2 of the DEA, given this uncertainty, the analysis applies a range of estimated average per-vehicle trip expenditures. The estimated range of expenditures (\$279–\$544 in 2007 dollars) represents average expenditures within the study area, and incorporates information from OHV user groups, including the ASA and the Off Road Business Association (OBRA).

The analysis recognizes the possibility that capital expenditures on OHV equipment could be impacted by limitations on OHV activity within the ISDRA. As shown in Exhibit 3–6 of the DEA, a portion (36 percent to 38 percent) of the expenditures per vehicle trip falls into the category of “OHV Equipment Supplies and Services.” The apportionment of the estimated expenditures per vehicle trip was based on a survey of OHV users conducted for the California Department of State Parks and Recreation (CADSPR). In a recent survey of ISDRA visitors (Haas/Collins 2006), respondents indicated that approximately 21 percent of expenditures were for “Vehicle Maintenance and Repair.” Although this figure is somewhat lower than the 36 to 38 percent applied in the DEA, the Haas/Collins expenditure category excludes expenditures on “OHV equipment supplies.” While overall cost

estimates within the report remain unchanged, Section 3.2 of the FEA has been revised to provide additional information on investment in OHV equipment.

Comment 28: Various commenters provided information on what they consider “average” per trip expenditures ranging from \$350–\$450. One commenter stated his group represents about \$1 million per year at the ISDRA, not including travel and food. Another commenter states Exhibit 3–6 on page 3–16 of the DEA underestimates the cost of fuel per trip.

Our Response: As discussed in Section 3.3.2, the DEA was based on the best available information on expenditures by visitors to the ISDRA. The estimated range of expenditures per vehicle trip to the ISDRA (\$279–\$544 in 2007 dollars) represents average expenditures within the study area (defined as Imperial and Yuma Counties), based on information from OHV user groups, including the ASA and OBRA. The per-trip expenditure information provided in public comment falls within the range of expenditures estimated in the DEA. As explained in Exhibit 3–6, OHV-related expenditure estimates were allocated to categories based on information from a report published by the CADSPR Off-Highway Vehicle Motor Vehicle Recreation Division. This study was considered the best available information for purposes of understanding the likely types of expenditures made by OHV recreators at the ISDRA.

Information Sources

Comment 29: Various commenters were concerned that the authors of the DEA did not contact OHV business owners. The commenters believe that only the actual business owners can provide the necessary information to develop a meaningful economic impact assessment.

Our Response: As described in Section 1.4 of the DEA, in developing the DEA, the authors of the study contacted various organizations that represent OHV-related businesses, including the ASA and OBRA, as well as local chambers of commerce. The expenditure estimates were based on input from OHV user groups, as detailed in Exhibit 3–6 of the DEA. Given timing and budget constraints, it was not possible for the study authors revising the economic analysis to contact each OHV-related business in the region.

Comment 30: Commenters question the accuracy of the DEA because data from a recent study of visitors to the ISDRA was not included. Specifically

they cite the fact that the DEA apportions 15 percent of regional expenditures to Yuma County while the new data suggests proper allocation for Yuma County is 25 to 30 percent. One commenter asserted that the Haas/Collins study supports the level of expenditures estimated in the DEA under upper bound assumptions.

Our Response: As discussed in Section 3.3.2, the DEA was based on the best available information on expenditures by visitors to the ISDRA at the time the report was produced. The estimated range of expenditures per vehicle trip to the ISDRA (\$279–\$544 in 2007 dollars) represents average expenditures within the study area, based on information from OHV user groups, including the ASA and OBRA.

While the Haas/Collins studies provide useful information about visitors to the ISDRA, we are reluctant to rely on the Haas/Collins expenditure information in the DEA due to: (1) Poor wording of the key expenditure question in the survey, which is likely to have caused confusion regarding the allocation of a portion of total expenditures to the local area (e.g., for the line item “Total Dollars Spent on your Most Recent Visit to ISDRA,” it is unclear whether the respondent was supposed to enter the dollar amount spent for the entire trip (including at home and enroute), or only within 50 mi (80.4 km) of the ISDRA); (2) the exclusion of all day trip visitors from the survey (which may result in an upward bias in the expenditure estimates); and (3) the exclusion of all visitors staying in hotels or RV parks outside the ISDRA (the direction of bias that might result from this limitation in the sample frame are unknown). Nonetheless, we note that the Haas/Collins studies indicate average expenditures within 50 mi (80.4 km) of the ISDRA of \$438 (when recalculated to represent an average of overall expenditures for all visitors surveyed), which is only slightly higher than the midpoint of our expenditure range for Yuma and Imperial Counties (\$411.50).

The DEA apportions 15 percent of regional expenditures to Yuma County and 85 percent to Imperial County, based on information in the ISDRA RAMP (2003) and Business Plan (2003). The Haas/Collins studies do not provide reliable information regarding visitors’ allocation of expenditures between Imperial and Yuma counties. The survey asks respondents to indicate the community through which they typically drive to visit the ISDRA (Question 5) and how frequently they stop in this community (Question 6), but respondents are not asked to

estimate expenditures in each community or county.

Comment 31: One commenter asserted that the upper bound welfare impact estimate of \$85.9 million is understated because the \$140 per "lost" trip figure is substantially lower than the expenditures estimated in the Haas/Collins studies. Another commenter also questioned the use of the \$140 figure and compares this figure to his estimated expenditures of approximately \$350 to \$400 per trip.

Our Response: The \$140-per-vehicle-trip figure referred to by these commenters represents a consumer surplus per trip, used to calculate economic efficiency effects stemming from the proposed designation. The \$140 figure is not comparable to visitor expenditures per trip, such as those measured by the Haas/Collins studies. As discussed in the text box on page ES-5 of the FEA, efficiency effects describe net changes in national social welfare, based upon the idea that overall social welfare can be maximized by using resources in ways that yield the greatest benefits to society. In this case, the \$140 per vehicle trip figure represents the consumer surplus to recreators that results from an OHV vehicle trip to the ISDRA. Section 1.2 of the FEA provides additional information on the difference between efficiency effects and distributional impacts.

Methodology for Estimating Visitation Impacts

Comment 32: Several commenters asserted that closures within one management area may result in a reduction in the effective accessibility of other areas, affecting visitation levels beyond what is accounted for in the DEA. Specifically, the BLM noted that designating critical habitat within the Ogilby management area could reduce OHV use in both the Ogilby and Dune Buggy Flats management areas. BLM believes the DEA should include impacts to visitation associated with the Dune Buggy Flats management area, despite the fact that no critical habitat was proposed in this management area.

Our Response: As discussed in Section 3.5 of the FEA, whether OHV access in the ISDRA will be limited in the future as a result of the critical habitat designation will depend on the outcome of future management decisions and consultations. Given this uncertainty, the Service has defined a range of potential changes to BLM's management that could be necessary to avoid an adverse modification finding in a future consultation, in addition to actions needed to avoid a jeopardy

finding. Specifically, as described in the text box on page ES-4, the Service has indicated that the critical habitat portion of three management areas (Gecko, Mammoth Wash, and Ogilby) may be closed to OHV use to avoid an adverse modification finding.

Due to the nature of the visitation data available for the ISDRA (e.g., counts of vehicles are limited to ISDRA entry points), information is not available to determine, with specificity, which visitors or subset of visitors use the areas proposed for critical habitat designation. Recognizing this data limitation, and in the absence of a site-specific model to predict visitor behavior, the analysis reflects the uncertainty inherent in these economic impact estimates by bounding the potential impacts as discussed in Section 3.3 of the FEA. Though visitation at management areas where no critical habitat is proposed may be affected by closures, the Service does not believe it is possible to predict specific visitor behavior at the ISDRA in response to potential closures of portions of the proposed critical habitat, such that resulting potential costs can be quantified, given existing data as discussed in Section 3.3.3 of the FEA.

Comment 33: One commenter believes that the DEA fails to utilize accepted analytical methods to deal with risk and uncertainty about the actual closure plan. The commenter further provided text from U.S. Army Corps of Engineers guidance for addressing risk and uncertainty in water resources planning efforts, as an example of the type of method that could have been applied in the DEA to address the uncertainty underlying potential closures in the ISDRA resulting from the proposed critical habitat designation.

Our Response: As discussed in Section 3, paragraph 57 of the DEA, it is not possible, using existing data, to predict what the nature or scope of restrictions on OHV use will be, or to model OHV recreators' behavior in response to these future management actions. While there are a number of accepted approaches to deal with uncertainties, this analysis bounds the potential economic impacts using a lower- and upper-bound assessment framework. The method referred to by the commenter is most useful when detailed information is available regarding the likelihood and risks associated with each option identified. In this case, this type of information was not available. The FEA does, however, identify and discuss the uncertainty factors underlying the analysis in Section 3.3.3.

Technical reviewers of the methodology applied in the DEA concluded that this approach is appropriate given the uncertainty associated with future policy decisions, and the lack of detailed behavioral data regarding OHV enthusiasts' use of the ISDRA.

Comment 34: BLM commented that if closures were necessary it would not be able to close only the critical habitat areas, but would likely have to expand the area closed to make boundaries that would be enforceable, thus potentially increasing the expected impacts on visitors. For example, BLM stated "a vehicle closure surrounding proposed critical habitat Subunits 2A and 2B in the Gecko MA (with some overlap into the Glamis MA) could encompass as much as 9,500 ac (3,845 ha), more than twice the 3,983 ac (1,612 ha) in those two critical habitat subunits."

Our Response: As discussed in Section 3.3.3 of the DEA, neither the Service nor BLM is able to forecast with certainty whether critical habitat designation will result in closures of portions of the ISDRA. BLM has indicated that it will undertake to revise its RAMP after final designation of critical habitat; this revision will be a lengthy process, during which BLM will consider various management options, and the ultimate outcome of this planning process and future section 7 consultation is unclear. Therefore, the most reasonable assumption based on the best available information was to model the upper bound as a scenario in which critical habitat designation could potentially result in closure of the critical habitat portions of the Gecko, Mammoth Wash, and Ogilby management areas.

Because the EA indicates the upper bound impacts are linearly related to the acreage of potential closures (see FEA, p. 3-27), doubling the acreage potentially closed would double the estimated upper bound impacts. However, we again note that specific management actions taken by BLM with regard to OHV use closures in the ISDRA are uncertain and will depend on the outcome of management planning activities and section 7 consultation.

Comment 35: Several commenters maintained that the DEA should have taken into account the relative attractiveness of the proposed critical habitat from an OHV use standpoint. These commenters asserted that the assumption of uniform use throughout the management areas is not justified. Commenters suggested that the economic analysis should incorporate information regarding the area of active

dunes that are proposed to be part of critical habitat compared to the total area of active dunes within a particular management area, as opposed to comparing the area of critical habitat to the total area of the entire management area. In particular, BLM stated "the vegetation type, active dune/psammophytic scrub, contains the active dunes that are the focus of the recreational use in the Dunes. Use in the other vegetation types of the Dunes is incidental to the use in the active dunes." BLM also provided a map of the ISDRA illustrating where each vegetation type occurs in the ISDRA as part of its comments.

Our Response: It is not possible, using existing data, to predict the percentage of OHV recreators who visit areas of the ISDRA that are proposed for critical habitat designation. Lacking detailed data and user patterns, the DEA modeled visitation based on BLM vehicle counts and assumes an equitable distribution of visitation within each management area. Research was conducted to determine if OHV track density data or other information was available to better understand OHV use patterns in the Dunes to predict impacts to visitation. Through discussions with the BLM, it was determined that available data did not provide the necessary information to give an accurate picture of OHV use throughout the ISDRA or the number of visitors using the proposed critical habitat areas. Thus, the analysis relied on the best available information on visitation to the ISDRA—the BLM vehicle counts by management area.

In its comment letter, BLM provided new information regarding the distribution of OHV use within the ISDRA. The economic analysis has been refined based on this information, which suggests that OHV recreation occurs primarily within the active dune/psammophytic scrub vegetation type. In particular, BLM indicated that the active dune vegetation type represents approximately 72 percent of Gecko management area, 59 percent of the Ogilby management area, and 86 percent of the Mammoth Wash management area. The critical habitat falls completely within the active dune vegetation type. Limiting the baseline OHV recreation area to this vegetation type results in an increase in the estimated upper bound welfare impacts from 16 to 70 percent, depending on the management area. Specifically, assuming that the active dune/psammophytic scrub vegetation type is the focus for OHV recreation, the high-end upper bound welfare impacts resulting from a reduction in OHV use

have been revised as follows: Impacts for Gecko increase from \$81.3 million to \$113 million (undiscounted); impacts for Ogilby increase from \$4.52 million to \$7.60 million (undiscounted); and impacts for Mammoth Wash increase from \$68,600 to \$79,400 (undiscounted). At the upper bound, regional economic impacts increase from \$24.2 million to \$34.0 million in total output and from 529 jobs to 743 jobs, at the high end. While these revisions change the absolute level of the impacts at the high end, the ranking of the management areas remains unchanged (e.g., Gecko retains the highest impacts by far at \$113 million undiscounted). The revised results are presented in the FEA in detail.

Comment 36: To support the argument that certain areas should be excluded from the critical habitat designation, in its comment letter, BLM provided "corrected" impact estimates. BLM attempted to adjust the results presented in the DEA to reflect only the vegetation type that BLM believes is actively used for OHV recreation rather than the entire management area, and included impacts to vehicle trips associated with Dune Buggy Flats and Glamis management areas for which the DEA does not anticipate any impact.

Specifically, for Subunits 2A and 2B, located in the Gecko and Glamis management areas, the commenter suggested that upper bound welfare impacts should be adjusted to \$121.8 million (as opposed to the \$81.3 million estimated in the DEA). Similarly, for Subunits 2A and 2B, the commenter suggested that the regional economic impacts should be \$34.3 million and 751 jobs (as opposed to the estimated \$22.9 million and 501 jobs).

Our Response: As addressed above, BLM has raised several issues with regard to the method for estimating lost vehicle trips that could potentially result from the proposed critical habitat designation. The economic analysis has been revised based on information indicating that OHV recreation occurs primarily in the active dune/psammophytic scrub vegetation type. As illustrated in the FEA, the revised results are roughly similar to what BLM has calculated. Note, however, while these revisions increase the absolute level of impacts at the upper bound, the relative ranking of areas by level of impact remains the same.

Comment 37: One commenter noted that the DEA does not recognize that the limiting factor in visitation is the availability of camping spaces, and the area has already reached or exceeded the reasonable carrying capacity. The commenter similarly asserted that the

need to limit air quality deterioration should be taken into account as a factor in the capacity of the ISDRA in forecasting visitation growth in the economic analysis. The commenter stated that weekends are already filled to capacity.

Our Response: As discussed in Section 3.5, the baseline visitation forecast in the DEA is based on information from the FEIS for the ISDRA RAMP (2003). As noted by the commenter, the FEIS discusses the fact that visitor supply is constrained by availability of camping supply, and that on some holiday weekends, visitation exceeds this supply. However, BLM noted that the total annualized visitor supply is expected to be adequate, and that management actions would be expected to temporally redistribute some of the visitation to the ISDRA. As discussed in the DEA in Section 3.5, the carrying capacity is determined by BLM based on the Recreation Opportunity Spectrum (ROS) class, which defines the level of infrastructure and camping capacity within each management area. Further, as discussed in the RAMP FEIS (p. 62), one of the management actions under the preferred alternative includes implementing actions to mitigate for contributions to the non-attainment due to activities at the ISDRA as requested by the Imperial County Air Pollution Control District (ICAPCD). In 2006, BLM, in cooperation with the ICAPCD, prepared a Dust Control Plan outlining dust control measures at the ISDRA. These measures include watering of high OHV use areas during high-use times and maintenance of wilderness areas and paved roads in the ISDRA. Thus, campground supply and air quality deterioration have already been incorporated into the baseline visitation assumptions in the DEA because they were considered in the development of the FEIS.

Comment 38: One commenter asserted that the DEA relies on the flawed assumption that "the closures now in place lead to a decrease in visitation in every year since 2001 and will continue to do so into the future."

Our Response: The approach to estimating impacts to visitation resulting from the critical habitat designation is explained in detail in Section 3.5 of the FEA. As discussed in this section and in Section 1.3.1, the baseline for the analysis of post-designation impacts assumes that current closures will be lifted after critical habitat is finalized, and that with or without critical habitat, some form of limited or managed use or complete closure of the Adaptive Management Area would be likely.

Comment 39: A commenter noted that estimated visitation impacts forecasted in the DEA erroneously begin the estimate of "visitation with critical habitat" at approximately 150,000 vehicle trips below current levels in 2008.

Our Response: The commenter is correct. In the DEA, Figure 3-2 included incorrect information for the "with critical habitat" vehicle trips. Figure 3-2 has been corrected in the FEA. This error does not affect the impact estimates or results of the analysis; visitation figures throughout the remainder of the DEA are correct.

Comment 40: One commenter asserted that Exhibit 3-5 underestimates the number of trips made per year by visitors to the ISDRA and that recent surveys conducted by the ASA have indicated most visitors go seven times a year.

Our Response: The most recent survey of visitors to the ISDRA (Haas 2006) finds that ISDRA users visit approximately six times per year. The DEA estimate of three trips per year was based on available information (ISDRA Business Plan (2003), confirmed with various OHV user groups including ASA and ORBA). Exhibit 3-5 has been updated to include the information from the Haas (2006) report. Note that the data in Exhibit 3-5 is provided for informational purposes, and these revisions do not affect the results of the analysis.

Miscellaneous Issues

Comment 41: The BLM commented that Mammoth Wash management area is the only area that now provides the semi-primitive motorized recreation opportunity spectrum (ROS) category. BLM stated that designation of critical habitat in Subunits 1A and 1B could potentially result in BLM closing most of the sandy areas in the Mammoth Wash management area to OHV use to implement enforceable and manageable boundaries around the critical habitat. The commenter further maintained such a closure would result in the elimination of the semi-primitive motorized ROS category from the suite of recreational opportunities available to Dunes recreationists and would adversely affect the families that recreate in the area.

Our Response: As discussed in Section 3.3 of the DEA, upper bound impacts are based on the assumption that a portion of visitors to this area may choose not to recreate at the ISDRA as a result of the proposed critical habitat designation. The DEA does not distinguish between different types of OHV recreation at the ISDRA, as

information is not available to value different types of OHV recreation. To the extent that visitors to the Mammoth Wash management area value their experience at a higher or lower level than that anticipated in the DEA or have higher or lower than average expenditures per trip, the DEA may underestimate or overestimate the impacts of critical habitat designation. However, given available information, the analysis is not able to differentiate between types of OHV recreation at the ISDRA.

Comment 42: A number of commenters stated that use restrictions, particularly in the Gecko Road and Dune Buggy Flats areas, will have a substantial drag on the local and regional economy, especially small businesses. Due to the likely economic impacts of increased management constraints that block dune access from the camping areas at Gecko Road and Dune Buggy Flats, commenters requested that the Secretary of the Interior (Secretary) exclude these areas (portions of Units 2 and 3), from the final critical habitat designation.

Our Response: We have assessed the information provided by commenters and the revised economic analysis and believe that excluding a portion of the critical habitat is appropriate. See the "Application of Section 4(b)(2) of the Act" section for details.

Comment 43: A commenter stated that the Secretary should identify key travel corridors (especially those with RS 2477 status) and exclude them from final critical habitat.

Our Response: We did not identify any key travel corridors within the final revised critical habitat designation, and we are not aware of any R.S. 2477 corridors within the final revised critical habitat designation.

Benefits Transfer

Comment 44: Several commenters noted that the welfare value per OHV vehicle trip applied in the economic analysis is inappropriate for benefits transfer, because the type of OHV use and the recreational experience valued in the two studies used for transfer are too dissimilar from OHV recreation at the ISDRA. Specifically, commenters cited differences between the ISDRA and the areas used for OHV recreation in North Carolina and Utah, and differences in the type of equipment used.

In particular, one commenter stated that the DEA fails to justify its use of the benefit transfer method. This commenter further outlines specific criteria in the OMB guidelines that he believes the benefits transfer studies do

not meet. In particular, the commenter believes the following criteria are not met: (1) The good, and the magnitude of change in that good, should be similar in the study and policy context; (2) the relevant characteristics of the study and policy contexts should be similar; (3) the availability of substitute resources should be similar; (4) if you can choose between transferring a function or a point estimate, you should transfer the entire demand function; (5) if the study examines a resource that is unique or has unique attributes, you should not transfer benefit estimates to value a different resource and vice versa; and, (6) the study should not apply an ex ante valuation estimate to an ex post policy context. If a policy yields significant change in the attributes of the good, you should not use the study estimates to value the change using benefits transfer.

Our Response: Section 3.3.1 of the DEA provides the justification addressing how the benefits transfer applied in the analysis meets the criteria outlined in the OMB guidelines for use of benefits transfer. Each of the issues raised by the commenters is explicitly addressed in this section of the DEA. Specifically, paragraph 75 addresses how the benefits transfer conforms to OMB criteria, with respect to: the issue of the magnitude of change, the issues of uniqueness of the resources and availability of substitutes, and the criteria related to the valuation framework (e.g., ex ante versus ex post). In addition, paragraph 83 addresses the use of transfer of a single point estimate rather than an entire demand function.

As described in paragraph 79, to estimate the consumer surplus value of an OHV trip, the analysis obtained relevant studies from the resource economics literature. In developing the 2004 DEA, two relevant studies were identified: Englin *et al.* (2003) and Jakus (2003). Technical review of the 2004 economic analysis supported the use of these two studies. During the development of the 2007 DEA, a more substantive literature review was conducted to identify relevant economic research regarding demand for OHV recreation sites; this review did not identify any other applicable studies.

Ideally, the DEA would employ a California-or Arizona-based study to determine the welfare value of OHV recreation. However, no such study was identified. The estimates used were contemplated by technical reviewers and determined to be the most reasonable given currently available information. As discussed in Section 3.3.1 of the DEA, the Service believes

that this use of benefits transfer is justified under the OMB guidelines.

Comment 45: One commenter questioned the use of the travel cost method in the studies applied in the benefits transfer. The commenter argued that this method systematically undervalues recreational resources. Specifically, the commenter discussed the issue that the travel cost method does not account for “annual fixed costs” or “investment in durable equipment.” The commenter argued that because ISDRA users make fewer trips per year to the ISDRA than visitors to the Utah and North Carolina sites, a higher total cost must be allocated over fewer annual trips and that if these fixed costs were factored in, the marginal value per trip would be higher for ISDRA users.

Our Response: Both of the studies (Englin *et al.* 2003 and Jakus 2003) relied upon for the benefits transfer of a welfare value for an OHV trip are based on travel cost models. As discussed on page 3–16 of the FEA, to address uncertainty associated with value transfer from these two specific studies, the broader valuation literature on off-road driving activities was reviewed. This review looked at values estimated using a variety of methodologies, including travel cost and contingent valuation methodologies, and found that other valuation studies of off-road driving activities estimate similar consumer surplus values. A recent literature search conducted by Dr. J.R. DeShazo of the University of California (included in Appendix E of the DEA) confirmed that these two studies were the most appropriate for benefits transfer in this case.

The travel cost method is widely accepted for establishing the social welfare value of recreational activities. For example, the travel cost method is explicitly listed as an acceptable valuation methodology in the Department of the Interior’s Natural Resource Damage Assessment Regulations (43 CFR 11 (1995), as amended at 61 FR 20609, May 7, 1996). These regulations state: “The travel cost methodology may be used to determine a value for the use of a specific area.” Similarly, the Environmental Protection Agency’s Guidelines for Preparing Economic Analyses (EPA 240–R–00–003, September 2000) state “Recreation demand models, including the travel cost model, the random utility model (RUM), and other approaches, may be used to assess nonmarket benefits associated with recreation activities” (p. 73).

Comment 46: One commenter stated that the welfare impacts of up to \$140 per trip are based on studies in areas that are not analogous to the Dunes. The commenter noted that the “crowding” effects that are discussed in the literature cited regarding a day at the beach are extrapolated to an assumed “crowding” in the OHV use areas on the Dunes. The commenter further suggested that the most significant factor affecting welfare value of OHV recreators at the ISDRA results from crowding of camping areas rather than the crowding in the OHV use area in the Dunes.

Our Response: The DEA estimates upper bound welfare impacts based on the assumption that some people who would have made a trip to the ISDRA for OHV recreation will choose not to due to closure of portions of the proposed critical habitat, as discussed in Section 3.3. As detailed in Exhibit 3–7, the analysis does not account for quantified economic losses associated with a reduced quality of experience (i.e., consumer surplus) for users who continued to take OHV trips to the ISDRA under closures and experienced increased congestion or those users who visited less desirable substitute sites. While the literature review included in Appendix E does make reference to several studies that discuss the effects of crowding on the consumer surplus of beachgoers, these studies are not applied in the DEA.

As discussed in paragraph 54, the DEA focuses on OHV recreation, as this is the primary type of recreation expected to be affected by the critical habitat designation. As acknowledged by the commenter, “the proposed critical habitat has no effect on the limited number of campsites to accommodate RVs and cars—these are management issues of funding issues of BLM’s that are wholly independent of the PMV critical habitat issue.”

Although the welfare or social impacts to the recreational experience in the Dunes were not quantified in the economic analysis, we have considered such impacts in our analysis under section 4(b)(2) of the Act (see “Application of Section 4(b)(2) of the Act” section below for a detailed discussion).

Comment 47: The estimates of welfare loss do not include losses that could be experienced by “remaining” recreators who “could experience welfare losses due to impacts to the level of enjoyment derived from recreating in the ISDRA.”

Our Response: This limitation of the analysis is explicitly noted in Exhibit 3–7 of the FEA. As discussed in paragraph 79, in the absence of a site-

specific model to understand visitor behavior at the ISDRA, the analysis bounds impacts based on assumptions about visitor behavior. However, as noted above, we have considered such welfare and social impacts in our analysis under section 4(b)(2) of the Act (see “Application of Section 4(b)(2) of the Act” section below for a detailed discussion).

Regional Economic Impact Analysis

Comment 48: One commenter noted the limitations inherent of the use of the IMPLAN model. Specifically, the commenter stated that IMPLAN is a static model and does not incorporate any economic readjustment. The commenter pointed out that this readjustment may or may not occur fairly quickly. The commenter also noted that the IMPLAN analysis relies on 1998 data. The commenter remarked that, especially in Yuma, the local economy has undergone significant change since 1998 and that generally this would result in higher multipliers.

Our Response: The DEA explicitly notes these limitations in Exhibit 3–7, as acknowledged by the commenter. As discussed in the DEA, the IMPLAN model that is used to estimate regional economic impacts is a static model and does not account for the fact that the economy will adjust. IMPLAN measures the effects of a specific policy change at one point in time. Over the long run, the economic losses predicted by the model may be overstated as adjustments such as re-employment of displaced employees occurs.

Also, as discussed in the DEA, the IMPLAN model that is used to estimate regional economic impacts relies on 1998 data. If significant changes have occurred in the structure of Imperial and Yuma County economies, the results may be sensitive to this assumption. The direction of any bias is unknown, but is likely to be small.

Comment 49: One commenter noted that the DEA lacked a discussion of lost Federal and State income taxes that could result from this designation.

Our Response: As shown in Exhibit C–3, at the upper bound, the DEA estimates potential regional economic impacts related to indirect business taxes ranging from \$0.7 million to \$1.7 million, depending on the visitation growth assumption.

Inclusion of Other Impacts/Benefits

Comment 50: One commenter noted that the value of social benefits obtained through OHV recreation is not addressed in the report. Specifically, the commenter maintained that to the extent that families recreating at the

ISDRA may experience social benefits related to the "community" aspect of ISDRA recreation, including forming bonds and "strengthening the family as a unit and children as individuals," these values should be addressed at least qualitatively in the report.

Our Response: As the commenter noted, it is likely that OHV recreators do derive social benefits related to this activity that could be affected if their participation in OHV recreation declines. For example, a study cited in the FEIS of the ISDRA RAMP (Outdoor Recreation In America 1999: The Family and the Environment), provides support for the fact that Americans feel outdoor recreation strengthens the family as a unit, and families use outdoor recreation as a way to form bonds and transfer important family values to their children. To the extent that the values of social benefits are reflected in individual's and group's decisions to visit the ISDRA, and the values assigned to those trips, these values are included in the analysis. An assessment of these types of values would require an understanding of the activities that recreators at the ISDRA would choose to participate in, absent a trip to the ISDRA.

While the impacts resulting from a loss of social benefits are not quantified in the report due to a lack of information on the value of these benefits, Section 3.3.3 of the FEA has been revised to describe this limitation of the analysis of welfare impacts, and we have considered such unquantified impacts in our analysis under section 4(b)(2) of the Act (see "Application of Section 4(b)(2) of the Act" section below for a detailed discussion).

Comment 51: One commenter noted that no basis was given for project modification costs for signage of \$200,000 per year. The commenter further stated that these costs should not be attributed to the critical habitat designation but rather should be considered due to the failure of ORV users to comply with the law.

Our Response: The basis for these costs is explained in footnote 100 in the DEA, which states that the BLM estimates it could cost up to \$200,000 per year to install and maintain signage for closures of the proposed critical habitat in Gecko, Mammoth Wash, and Ogilby. This estimate was based on BLM's recent experience with contractors' bids to install and maintain signage for the closures now in place. As discussed in Section 4.3.2, these costs would result from the designation of critical habitat, which could trigger additional restrictions on OHV use. The Service believes these costs are

accurately attributed to the critical habitat designation, because regardless of individual OHV recreator's behaviors, the BLM would be likely to install and maintain signage around any closures as a matter of public information and outreach.

Comment 52: One commenter asserted that the DEA should treat any increase in BLM costs (e.g., for signage—purchase of goods and services) as an offset to the regional economic impacts.

Our Response: To estimate upper bound regional economic impacts, the DEA did not incorporate an increase in spending by the BLM as an offset to losses in regional expenditures due to a potential reduction in OHV use of the ISDRA. As discussed in Section 4.3.2, anticipated project modification costs per year include approximately \$93,750 for additional law enforcement and \$200,000 for implementing and maintaining signage. Specifically, total project modifications of \$293,750 represent from 1 to 3 percent of the estimated \$11.3 million to \$24.3 million in impacts to direct expenditures as a result of potential reductions in OHV use due to critical habitat. Thus, while the analysis does not include these as an offset to regional economic impacts, the impact of including these as an offset would be small. Additional text has been added to Section 3.5.2 of the FEA to note this limitation of the upper bound estimates.

Comment 53: One commenter stated that the Service should at a minimum quantify the benefits of protecting these lands as critical habitat to other rare, endemic species; the health benefits that may accrue if any reduction in ORV use improves air quality; and the cost savings to the local economy that may result from improved air quality including reducing health costs.

Our Response: In the context of a critical habitat designation, the primary purpose of the rulemaking (i.e., the direct benefit) is to designate areas that contain the physical and biological features that are essential to the conservation of listed species. The designation of critical habitat may result in two distinct categories of benefits to society: (1) Use; and (2) nonuse benefits. Use benefits are simply the social benefits that accrue from the physical use of a resource. Visiting critical habitat to see endangered species in their natural habitat would be a primary example. Non-use benefits, in contrast, represent welfare gains from "just knowing" that a particular listed species' natural habitat is being specially managed for the survival and recovery of that species. Both use and

non-use benefits may occur unaccompanied by any market transactions.

A primary reason for conducting this economic analysis is to provide information regarding the economic impacts associated with a proposed critical habitat designation. Section 4(b)(2) of the Act requires the Secretary to designate critical habitat based on the best scientific data available after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. Economic impacts can be both positive and negative and, by definition, are observable through market transactions.

Where data are available, this economic analysis attempts to recognize and measure the net economic impact of the proposed designation. For example, if the fencing of a species' habitat to restrict motor vehicles results in an increase in the number of individuals visiting the site for wildlife viewing, then the analysis would recognize the potential for a positive economic impact and attempt to quantify the effect (e.g., impacts that would be associated with an increase in tourism spending by wildlife viewers). In this particular instance, however, the economic analysis did not identify any credible estimates or measures of positive economic impacts that could offset some of the negative economic impacts.

Under Executive Order 12866 (E.O. 12866), Office of Management and Budget (OMB) directs Federal agencies to provide an assessment of both the social costs and benefits of proposed regulatory actions. OMB's Circular A-4 distinguishes two types of economic benefits: Direct benefits and ancillary benefits. Ancillary benefits are defined as favorable impacts of a rulemaking that are typically unrelated, or secondary, to the statutory purpose of the rulemaking. In the context of critical habitat, the primary purpose of the rulemaking (i.e., the direct benefit) is the potential to enhance conservation of the species. The published economics literature has documented that social welfare benefits can result from the conservation of endangered and threatened species. In its guidance for implementing E.O. 12866, OMB acknowledges that it may not be feasible to monetize, or even quantify, the benefits of environmental regulations due to either an absence of defensible, relevant studies or a lack of resources on the implementing agency's part to conduct new research. Rather than rely on economic measures, the Service believes that the direct benefits of the proposed rule are best expressed in

biological terms that can be weighed against the expected cost impacts of the rulemaking.

In evaluating the benefits of excluding versus including specific areas, we have accordingly considered the biological benefits that may occur to a species from designation (see “Application of Section 4(b)(2) of the Act” section below), but these biological benefits are not addressed in the economic analysis.

Small Business Impacts

Comment 54: One commenter stated that the assumptions applied to estimate the number of small businesses affected should have been refined, for example, by “location (businesses closest to freeway exits, for example) and perhaps other factors as screening mechanisms.” The commenter further suggested using the United Desert Gateway’s *Off-Highway Vehicle Recreation Guide 2007–2008* to estimate the number of local affected businesses to be 546 within Imperial and Yuma Counties.

Our Response: As discussed in Section A.1.2, and illustrated in Exhibit A–2, the DEA includes information about the number of small businesses in OHV-related economic sectors in the study area. Due to data limitations, the analysis assumes that all of the small businesses in the region in the relevant categories are affected. Information is not available to determine how OHV recreators chose the businesses where they make expenditures.

The economic analysis has been revised in the FEA to provide a discussion of the additional information provided by the commenter. As the commenter noted, the total number of small businesses estimated by the

commenter (546) is somewhat less than the 827 small businesses estimated in the DEA. We are unclear how the businesses listed in the United Desert Gateway’s guide were chosen for inclusion, or whether these are paid advertisers (and thus not a representative sample of businesses). The data source used in the DEA (a Dialog search of the Dun and Bradstreet database) is considered the best, most complete information available to determine the number of small businesses potentially affected by the designation.

Comment 55: One commenter suggested that the base of small business types potentially affected should be expanded. The commenter noted that the Haas/Collins studies provide information regarding the breakdown of expenditures that provides a different picture of local expenditures than the categories of expenditures included in the DEA, which may have led the study authors to focus on additional types of small businesses in its analysis.

Our Response: As discussed in Section 3.3.2 of the DEA, OHV-related expenditure estimates were allocated to categories based on information from a report published by the CADSPR Off-Highway Vehicle Motor Vehicle Recreation Division. This study was considered the best available information for purposes of understanding the likely types of expenditures made by OHV recreators at the ISDRA.

While the Haas/Collins studies provide useful information about visitors to the ISDRA, we are reluctant to rely on the Haas/Collins expenditure information in the DEA due to (1) poor

wording of the key expenditure question in the survey, which is likely to have caused confusion regarding the allocation of a portion of total expenditures to the local area; (2) the exclusion of all-day trip visitors from the survey; and (3) the exclusion of all visitors staying in hotels or RV parks outside the ISDRA.

The categories of expenditures utilized in the Haas/Collins studies are somewhat different from those included in the CADSPR survey. However, 88 percent of the expenditures identified in the Haas/Collins studies fall into expenditure categories included in the DEA. Thus, if the DEA had relied on the categories of expenditures identified in the Haas/Collins studies, it is not clear that the NAICS codes that were used to identify the number of small businesses would have been different.

Summary of Changes From the Previously Designated Critical Habitat and 2007 Proposed Revised Rule

On August 4, 2004, we designated critical habitat for *Astragalus magdalenae* var. *peirsonii* comprising a total of 21,863 ac (8,848 ha) (69 FR 47330). On July 27, 2007 (72 FR 41258), we proposed to revise this designation to 16,108 ac (6,519 ha). This final revised critical habitat includes 12,105 ac (4,889 ha) in three units, after excluding Unit 2 (4,003 ac (1,620 ha)) under section 4(b)(2) of the Act (see “Application of Section 4(b)(2) of the Act” section below for a detailed discussion). All of the land designated in this final revised rule was proposed as critical habitat in the 2007 proposed revised rule. These changes are summarized in Table 2.

TABLE 2.—SUMMARY OF CHANGES BETWEEN THE AUGUST 4, 2004, CRITICAL HABITAT DESIGNATION; THE JULY 27, 2007 PROPOSED REVISED CRITICAL HABITAT; AND THIS FINAL REVISED DESIGNATION

2003 Proposed rule (68 FR 46143)		2004 Final rule (69 FR 47330)		2007 Proposed revised rule (72 FR 41258)		2008 Final revised rule	
Unit/subunit	Area (ac (ha))	Unit/subunit	Area (ac (ha))	Unit/subunit	Area (ac (ha))	Unit/subunit	Area (ac (ha))
1A	16,510 (6,681)	1A	16,509 (6,681)	1A, 1B, 1C, 1D	4,675 (1,892)	1A, 1B, 1C, 1D	4,675 (1,892)
1B	34,333 (13,894)	1B	15,355 (2,167)	2A, 2B, 3A, 3B, 3C.	11,215 ⁴ (4,539)	3A, 3B, 3C	7,212 ⁶ (2,919)
1C	1,490 (603)	1C	0 ² (0)	4	218 ⁵ (88)	4	218 (88)
1D	447 (181)	1D	0 ³ (0)	(none)	(none)	(none)	(none)
Totals	52,780 (21,359)	21,863 (8,848)	16,108 (6,519)	12,105 (4,899)

¹ 28,978 ac (11,727 ha) excluded from final designation under section 4(b)(2) of the Act.
² Excluded from the final designation under section 4(b)(2) of the Act.
³ Removed from the final designation; not essential to the conservation of the species.
⁴ Includes 331 ac (134 ha) not included in the 2004 final designation.
⁵ Includes 75 ac (30 ha) not designated in the 2004 final designation.
⁶ 4,003 ac (1,620 ha) excluded from final designation under section 4(b)(2) of the Act.

(1) The reduction in total area of identified essential habitat from the 2003 proposed critical habitat rule and the 2004 final critical habitat rule is primarily the result of a revised methodology to delineate critical habitat. The model used to delineate critical habitat boundaries in the 2003 proposed rule was based primarily on species survey data collected by the BLM from 1998 through 2002 along transects throughout the areas of the Dunes occupied by *Astragalus magdalenae* var. *peirsonii*. Each transect was composed of a series of grid squares measuring approximately 0.45 mi (0.72 km) on each side. In order to create the 2003 model, we used the coarse scale BLM survey data to extrapolate the values for four variables: (1) The presence or absence of standing plants of *A. m. var. peirsonii*; (2) the abundance of *A. m. var. peirsonii*; (3) the frequency of occurrence of *A. m. var. peirsonii* over the survey years; and (4) the number of associated rare psammophytic plant taxa present. These variables were scored, then standardized, and finally compiled. Because of the dynamic nature of the distribution of this plant, the cyclic nature of suitable climatic regimes, and the presence of a seed bank for *A. m. var. peirsonii*, grid squares where this plant was not found were included in critical habitat if they were contiguous with occupied grid squares (68 FR 46143). The data used to create the 2003 model was considered the best available at that time and allowed us to identify areas known to be occupied by *A. m. var. peirsonii* as well as areas likely to be occupied based on the presence of suitable habitat (e.g., presence of associated psammophytic plant taxa).

As discussed in the "Background" and "Criteria Used to Identify Critical Habitat" sections of this rule, the model used to delineate revised critical habitat boundaries in this revised rule is based on survey data collected by BLM in 2005 (Willoughby 2005b). The model used to delineate the revised critical habitat is based on data collected along a larger number of transects (510 versus 34) during a year of the highest recorded *A. m. var. peirsonii* abundance. These data are more robust than the data used in the 2003 model, primarily documenting occupancy over a larger area of the Dunes and at a finer spatial resolution (82 ft x 82 ft (25 m x 25 m) grid cells) during superior environmental conditions instead of on the presence of suitable habitat (e.g., the presence of associated rare psammophytic plant taxa), as was used in the 2003 model.

In summary, we consider the model used to delineate revised critical habitat

boundaries in this revised rule to more accurately depict the primary areas occupied by the species than the model used to delineate the 2003 proposed critical habitat boundaries. We determined that the identification of areas determined to meet the definition of critical habitat in the 2003 proposed designation was over-inclusive due to limited data and the rough spatial scale of the data. The 2005 data now provide more specific and reliable information regarding abundance and distribution, allowing us to more precisely identify habitat essential to the conservation of the species associated with core population areas.

(2) This final revised rule designates as critical habitat 5,560 ac (2,250 ha) of lands within Subunits 3A, 3B, 3C, and Unit 4 that were excluded from the 2004 final critical habitat designation under section 4(b)(2) of the Act (see Table 2 above). In 2004, the Secretary determined that the economic benefits of excluding these lands outweighed the conservation benefits of including these lands in the designation due to the potential economic costs of the designation (69 FR 47330). At this time, the Secretary has determined that the numerous benefits of excluding lands in Subunits 2A and 2B outweigh the conservation benefits of including these lands in this final revised designation (see "Application of Section 4(b)(2) of the Act" section below for a detailed discussion). Lands in Subunits 2A and 2B were also excluded from the 2004 final designation (69 FR 47330).

(3) We are excluding from this final revised designation of critical habitat Unit 2 in the Gecko and Glamis Management Areas based on disproportionately high economic and social impacts associated with the designation of this unit as critical habitat relative to the overall designation. We believe that the benefits of excluding these specific areas from the designation outweigh the benefits of including the specific areas. We have also determined that the exclusion of these areas from the final designation of critical habitat will not result in the extinction of *Astragalus magdalenae* var. *peirsonii*. These exclusions are discussed in more detail in the "Application of Section 4(b)(2) of the Act" section below.

(4) A number of the comments we received suggested editorial changes and technical corrections to the "Background" and "Unit Descriptions" sections of the rule. These changes were recommended to improve clarity, to include additional information, and to correct a number of minor errors; they

have been incorporated into this final revised rule where appropriate.

(5) In the 2007 proposed revision to critical habitat "Criteria Used to Identify Critical Habitat" section, we erroneously cited 100 plants per 2.5 ac (1 ha) or greater as the threshold for occupied cell inclusion in proposed critical habitat designation. Actually, occupied cells (defined in Willoughby (2005b) as 82 ft x 82 ft (25 m x 25 m) survey areas) with a plant density greater than 480 plants per 2.5 ac (1 ha) (30 plants per cell) were selected as core areas. About half of the plants observed in 2005 were in cells with a density more than or equal to 100 plants per 2.5 ac (1 ha). We used a density of 480 plants per ha since this captured the majority of the large clusters of standing plants. We believe these higher density core areas contain the physical and biological features essential to conservation of this species. Also, we erroneously reported that core areas were expanded to 2.5 ac (1 ha). Actually, we expanded the 82 ft x 82 ft (25 m x 25 m) survey cells to 5 ac (2 ha) in size to capture the entire population and seed bank on a dune bowl, based on our field observations that most occupied dune bowls are approximately two ha in size. In addition, we have made changes to the "Criteria Used to Identify Critical Habitat" section to more clearly articulate the supporting rationale for using the identified model to delineate the areas meeting the definition of critical habitat. Please refer to the "Criteria Used to Identify Critical Habitat" section of this final rule for the complete description of the GIS model used.

Critical Habitat

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

(i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(I) essential to the conservation of the species and

(II) which may require special management considerations or protection; and

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

Conservation, as defined under section 3 of the Act, means the use of all methods and procedures that are necessary to bring any endangered species or threatened species to the point at which the measures provided

under the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

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

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time of listing must contain the physical or biological features that are essential to the conservation of the species, and be included only if those features may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (i.e., the primary constituent elements, as defined at 50 CFR 424.12(b)) in the appropriate quantity and spatial arrangement to support the physical or biological features essential to the conservation of the species.

Under the Act, we can designate areas outside the geographical area occupied by the species at the time it is listed as critical habitat only when we determine that those areas are essential for the conservation of the species.

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

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

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

Areas that are important to the conservation of the species, but are outside the critical habitat designations, will continue to be subject to conservation actions we and other Federal agencies implement under section 7(a)(1) of the Act. Areas that support populations are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation

will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if information available at the time of these planning efforts calls for a different outcome.

Primary Constituent Elements (PCEs)

In accordance with section 3(5)(A)(i) of the Act and the regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species based on its biological needs. We consider the physical or biological features that are essential to the conservation of the species to be the PCEs laid out in the appropriate quantity and spatial arrangement for the conservation of the species. The PCEs include, but are not limited to:

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

We derive the PCEs for *Astragalus magdalenae* var. *peirsonii* from its biological needs as described in the proposed revised critical habitat rule published in the **Federal Register** on July 27, 2007 (72 FR 41258), and below.

Space for Individual and Population Growth, Including Sites for Germination, Reproduction, Seed Dispersal, Seed Bank, and Pollination

Astragalus magdalenae var. *peirsonii* is found on active sand dunes between active faces (so-called slip faces) of the dunes, in bowls, or on semi-stabilized shallow slopes, facing the slip-faces of active dunes (Porter *et al.* 2005, p. 14). Active sand dunes provide the space needed for individual and population growth, including sites for germination, reproduction, seed dispersal, seed bank, and pollination of *A. m.* var. *peirsonii*. Active sand dunes are characterized by bowls (hollows among the dunes), swales (low areas), and slip faces (areas so steep that the loose sand naturally cascades downward) that run transverse to the primary ridge line. *A. m.* var. *peirsonii* generally occurs on west-facing slopes where there is relative

substrate stability from the floor of the dune basin to beyond the ridge; the greatest concentrations are generally above the middle of the slope (WESTEC 1977, p. 75; Porter *et al.* 2001, pp. 12–13).

Sand movement, dune-building, and dune migration are likely determined by the wind regime (Norris and Norris 1961, p. 609). Winds from the northwest are prevalent in the winter, while in the summer the winds are from the southeast (Romsper and Burk 1979, p. 11). Muhs *et al.* (1995, pp. 43–44) found, during a study of the sand source for the Dunes, that dominant sand-moving winds are as follows: prevailing from the northwest all year at Indio, California; from the west or southwest all year at El Centro, California; and from the northwest in winter and from the southeast in summer at Yuma, Arizona. These winds are responsible for the local dispersal of seeds that either fall out of partly opened fruits or pods on the parent plant or that are released from fruits blown across the sand after falling from the parent plant (Phillips *et al.* 2001, p. 11).

Seed germination patterns likely reflect the horizontal and vertical distribution of the seed bank in the shifting sand dunes (seeds will not effectively germinate if buried more than 3 in (8 cm) below the surface of the dune (Bowers 1996, p. 69)). As an adaptation to shifting sands and low soil moisture, this species has developed extremely long taproots (Barneby 1964, p. 862) that penetrate deeply to the moister sand and that anchor the plants in the shifting dunes. According to Porter *et al.* (2005, p. 28), seedlings may have roots descending only 4 in (10 cm), whereas older plants (e.g., 4 years or older) are likely to have roots “many meters deep.” Seeds buried in the sand function as the seed bank and allow for growth when suitable conditions, such as adequate rainfall, scarification, and suitable sand depths, are met.

Wind-driven sand appears to provide the primary mechanism for seed scarification (e.g., scratching or chipping of outer cover). While seeds require no pre-germination treatment to induce germination, scarification appears to significantly increase germination success. Porter *et al.* (2005, p. 29) conducted germination trials of *Astragalus magdalenae* var. *peirsonii* seeds collected from the Dunes and found that, averaging over all germination trials, scarified seeds had 99.1 percent germination, whereas unscarified seeds displayed 5.3 percent germination. In germination trials conducted by Romsper and Burk (1979, pp. 45–46), 92 percent or more seeds

germinated within 29 days at temperatures of 77 °F (25 °C) or less, and no seeds germinated at temperatures of 86 °F (30 °C) or higher. This observation indicates that seeds on the Dunes likely germinate in the cooler months of the year. Porter *et al.* (2005, p. 29) identified the primary dormancy mechanism in *A. m.* var. *peirsonii* as the impermeability of the seed coat to water and demonstrated little loss of viability in seeds stored for 5 years.

Seedlings may be generally present in suitable habitat throughout the Dunes, especially during above-normal precipitation years. In intervening dry years, plant numbers decrease as individuals die and are not replaced by new seedlings. Porter (*et al.* 2005, p. 35) estimated that a total- or near-total failure of seedling recruitment occurs 20 percent of the time (1 of every 5 years). This species likely depends on the production of seeds in the wetter years and the persistence of the seed bank from previous years to survive until appropriate conditions for germination reoccur.

Astragalus magdalenae var. *peirsonii* occurs only in a vegetation community referred to as psammophytic (sand-loving) scrub, characterized by *Croton wigginsii* (dunes croton), *Eriogonum deserticola* (desert buckwheat), *Helianthus niveus* ssp. *tephrodes* (Algodones Dunes sunflower), *Palafoxia arida* var. *gigantea* (giant Spanish-needle), *Pholisma sonora* (sand food), *Tiquilia plicata* (plicate coldenia), *Petalonyx thurberi* (Thurber's sandpaper plant), and *Panicum urvilleanum* (dunes panic grass) (WESTEC 1977, p. 58; Porter *et al.* 2005, p. 14). However, none of these species truly dominates the landscape (Porter *et al.* 2005, p. 14).

In areas where the sand dunes are more stabilized (less sand dune building and movement), such as along the margins of the dune fields, the open canopy psammophytic scrub community is replaced by the sandier phases of the creosote bush scrub community. *Astragalus magdalenae* var. *peirsonii* is apparently excluded from the relatively more-closed canopy, creosote bush scrub community. The presence of this associated co-adapted psammophytic scrub plant community is important for population growth of *A. m.* var. *peirsonii*, because it provides habitat for insect pollinators required by *A. m.* var. *peirsonii* for fruit production (Porter *et al.* 2005, p. 35). The white-faced digger bee has been found to be the most frequent visitor on and may be the primary pollinator for this taxon (Porter *et al.* 2005, p. 32).

Intervening Areas for Connectivity Within the Population

The active sand dunes are continuous along the northwest-to-southeast axis. The continuity of the sand dunes provides connectivity and reduces fragmentation within the population by allowing the movement of pollinators and the wind dispersal of fruit and seeds. Therefore, areas of the sand dunes between bowls occupied by *Astragalus magdalenae* var. *peirsonii* are important for maintaining connectivity within the population.

Areas That Provide the Basic Requirements for Growth (Such as Water, Light, and Minerals)

A soil survey for the Imperial Valley area of Imperial County did not include the areas east of the Coachella Canal, but did depict a few adjacent portions of the Dunes as Rositas fine sand with 9 to 30 percent slopes (Zimmerman 1981, p. 32). Rositas fine sand is described as deep, sloping soils formed in wind-blown sands of diverse origin. Dean (1978, p. 65) describes the sand as quartz with a mean grain size of 0.006 in (0.17 mm). The Dunes sand is composed of 60 to 70 percent quartz and 30 to 40 percent feldspar (Norris and Norris 1961, p. 610). Porter *et al.* (2005, pp. 26–27) describes the sand as containing very little organic material (less than 1 percent). They also found that following rainfall, the dune surface held considerable moisture. Within 2 to 3 weeks of a rainfall event, moist sand was found 1 in (3 cm) below the dune surface, and later in the season (e.g., April) moist sand was found 7 in (19 cm) below the surface (Porter *et al.* 2005, pp. 26–27). Therefore, Rositas fine sands are required by this species to provide the basic requirements for growth.

Primary Constituent Elements for *Astragalus magdalenae* var. *peirsonii*

Within the geographical area occupied by *Astragalus magdalenae* var. *peirsonii* at the time of listing, we must identify the PCEs laid out in the quantity and spatial arrangement essential to the conservation of the species (i.e., essential physical and biological features) that may require special management considerations or protection. All areas designated as critical habitat are currently occupied, within the species' historical geographic range, and contain sufficient PCEs to support at least one life history function.

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species, we

have determined that the PCEs for *Astragalus magdalenae* var. *peirsonii* are:

(1) West and/or northwest-facing sides of bowls, swales, and slopes consisting of Rositas fine sands within intact, active sand dune systems (defined as sand areas that are subject to sand-moving winds) in the existing range of the species that provide space needed for individual and population growth, including sites for germination, reproduction, seed dispersal, seed bank, and pollination;

(2) The associated co-adapted psammophytic scrub plant community characterized by *Croton wigginsii*, *Eriogonum deserticola*, *Helianthus niveus* ssp. *tephrodes*, *Palafoxia arida* var. *gigantea*, *Pholisma sonora*, *Tiquilia plicata*, *Petalonyx thurberi*, and *Panicum urvilleanum* that provides habitat for insect pollinators, particularly the white-faced digger bee (*Habropoda pallida*), required for reproduction; and

(3) Areas within intact, active sand dune systems between occupied bowls, swales, and slopes that allow for pollinator movement and wind dispersal of fruit and seeds.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the areas within the geographical area occupied by the species at the time of listing contain the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection.

Astragalus magdalenae var. *peirsonii* was listed due to destruction of plants and modification of habitat associated with OHV activity and associated recreational development (63 FR 53596; October 6, 1998). OHVs can impact habitat for *A. m. var. peirsonii* by:

(1) Disrupting the natural processes that support dune formation, movement, and structure, could disrupt the available habitat needed for individual and population growth;

(2) Causing the collapse of dune faces and ridges, which could result in burial of the seed bank;

(3) Disturbing surface sand, thereby decreasing soil moisture needed for establishment of individual plants and population growth; and

(4) Degrading the psammophytic scrub plant community that provides habitat for pollinators required for reproduction.

In the 2004 final critical habitat rule, we stated that OHVs may also increase sand compaction (69 FR 47330).

However, Porter *et al.* (2005, p. 27) measured soil compaction associated with undisturbed dunes, OHV-traversed sand dunes, and dunes disturbed by foot traffic, and found that soil compaction on the undisturbed dunes was significantly higher. They state that winds and rains cause the sand grains on the surface of the dune to sort and pack in undisturbed areas, thereby potentially reducing evaporative water loss from the dunes. They theorize that OHV activity or walking disturbs the surface and may result in increased evaporative water loss in the dunes (Porter *et al.* 2005, p. 27).

Special management considerations or protection may be required to minimize impacts to *Astragalus magdalenae* var. *peirsonii* habitat resulting from OHV recreation. The BLM (2003, Appendix 1, p. 13) listed the following possible management options to protect *A. m. var. peirsonii* and its habitat: (1) Use restrictions based on a permit system that would allow a specified level of use (high, medium, low, no use); (2) temporally based closures or limitations (open during some months or years, closed in others); (3) recognition and management of certain areas within a management area; and/or (4) increased education and outreach to OHV users to avoid certain areas. Special management considerations or protection needed may also include additional enforcement to ensure visitor compliance with these management options.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(1)(A) of the Act, we use the best scientific and commercial data available in determining areas that contain the physical and biological features essential to the conservation of species. We consider BLM's 2005 (Willoughby 2005b) survey data to be the best available information on the distribution and range of *Astragalus magdalenae* var. *peirsonii* on the Dunes. An exceptional amount of rainfall was recorded during the 2004 to 2005 growing season, resulting in the highest recorded abundance of the species to date, with an estimated 1,831,076 plants in the Dunes (Willoughby 2005b, pp. 9–11). This rainfall event coincided with the start of BLM's revised survey methodology, which consisted of a more detailed survey approach and covered a larger portion of the Dunes (Willoughby 2005a, pp. 1–5). The 2005 survey contained 123,488 sample plots covering an effective area of 53,000 acres. Because these surveys occurred

under the best possible growth and germination conditions for the plant and covered the largest area and greatest number of sample point locations, we relied on BLM's raw 2005 survey data as the basis for our criteria and GIS model to delineate critical habitat for *A. m. var. peirsonii*. As stated in the final listing rule (63 FR 53596), the Dunes was, and continues to be, the only area in the United States known to be occupied by *A. m. var. peirsonii*.

Astragalus magdalenae var. *peirsonii* is a short-lived perennial that is likely dependent upon the maintenance of a large seed bank to ensure long-term viability within its dunes ecosystem. We believe the long-term conservation of *A. m. var. peirsonii* is dependent upon conservation of those areas supporting the largest areas of high quality habitat that contain large numbers of standing plants, and that are close enough to other similar areas to allow for necessary dispersal and gene flow. Such areas are most likely to support and maintain relatively large seed banks. We consider such areas to represent the essential core population areas for *A. m. var. peirsonii*, and are the areas most likely to contribute to the recovery of the species. As also discussed in the Summary of Changes from the Previously Designated Critical Habitat and 2007 Proposed Revised Rule section above, we obviously did not have BLM's 2005 (Willoughby 2005b) survey data on the distribution and range of *Astragalus magdalenae* var. *peirsonii* on the Dunes when we proposed critical habitat in 2003. Instead, we developed a model based on four variables depicted on GIS-based maps for determining which areas of the Dunes are essential for the conservation of the species. Aside from using less rigorous distributional data (34 versus 510 transects) collected by the BLM from 1998 to 2002 from poorer rainfall years, we also employed the presence and absence of four other rare psammophytic scrub taxa that occur in the Dunes as a model variable. As a result, the model used for the 2003 proposed critical habitat rule included nearly all areas of occupancy of *A. m. var. peirsonii* and overestimated the areas that meet the definition of critical habitat. Using the raw data collected by BLM during 2005, we were able to more precisely identify the core population areas we consider essential to the conservation of *A. m. var. peirsonii*.

We delineated the final revised critical habitat boundaries using the following criteria and GIS model:

(1) We selected occupied cells (defined in Willoughby (2005b) as 82 ft x 82 ft (25 m x 25 m) survey areas) with a plant density greater than 480 plants

per 2.5 ac (1 ha) (30 plants per cell) as core areas. We used a density of 480 plants per 2.5 ac (1 ha) because this captured the majority of the large clusters of standing plants. As stated above, we believe these higher density core areas contain a larger extent of high quality habitat (e.g., suitable dune morphology and soil moisture). Also, because these core areas contain higher numbers of standing plants in proximity to each other, we believe that these areas likely support relatively large seed banks (a greater number of seeds being contributed by a greater number of standing plants). Therefore, because these core areas contain a larger extent of high-quality habitat and larger seed banks, we determined that these areas support the physical and biological features essential to the conservation of *Astragalus magdalenae* var. *peirsonii*, and are the areas most likely to contribute to the recovery of the species.

(2) We expanded each core area to 5 ac (2 ha) and then merged 5 ac (2 ha) core areas within 328.08 ft (100 m) distances of each other to form aggregated core areas. We expanded core areas to 5 ac (2 ha) to capture the entire population and seed bank in a dune bowl, based on our field observations that most occupied dune bowls are approximately 5 ac (2 ha) in size. We aggregated the 5 ac (2 ha) core areas within 328.08 ft (100 m) of each other to maintain space for wind dispersal of seeds between occupied dune bowls. This 328.08 ft (100 m) distance is a Dunes-wide approximation of the average distance between aggregated core areas.

(3) We then eliminated outlying or remote core areas greater than 1,312 ft (400 m) (4 bowls) from adjacent core areas and core areas less than 1,312 ft (400 m) away but with a plant density less than approximately 370 plants (= 0.0005 of the total observed population of 739,805 plants) within the aggregated core area. This step allowed us to remove core areas with low numbers of plants considered not essential to the conservation of the species. Because these areas are a greater distance from aggregated core areas and/or contain relatively fewer standing plants, we believe these areas either contain a smaller extent of high-quality habitat (e.g., suitable dune morphology and soil moisture) and/or support relatively small seed banks.

(4) We then overlaid a 1,076-ft² (100-m²) grid onto the final core areas to describe the boundaries of the critical habitat. We removed remaining small polygons less than 1,312 ft (400 m) from the core habitat in which the plant density was low. Since these polygons contained a low number of standing plants, we believe these areas contain a smaller extent of high-quality habitat (e.g., suitable dune morphology, soil moisture) and/or support relatively small seed banks.

This methodology captured approximately 92 percent of the 2005 observed population and includes areas that contain high-density core populations, the majority of high-quality habitat, and a large seed bank. These areas support the physical and biological features we have determined are essential to the conservation of the species.

When determining critical habitat boundaries within this final revised rule, we made every effort to avoid developed areas, such as lands covered by buildings, pavement, and other structures, because such lands lack PCEs for *Astragalus magdalenae* var. *peirsonii*. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final revised rule are excluded by text in the final revised rule. Therefore, a Federal action involving these lands would not trigger consultation under section 7 of the Act with respect to critical habitat and the requirements of no adverse modification, unless the specific action may affect adjacent critical habitat.

Revised Critical Habitat Designation

We are designating approximately 12,105 ac (4,899 ha) as revised critical habitat for *Astragalus magdalenae* var. *peirsonii* within 3 units. Table 3 outlines the areas included and the areas excluded from this final revised critical habitat by land ownership. Subunits designated as critical habitat are discussed in detail below in the "Unit Descriptions" section. These units generally correspond to those units in the 2004 designation (see Table 3). The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for *A. m.* var. *peirsonii*. Table 4 shows the occupied units.

TABLE 3.—REVISED CRITICAL HABITAT UNITS AND SUBUNITS FOR ASTRAGALUS MAGDALENAE VAR. PEIRSONII DEPICTING THE AREA DESIGNATED BY SUBUNIT OF CRITICAL HABITAT AND AREAS EXCLUDED FROM THE CRITICAL HABITAT DESIGNATION, BY LAND OWNERSHIP

[Numbers have been rounded to the nearest whole digit and may overestimate area due to rounding.]

Critical habitat unit	Critical habitat subunit	Land ownership ¹	Total area proposed (ac (ha))	Total area excluded (ac (ha))	Total area designated (ac (ha))
Unit 1—Mammoth Wash/North Algodones Dunes Wilderness			4,675 (1,892)	0	4,675 (1,892)
	Subunit 1A	BLM	203 (82)	0	203 (82)
		Private	218 (88)	0	218 (88)
	Subunit 1B	BLM	1,389 (562)	0	1,389 (562)
		Private	22 (9)	0	22 (9)
	Subunit 1C	BLM	730 (296)	0	730 (296)
		State	11 (4)	0	11 (4)
	Subunit 1D	BLM	2,103 (851)	0	2,103 (851)
Unit 2—Gecko/Glamis			4,003 (1,620)	4,003 (1,620)	0
	Subunit 2A	BLM	2,716 (1,099)	2,716 (1,099)	0
	Subunit 2B	BLM	1,287 (521)	1,287 (521)	0
Unit 3—Adaptive Management Area/Ogilby			7,212 (2,919)	0	7,212 (2,919)
	Subunit 3A	BLM	4,487 (1,816)	0	4,487 (1,816)

TABLE 3.—REVISED CRITICAL HABITAT UNITS AND SUBUNITS FOR ASTRAGALUS MAGDALENAE VAR. PEIRSONII DEPICTING THE AREA DESIGNATED BY SUBUNIT OF CRITICAL HABITAT AND AREAS EXCLUDED FROM THE CRITICAL HABITAT DESIGNATION, BY LAND OWNERSHIP—Continued

[Numbers have been rounded to the nearest whole digit and may overestimate area due to rounding.]

Critical habitat unit	Critical habitat subunit	Land ownership ¹	Total area proposed (ac (ha))	Total area excluded (ac (ha))	Total area designated (ac (ha))
	Subunit 3B	BLM	1,176 (476)	0	1,176 (476)
	Subunit 3C	BLM	1,549 (627)	0	1,549 (627)
Unit 4—Buttercup		BLM	218 (88)	0	218 (88)
Total			16,108 (6,519)	4,003 (1,620)	12,105 (4,899)

¹ BLM = Bureau of Land Management; State = California State Lands Commission.

TABLE 4.—OCCUPANCY OF ASTRAGALUS MAGDALENAE VAR. PEIRSONII BY REVISED CRITICAL HABITAT UNITS

Critical habitat unit	Occupied at time of listing?	Currently occupied?	Size of unit in acres (hectares)
Unit 1—Mammoth Wash/North Algodones Dunes Wilderness			
Subunit 1A	Yes	Yes	421 (170)
Subunit 1B	Yes	Yes	1,411 (571)
Subunit 1C	Yes	Yes	741 (300)
Subunit 1D	Yes	Yes	2,103 (851)
Unit 2—Gecko/Glamis			
Subunit 2A	Yes	Yes	2,716 (1,099)
Subunit 2B	Yes	Yes	1,287 (521)
Unit 3—Adaptive Management Area/Ogilby			
Subunit 3A	Yes	Yes	4,487 (1,816)
Subunit 3B	Yes	Yes	1,176 (476)
Subunit 3C	Yes	Yes	1,549 (627)
Unit 4—Buttercup	Yes	Yes	218 (88)

Unit Descriptions

We present brief descriptions of all units and reasons why they meet the definition of critical habitat for *Astragalus magdalenae* var. *peirsonii* below.

Unit 1: Mammoth Wash/North Algodones Dunes Wilderness

Unit 1 consists of 4,675 ac (1,892 ha) of land, further divided into 4 subunits (1A, 1B, 1C, 1D), the majority of which is primarily Federal land under BLM management (Table 3). This unit includes land in the BLM’s Mammoth Wash and North Algodones Dunes Wilderness Management Areas.

Subunits 1A (421 ac (170 ha)) and 1B (1,411 ac (571 ha))

Subunits 1A and 1B are in the Mammoth Wash area. About half of the land in Subunit 1A is under BLM ownership, and the other half is under private ownership (Table 3). The majority of the land in Subunit 1B is managed by the BLM (Table 3). Both subunits were occupied at the time of

listing, are currently occupied, and contain the physical and biological features essential to the conservation of the species. Habitat in Subunits 1A and 1B supports the largest numbers of *Astragalus magdalenae* var. *peirsonii* in the Mammoth Wash Management Area, with approximately 8,002 plants observed in Subunit 1A and 24,623 plants observed in Subunit 1B (based on our calculations using BLM’s 2005 raw survey data). In addition to supporting the PCEs (1, 2, and 3) for the species, habitat within these subunits contains a higher density of standing plants than adjacent areas and likely supports a large seed bank based on our analysis of BLM’s 2005 survey data.

The Mammoth Wash Management Area is used for camping, hunting, rights of way, motion picture/television filming, and OHV recreation (BLM 2003, p. 67). The majority of Subunit 1B is within an interim closure area that is temporarily closed to OHV activity. Because the area outside of the interim closure area is remote and difficult to access, OHV recreationists give it

relatively light visitation on holiday weekends and minimal visitation during the week (BLM 2003, p. 67). This management area had the lowest average annual visitation (approximately 80 vehicles) of all management areas open for OHV use during the 2003–2004, 2004–2005, and 2005–2006 seasons (BLM 2006).

The essential features found in Subunit 1A may require special management considerations or protection, such as use restrictions and/or additional enforcement to minimize impacts associated with OHV use and associated recreational activity. The majority of the habitat in Subunit 1B is now being managed by the BLM to minimize impacts associated with OHV use through an interim closure of the area. However, regardless of the future status of this interim closure area, the essential features found in this subunit may require special management considerations or protection, such as OHV-use restrictions and/or additional enforcement in the future to minimize impacts associated with OHV recreation

(see “Special Management Considerations or Protection” section).

Subunits 1C (741 ac (300 ha)) and 1D (2,103 ac (851 ha))

The majority of land in Subunit 1C and all of the land in Subunit 1D is Federal land managed by the BLM (Table 3). Both subunits were occupied at the time of listing, are currently occupied, and contain the physical and biological features essential to the conservation of the species. Habitat in Subunits 1C and 1D retains the most natural and pristine features of the Dunes ecosystem, and includes the best remaining example of a dune system undisturbed by intensive OHV recreation in the ISDRA. These areas also support the largest numbers of *Astragalus magdalenae* var. *peirsonii* in the North Algodones Dunes Wilderness Management Area, with approximately 15,519 plants observed in Subunit 1C and 42,673 plants observed in Subunit 1D (based on our calculations using BLM’s 2005 raw survey data). In addition to supporting the PCEs (1, 2, and 3) for the species, habitat within these subunits contains a higher density of standing plants than adjacent areas and likely supports a large seed bank based on our analysis of BLM’s 2005 survey data.

The North Algodones Dunes Wilderness Management Area is a 32,000 ac (12,955 ha) area that was designated as a wilderness area in 1994 to protect a number of rare and endemic plant and animal species, including *Astragalus magdalenae* var. *peirsonii*. Activities in this area include photographic activities, sightseeing, walking, hiking, backpacking, camping, nature study, horseback riding, hunting, rights-of-way, and wildlife viewing (BLM 2003, p. 71). No recreational use of mechanized vehicles of any kind (OHVs, motorcycles, bicycles, hang gliders, motorized equipment, or motorboats) is allowed in the wilderness area; management takes the form of “minimal and subtle on-site controls and restrictions” (BLM 2003). However, people occasionally trespass with motorized vehicles, and the BLM acknowledges that the amount of motorized trespasses in this area should be reduced (BLM 2003, p. 71).

The essential features found in both subunits may require special management considerations or protection; such as additional enforcement to minimize impacts associated with unauthorized trespass by motorized vehicles (see “Special Management Considerations or Protection” section).

Unit 2: Gecko/Glamis

Unit 2 consists of 4,003 ac (1,620 ha) of land further divided into 2 Subunits (2A and 2B), which are Federal lands managed by the BLM (Table 3). This unit includes lands in the BLM’s Gecko and Glamis Management Areas, with the majority being in the Gecko Management Area. We are excluding Unit 2 based upon the disproportionately high impacts (both monetary and otherwise) of including this unit relative to the other units in this final revised designation, as discussed below in “Areas Excluded Under Section 4(b)(2) of the Act.”

Unit 3: Adaptive Management Area (AMA)/Ogilby

Unit 3 consists of 7,212 ac (2,919 ha) of land further divided into 3 subunits (3A, 3B, 3C), which are Federal lands under BLM management (Table 3). This unit includes lands in the BLM’s AMA and Ogilby Management Areas.

Subunits 3A (4,487 ac (1,816 ha)), 3B (1,176 ac (476 ha)), and 3C (1,549 ac (627 ha))

All three subunits were occupied at the time of listing, are currently occupied, and contain the physical and biological features essential to the conservation of the species. Habitat in Subunits 3A, 3B, and 3C represents the largest, widest, and highest sand dune fields within the Dunes and supports the largest numbers of *Astragalus magdalenae* var. *peirsonii* Dunes-wide, with approximately 200,021 plants observed in Subunit 3A; 178,837 plants observed in Subunit 3B; and 125,526 plants observed in Subunit 3C (based on our calculations using BLM’s 2005 raw survey data). In addition to supporting the PCEs (1, 2, and 3) for the species, habitat within these subunits contains a higher density of standing plants than adjacent areas and likely supports a large seed bank based on our analysis of BLM’s 2005 survey data.

All of Subunit 3A and about half of Subunit 3B are in the BLM’s AMA. The other half of Subunit 3B and all of Subunit 3C are in the Ogilby Management Area. The AMA is intended primarily for OHV recreation, although there is also rights-of-way use (BLM 2003, p. 84). However, the entire AMA, including all of Subunit 3A and most of Subunit 3B, is within an interim closure area, temporarily closed to OHV activity. The Ogilby Management Area is used for camping, OHV recreation, and rights-of-way (BLM 2003, p. 90). A portion of the Ogilby Management Area, including a small portion of Subunit 3C, is within an interim closure area,

temporarily closed to OHV activity. Areas of the Ogilby Management Area open to OHV use had average annual visitation of approximately 12,951 vehicles during the 2003–2004, 2004–2005, and 2005–2006 seasons (BLM 2006).

The essential features found in Subunit 3C not within the interim closure area may require special management considerations or protection such as use restrictions and/or additional enforcement to minimize impacts associated with OHV recreation. Habitat in Subunits 3A and 3B, and a small portion of Subunit 3C, are currently being managed by the BLM to minimize impacts associated with OHV use through an interim closure of the area. However, regardless of the future status of this interim closure area, the essential features found in these subunits may require special management considerations or protection such as OHV-use restrictions and/or additional enforcement in the future to minimize impacts associated with OHV recreation (see “Special Management Considerations or Protection” section).

Unit 4: Buttercup

Unit 4 consists of 218 ac (88 ha) of Federal land entirely under BLM management (Table 3). This unit includes lands in the BLM’s Buttercup Management Area. This unit was occupied at the time of listing, is currently occupied, and contains the physical and biological features essential to the conservation of the species. Habitat in Unit 4 supports the largest number of *Astragalus magdalenae* var. *peirsonii* in the Buttercup Management Area, with approximately 30,011 plants observed (based on our calculations using BLM’s 2005 raw survey data). In addition to supporting the PCEs (1, 2, and 3) for the species, habitat within these subunits contains a higher density of standing plants than adjacent areas and likely supports a large seed bank based on our analysis of BLM’s 2005 survey data.

This area is used for camping, OHV recreation, sight-seeing, commercial vending, education, filming, and rights of way (BLM 2003, p. 97). The Buttercup Management Area had the second highest average annual visitation (approximately 78,629 vehicles) of the management areas open for OHV use during the 2003–2004, 2004–2005, and 2005–2006 seasons (BLM 2006). Due to its proximity to Mexico, United States-Mexico international border issues (e.g., illegal border crossings and smuggling of goods and contraband) also exist in this management area resulting in

frequent patrol by the U.S. Border Patrol (BLM 2003, p. 97). The essential features found in Unit 4 may require special management considerations or protection such as use restrictions and/or additional enforcement to minimize impacts associated with intensive OHV activity (see "Special Management Considerations or Protection" section).

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify designated critical habitat. Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our definition of "destruction or adverse modification" (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional to serve its intended conservation role for the species.

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

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

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

- Can be implemented in a manner consistent with the intended purpose of the action,
- Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

- Are economically and technologically feasible, and
- Would, in the Director's opinion, avoid jeopardizing the continued existence of the listed species or destroying or adversely modifying critical habitat.

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

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies may sometimes need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

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

Application of the "Adverse Modification" Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the essential features to

an extent that appreciably reduces the conservation value of critical habitat for *Astragalus magdalenae* var. *peirsonii*. Generally, the conservation role of *A. m.* var. *peirsonii* critical habitat units is to support viable core area populations.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore should result in consultation for *Astragalus magdalenae* var. *peirsonii* include, but are not limited to, activities that disrupt the natural processes that support dune formation, movement, and structure; or otherwise change the morphology of the dunes (e.g., ridges, slip faces, bowls, swales); and activities that degrade or diminish psammophytic scrub, including activities that (a) Disturb the sand such that soil moisture is lost resulting in decreased seed germination or desiccation of plants resulting in premature death, or (b) bury or expose seeds resulting in decreased seed germination; or (c) physically impact or dislodge plants resulting in premature death such as (please see the "Special Management Considerations or Protection" section for a more detailed discussion on the impacts of these actions to *A. m.* var. *peirsonii*):

- (1) Development of the Recreational Area Management Plan for the Imperial Sand Dunes Recreation Area by the BLM;
- (2) Issuance of permits for private actions (e.g. filming) on Federal lands within the Dunes by the BLM;
- (3) Modifications to the All American Canal in the Dunes vicinity by the Bureau of Reclamation;
- (4) Construction and maintenance of facilities by the U.S. Border Patrol; and
- (5) Other monitoring and enforcement activities of the U.S. Border Patrol involving vehicular operations on the Dunes.

We consider all of the revised critical habitat units to contain the physical and biological features essential to the conservation of *Astragalus magdalenae* var. *peirsonii*. All units are within the geographic range of this taxon and all were occupied by the species at the time of listing. Federal agencies already consult with us on activities in areas currently occupied by *A. m.* var. *peirsonii*, or if the species or its

designated critical habitat may be affected by the action, to ensure that their actions do not jeopardize the continued existence of *A. m. var. peirsonii* or destroy or adversely modify its designated critical habitat.

Exclusions

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

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

In the following sections, we address a number of general issues that are relevant to the exclusions we considered. In addition, the Service has conducted an economic analysis of the impacts of the proposed revision to designated critical habitat and related factors (referred to here as the DEA). The DEA was made available for public review and comment from July 27, 2007, to September 25, 2007 (72 FR 41258). Substantive comments and information received on the DEA are summarized above in the "Summary of Comments and Recommendations" section and have been incorporated into the final analysis, as appropriate. Based on public comment on the DEA, the proposed revision to critical habitat, and the information in this final revised designation of critical habitat and the final economic analysis, we have excluded areas from the revised critical habitat under the provisions of section 4(b)(2) of the Act. This is provided for in the Act and in our implementing regulations at 50 CFR 424.19.

Benefits of Designating Critical Habitat

The process of designating critical habitat as described in the Act requires that the Service identify those lands within the geographical area occupied by the species at the time of listing on which are found the physical or biological features essential to the conservation of the species that may

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

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

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

the action's effects on the designated habitat's contribution to the species' conservation. This will, in many instances, lead to different results and different regulatory requirements.

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

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

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

As stated above, the designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation has been initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and/or adverse modification of its critical habitat. Conversely,

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

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

Economics

Section 4(b)(2) of the Act allows the Secretary to exclude areas from critical habitat for economic reasons if the Secretary determines that the benefits of

such exclusion exceed the benefits of designating the area as critical habitat. However, this exclusion cannot occur if it will result in the extinction of the species concerned.

In making the following exclusions, we have considered in general that all of the costs and other impacts predicted in the economic analysis might not be avoided by this exclusion. This is because all of the areas in question are currently occupied by *Astragalus magdalenae* var. *peirsonii* and there will be requirements for consultation under section 7 of the Act; in addition, other protections for the species exist elsewhere in the Act and under State and local laws and regulations.

Concurrent with the publication of the proposed revised critical habitat designation, we announced the availability of an economic analysis to estimate the potential economic effect of the revised designation. The draft economic analysis was made available for public review on July 27, 2007 (72 FR 41258). We accepted comments on the draft analysis until September 25, 2007.

The primary purpose of the economic analysis is to estimate the potential economic impacts associated with the revised designation of critical habitat for *Astragalus magdalenae* var. *peirsonii*. The information regarding the incremental impacts of the critical habitat designation is intended to assist the Secretary in making decisions about whether the benefits of excluding particular areas from the revised designation outweigh the benefits of including those areas in the revised designation.

The current analysis focuses on the direct and indirect costs of the rule. However, economic impacts to land use activities can exist in the absence of critical habitat. These impacts may result from, for example, local zoning laws, State and natural resource laws, and enforceable management plans and best management practices applied by other State and Federal agencies. Economic impacts that result from these types of protections are not included in the analysis, as they are considered to be part of the regulatory and policy baseline.

The economic analysis considers the potential economic effects of actions relating to the conservation of *Astragalus magdalenae* var. *peirsonii*, including costs associated with sections 4, 7, and 10 of the Act, and identifies the incremental impacts attributable solely to the designation of critical habitat. It further considers the economic effects of protective measures taken as a result of other Federal, State,

and local laws that aid habitat conservation for *A. m.* var. *peirsonii* in areas containing the physical and biological features essential to the conservation of the species. The analysis considers both economic efficiency and distributional effects. In the case of habitat conservation, efficiency effects generally reflect the "opportunity costs" associated with the commitment of resources to comply with habitat protection measures (such as lost economic opportunities associated with restrictions on land use).

The analysis also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential impacts of conservation activities on small entities and the energy industry. This information can be used by decision-makers to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, this analysis looks retrospectively at costs that have been incurred since the date *Astragalus magdalenae* var. *peirsonii* was listed as threatened (October 6, 1998; 63 FR 53596), and considers those costs that may occur in the 20 years following a designation of critical habitat.

Based on public comments received and new information, we developed a final economic analysis of the potential incremental economic effects of the revised designation. The total potential post-designation efficiency impacts for the timeframe 2008–2027 range from a lower bound of zero to an upper bound range of \$116–\$127 million in undiscounted dollars (\$5.80 million to \$6.33 million annualized). Discounted future costs are estimated to be \$85.8 million to \$93.3 million (\$5.77 million to \$6.27 million annualized) at a 3 percent discount rate, or \$60.6 million to \$65.7 million (\$5.72 million to \$6.20 million annualized) at a 7 percent discount rate. Most of the impact results from the potential closure of designated critical habitat areas from recreational OHV use. The critical habitat unit with the greatest potential impacts is Unit 2; impacts in this unit constitute about 93 percent of potential efficiency effects. These costs are attributable to loss of revenue generated by businesses supporting the OHV community as a direct result of the designation of critical habitat.

A copy of the final economic analysis with supporting documents is included in our administrative record and may be obtained by contacting U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office (see **ADDRESSES**), or by

download from the Internet at <http://www.fws.gov/carlsbad>.

Areas Excluded Under Section 4(b)(2) of the Act—Unit 2 (Subunits 2A and 2B)

The revised FEA estimates the potential incremental efficiency effects associated with the designation and the potential incremental regional economic impacts. The primary assumption applied in the economic analysis is that the designation of critical habitat for *Astragalus magdalenae* var. *peirsonii* may result in the closure of portions of the critical habitat. This assumption is based on the likely management actions that could result from the critical habitat designation due to our expected interpretation of adverse modification standards in future consultations with BLM, as well as the past behavior of BLM in closing areas to protect the listed plant. The economic analysis presents two scenarios that bound the potential economic impacts. At the lower bound, the analysis assumes that visitation levels are not affected by closures of portions of the ISDRA to OHV use. Specifically, the lower bound scenario allows for various potential outcomes, including the possibility that BLM chooses a management action other than closure of areas or that OHV recreators substitute to other areas without a loss in consumer surplus or a change in spending patterns. The upper bound scenario reflects the assumption that, while overall growth in visitation to the ISDRA will continue, some that would have made a trip to the ISDRA for OHV recreation will choose not to due to the closure of portions of the designated critical habitat.

At the lower bound, incremental economic efficiency effects are not expected. The present value of upper bound, estimated potential economic efficiency effects ranges from \$60.6 million to \$65.7 million using a 7 percent discount rate (\$5.72 million to \$6.20 million annualized) over the next 20 years (\$116 million to \$127 million in undiscounted dollars). The range reflects uncertainties in the assumed growth in visitation. For the regional economic impacts, no incremental impacts are forecast at the lower bound. At the upper bound, potential reductions in OHV use at the ISDRA resulting from critical habitat could result in regional economic impacts of \$15.8 million to \$34.0 million in total output and a potential reduction of 345 to 743 jobs, depending on assumed growth in visitation and levels of recreator expenditures. The FEA notes that the measures of potential regional economic impacts included in the report are fundamentally different than

the reported potential efficiency effects, and thus cannot be added to or compared with estimates of changes in economic efficiency.

The potential OHV use welfare impacts (the potential efficiency impacts minus the potential administrative and project modification costs) associated with critical habitat Unit 2 (Subunits 2A and 2B) ranges between zero and \$113 million and accounts for approximately 93 percent of the potential economic impacts.

In addition to economic impacts quantified in the FEA, designating critical habitat in the Dunes area is likely to result in a number of costs for which we were not able calculate dollar amounts; for example, the cost of lost recreational opportunities, and decreased quality of recreation in areas not affected by potential closures. These costs could potentially be incurred in any of the proposed critical habitat units, but for reasons discussed in more detail below, we believe the benefits of including Unit 2 in the critical habitat designation are far outweighed by these costs. Thus, after weighing the benefits of including versus the benefits of excluding Unit 2, which includes both the Gecko and Glamis Management Areas, we are excluding Unit 2 from the final critical habitat designation for *Astragalus magdalenae* var. *peirsonii* under section 4(b)(2) of the Act.

A detailed analysis of our exclusion of these lands under section 4(b)(2) of the Act is provided in the paragraphs that follow.

Additional Benefits of Inclusion

In addition to the general benefits of designating critical habitat outlined above in “Benefits of Designating Critical Habitat,” the added protection the species and its critical habitat will receive under section 7(a)(2) of the Act is the primary benefit of including Unit 2 (Subunits 2A and 2B) in the final critical habitat designation for *Astragalus magdalenae* var. *peirsonii*. Unit 2 is located entirely within Federal lands managed by the BLM. Section 7(a)(2) of the Act requires Federal agencies to consult on any action authorized, funded, or carried out by such agency to insure that the action will not jeopardize a listed species or destroy or adversely modify its critical habitat. Therefore, because virtually all actions on Federal land will have a Federal nexus, the benefit of consultation under section 7(a)(2) of the Act is greatest on Federal lands such as the lands in Unit 2, when the biological factors are otherwise comparable on non-Federal lands.

The management implications of a designation of critical habitat for this unit range from no change to full closure. Whether critical habitat designation will result in closures of portions of the ISDRA is dependent on future management decisions of the BLM and the outcome of the section 7 consultation on BLM’s Imperial Sand Dunes Recreation Area Management Plan; however the inclusion of this unit in the critical habitat designation significantly increases the possibility that a primary management objective of the unit will be *A. m. var. peirsonii* recovery.

It is important to note, however, that even in the absence of a critical habitat designation, Unit 2 will not be subject to development, or any other impact that is expected to permanently destroy *Astragalus magdalenae* var. *peirsonii* habitat; the main impact in this area has been and will be OHV use, and *A. m. var. peirsonii* has persisted over time in Unit 2 despite consistent OHV use in the area. While OHV use has been shown to potentially cause density reduction in *A. m. var. peirsonii* (Groom *et al.* 2007; USFWS 2007), *A. m. var. peirsonii* can continue to persevere at reduced density levels. Including Unit 2 in the critical habitat designation would be expected to benefit the species and contribute to the species’ conservation by likely reducing OHV impacts within the unit. However, exclusion of Unit 2 would not result in the extirpation of *A. m. var. peirsonii* in the area, and plants could persist at sufficient densities to contribute to genetic diversity and maintain gene flow between adjacent units to the northwest and southeast. Thus, the area would still be expected to contribute to the overall conservation of the species.

Benefits of Exclusion

We have identified two major benefits to excluding Unit 2 from the final *Astragalus magdalenae* var. *peirsonii* critical habitat designation: (1) Virtually eliminating the potential economic impacts estimated in the FEA and (2) minimizing the impact to the significant social benefits derived from recreating in the area.

The present value upper bound efficiency impacts to OHV recreation estimated in the FEA range from \$81.4 million to \$89.0 million using a 3 percent discount rate (\$113 million to \$121 million in undiscounted dollars). Upper bound regional economic impacts range from \$15.8 million to \$34.0 million in total output and 345 to 743 jobs. In addition, the present value upper bound project modifications are forecast to total \$3.11 million using a 7

percent discount rate (\$5.88 million in undiscounted dollars) over 20 years. This includes the cost to BLM to install and maintain signage and enforce the potential closure of portions of critical habitat in the ISDRA. Excluding Unit 2 will potentially reduce virtually all of the economic impacts estimated by the final FEA.

Section 102(a) of the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 *et seq.*, the law which defines and details the mission of the BLM, states, "The Congress declares that it is the policy of the United States that—(8) the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use." The BLM is thereby charged with managing the federal lands under its purview in a manner that advances each of the above uses as appropriate. Thus, in developing and implementing its Recreation Area Management Plan for the ISDRA, BLM must balance the responsibility to provide protection for ecological resources, such as *Astragalus magdalenae* var. *peirsonii* and its habitat, with its mission to provide recreational opportunities, such as OHV use.

The ISDRA comprises the largest mass of sand dunes in the state of California, and is recognized as a world-class OHV recreational area because of the exceptional OHV recreational opportunities it presents (BLM 1987). The ISDRA does support other recreational activities, such as hiking and horseback riding, but OHV use is by far the most prevalent recreational activity taking place in the active dunes of the ISDRA. The ISDRA provides a unique recreation opportunity for those who participate in OHV activities, and there are significant social benefits to excluding Unit 2 from the final critical habitat designation. Numerous members of the public and groups representing thousands of OHV users submitted comments during the comment period for the proposed revised critical habitat rule and the DEA expressing how highly they value recreating in the Gecko and Glamis Management Areas (which include Unit 2). For example, the American Sand Association, a non-profit organization representing approximately 30,500 members, stated in its comments on the proposed revised

critical habitat rule and the DEA that if OHV users could not reach preferred recreational areas from the camping areas along Gecko road, their incentive to visit the ISDRA at all will be greatly diminished. Other commenters stated that if engaging in OHV recreation at the Dunes were to become infeasible, it would result in lost opportunities to enjoy an activity they consider a tradition with family and friends. This area is by far the most heavily used by visitors to the ISDRA; an estimated 400,474 people visited the area during the 2006 fiscal year, while an estimated 275,202 people visited the next most heavily used area (Buttercup) (BLM, 2006a). OHV users camp in the campgrounds along Gecko Road and use the nearby staging areas to prepare for OHV recreation in the dunes to the east. If Unit 2 is included in the designation and the area is subsequently closed to OHV use, such a management response by BLM would likely result in the access to these dunes being cut off along roughly 75 percent of the length of Gecko Management Area. As stated above, such a closure would likely reduce the number of trips OHV recreators make to the dunes annually, or cause individuals to stop visiting altogether, resulting in lost opportunities to enjoy an activity they consider a tradition with family and friends. Although we were not able to quantify this cost in the FEA, we are aware that closure of Unit 2 to OHV use would constitute a significant loss to those who regularly recreate there.

Thus, we believe the recreational benefits offered by the ISDRA is an "other relevant impact" which is most appropriate to be considered when making decisions that will affect accessibility of the Dunes to OHV recreators. While special consideration of a particular recreational land use may not be appropriate in most areas where habitat and species preservation and recovery are an issue, we believe that that the ISDRA presents a situation where impacts to recreation in the area should be given significant weight in our balancing analysis under section 4(b)(2) of the Act.

Benefits of Exclusion Outweigh Benefits of Inclusion

The primary benefits of including Unit 2 are related to the likely greater level of conservation management of *Astragalus magdalenae* var. *peirsonii* in the unit due to the regulatory implications of critical habitat, and the contribution of that management towards species recovery. Although *A. m. var. peirsonii* would not receive the full conservation benefit that could be

achieved by the inclusion of Unit 2 in the critical habitat designation, we still expect this area to contribute to the genetic diversity, gene flow between adjacent units to the northwest and southeast, and the overall conservation of the species. In contrast, the inclusion of Unit 2 in the critical habitat designation would likely result in disproportionately high economic and significant social impacts in this area relative to the impacts of the overall critical habitat designation. Unit 2 contains approximately 8.5 percent of the total observed occurrences of *A. m. var. peirsonii* within the proposed revised critical habitat, while over 90 percent of the potential incremental economic costs associated with the proposed revised critical habitat designation, and the majority of the unquantifiable impacts associated with the proposal, are attributed to Unit 2.

Therefore, based on the above discussions, we have determined that the benefits of excluding Unit 2 (Subunits 2A and 2B) from this critical habitat designation outweigh the benefits of including the unit. Unit 2 will still be subject to all other provisions of the Act, including the requirement that no Federal actions jeopardize the continued existence of the species.

Exclusion Will Not Result in Extinction of the Species

We have determined that the exclusion of the lands in Unit 2 will not result in the extinction of *Astragalus magdalenae* var. *peirsonii* for several reasons: The area excluded encompasses approximately 8.5 percent of the total observed population within the proposed revised critical habitat boundaries and approximately 7.8 percent of the total observed population in the Dunes; the species still occupies Unit 2 despite the OHV activity in portions of the area; and, because Unit 2 is occupied by *A. m. var. peirsonii*, BLM must consult with us under section 7(a)(2) of the Act, on its actions occurring within Unit 2 (including resource management) that may affect the species, to insure that such actions will not jeopardize the continued existence of the species.

Required Determinations

Regulatory Planning and Review

In accordance with E.O. 12866, we evaluate four parameters in determining whether a rule is significant. The four parameters that would result in a designation of significant under E.O. 12866 are:

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

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

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

(d) The rule would raise novel legal or policy issues.

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

Based on the economic analysis of the critical habitat designation, we have determined that the revised designation of critical habitat for *Astragalus magdalenae* var. *peirsonii* will not result in an annual effect on the economy of \$100 million or more or affect the economy in a material way. Based on previous critical habitat designations and the economic analysis, we believe this rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. OMB has requested to informally review this rule, and thus this action may raise novel legal or policy issues. In accordance with the provisions of E.O. 12866, this rule is considered significant.

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

In developing our designations of critical habitat, we consider economic impacts, impacts to national security, and other relevant impacts pursuant to section 4(b)(2) of the Act. Based on the discretion allowable under this

provision, we may exclude any particular area from the designation of critical habitat providing that the benefits of such exclusion outweigh the benefits of specifying the area as critical habitat and that such exclusion would not result in the extinction of the species. We believe that the evaluation of the inclusion or exclusion of particular areas, or a combination of both, constitutes our regulatory alternative analysis for designations.

Regulatory Flexibility Act

Under the Regulatory Flexibility Act (RFA) (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a statement of factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

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

general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if this revised designation of critical habitat for *Astragalus magdalenae* var. *peirsonii* would affect a substantial number of small entities, we considered the number of small entities affected within particular types of economic activities (e.g., OHV recreation). We considered each industry or category individually to determine if certification is appropriate. However, the SBREFA does not explicitly define "substantial number" or "significant economic impact." Consequently, to assess whether a "substantial number" of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the numbers of small entities potentially affected, we also considered whether their activities have any Federal involvement.

Designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies; non-Federal activities are not affected by the designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they fund, permit, or implement that may affect *Astragalus magdalenae* var. *peirsonii*. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinstate consultation for ongoing Federal activities.

In general, two different mechanisms in section 7 consultations could lead to additional regulatory requirements for a project's impact on *Astragalus magdalenae* var. *peirsonii* and its habitat. First, if we conclude, in a biological opinion, that a proposed action is likely to jeopardize the continued existence of a species or adversely modify its critical habitat, we can offer "reasonable and prudent alternatives." Reasonable and prudent alternatives are alternative actions that can be implemented in a manner consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that would

avoid jeopardizing the continued existence of listed species or result in adverse modification of critical habitat. A Federal agency and an applicant may elect to implement a reasonable and prudent alternative associated with a biological opinion that has found jeopardy or adverse modification of critical habitat. An agency or applicant could alternatively choose to seek an exemption from the requirements of the Act or proceed without implementing a reasonable and prudent alternative. However, unless an exemption were obtained, the Federal agency or applicant would be at risk of violating section 7(a)(2) of the Act if it chose to proceed without implementing a reasonable and prudent alternative.

Second, if we find that a proposed action is not likely to jeopardize the continued existence of a listed animal or plant species, we may identify discretionary conservation recommendations designed to minimize or avoid the adverse effects of a proposed action on listed species or critical habitat, help implement recovery plans, or to develop information that could contribute to the recovery of the species.

Based on our experience with consultations under section 7 of the Act for all listed species, virtually all projects—including those that, in their initial proposed form, would result in jeopardy or adverse modification determinations in section 7 consultations—can be implemented successfully with, at most, the adoption of a reasonable and prudent alternative. Reasonable and prudent alternatives, by definition, must be economically feasible and within the scope of authority of the Federal agency involved in the consultation. We can only describe the general kinds of actions that may be identified in future reasonable and prudent alternatives. These are based on our understanding of the needs of the species and the threats it faces, as described in the final listing rule and this revised critical habitat designation. Within the final critical habitat units, the types of Federal actions or authorized activities that we have identified as potential concerns are:

(1) Development of the Recreational Area Management Plan for the Imperial Sand Dunes Recreation Area by the Bureau of Land Management;

(2) Issuance of permits for private actions (e.g., filming) on Federal lands within the Dunes by the Bureau of Land Management;

(3) Modifications to the All American Canal by the Bureau of Reclamation; and

(4) Construction and maintenance of facilities by the U.S. Border Patrol.

The most likely Federal involvement would be through Federal projects and permits for private actions on Federal lands.

It is likely that the Bureau of Land Management or other project proponent could modify a project or take measures to protect *Astragalus magdalenae* var. *peirsonii*. The kinds of actions that may be included if future reasonable and prudent alternatives become necessary include conservation set-asides, management of competing nonnative species, restoration of degraded habitat, and regular monitoring. These are based on our understanding of the needs of the species and the threats it faces, as described in the final listing rule and proposed critical habitat designation. These measures are not likely to result in a significant economic impact to project proponents.

In our economic analysis of this proposed designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to proposed designation of critical habitat for *Astragalus magdalenae* var. *peirsonii*. In our analysis of impacts to small entities (appendix A of economic analysis), we estimated that a total of up to 827 small entities in OHV-related sectors could be impacted by critical habitat designation, with 398 of those businesses in Imperial County and 429 in Yuma County. Exhibit A-4 of our Economic Analysis (on page A-8) presents an estimated “per business impact to small entities.” In Imperial County, the average impact per small entity is estimated to be \$62,200, which is 4.53 percent of the estimated average per business annual sales of \$1,370,000. In Yuma County the average impact per small entity is estimated to be \$10,400, which is 0.72 percent of the estimated average per business annual sales of \$1,440,000. The composite average for both Counties is estimated to be \$35,300 per small entity, which is 2.50 percent of the estimated average per business annual sales of \$1,410,000. Although a number of small entities will be affected by the designation, we do not believe the economic impact will be significant.

The potential impact to small entities due to the critical habitat designation should be lessened by the exclusion of Unit 2. As discussed above, approximately 93 percent of the potential economic costs associated with the proposed critical habitat are attributed to Unit 2 (\$113,000,000 estimated upper bound). Costs to small businesses make up 86 percent of the potential economic impacts associated

with the proposed critical habitat in Unit 2. Exclusion of Unit 2 should eliminate about \$97,000,000 of the estimated \$104,060,000 cost to small businesses (about 93 percent). This exclusion will greatly reduce economic impacts to small entities.

In summary, we have considered whether this final designation of critical habitat for *Astragalus magdalenae* var. *peirsonii* would result in a significant economic impact on a substantial number of small entities. Based on the reasoning discussed above, we certify that the designation of critical habitat for *A. m.* var. *peirsonii* will not result in a significant impact on a substantial number of small business entities. Please see the “Economic Analysis” section above, the draft economic analysis, and the final economic analysis for a more detailed discussion of potential economic impacts. A regulatory flexibility analysis is not required.

Unfunded Mandates Reform Act

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

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

private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

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

(b) We do not believe that this rule will significantly or uniquely affect small governments, because the majority of the lands (98 percent) involved in the proposed designation are federally owned. As such, Small Government Agency Plan is not required.

Takings

In accordance with E.O. 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), we have analyzed the potential takings implications of designating critical habitat for *Astragalus magdalenae* var. *peirsonii* for this rule in a takings implications assessment. The takings implications assessment concludes that this designation of critical habitat for *A. m. var. peirsonii* does not pose significant takings implications.

Federalism

In accordance with Executive Order 13132 (Federalism), 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 final revised critical habitat designation with appropriate State resource agencies in California; however, we did not

receive any comments from State or local agencies. The majority of the lands (98 percent) involved in the designation are federally owned and, therefore, the designation 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 that contain the physical and biological features essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the conservation 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).

Civil Justice Reform

In accordance with E.O. 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of section 4 of the Act. This final revised 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 *Astragalus magdalenae* var. *peirsonii*.

Paperwork Reduction Act of 1995

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

National Environmental Policy Act (NEPA)

It is our position that, outside the jurisdiction of the Circuit Court of the United States for the Tenth Circuit, we do not need to prepare environmental analyses as defined by the NEPA (42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This assertion was upheld by the Circuit Court of the

United States for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

In accordance with the President’s memorandum of April 29, 1994, “Government-to-Government Relations with Native American Tribal Governments” (59 FR 22951), Executive Order 13175, and the Department of Interior’s manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no Tribal lands that meet the definition of critical habitat for *Astragalus magdalenae* var. *peirsonii*. Therefore, critical habitat for *A. m. var. peirsonii* has not been designated on Tribal lands.

Energy Supply, Distribution, or Use

On May 18, 2001, the President issued an Executive Order (E.O. 13211; Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. Based on our economic analysis, energy-related impacts associated with *Astragalus magdalenae* var. *peirsonii* critical habitat designation are not expected. As noted by BLM, the likelihood of any energy-related activity occurring within the critical habitat is minimal for a number of reasons. First, utility corridors exist outside of the critical habitat area. Second, areas of the ISDRA likely to experience development are not included in the designation. Third, the construction and maintenance of projects (such as utility lines) away from current roads, canals, and railways and through the central, more remote portions of the Dunes is likely to be economically infeasible. Thus, this designation is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

References Cited

A complete list of all references cited in this rulemaking is available upon request from the Field Supervisor, Carlsbad Fish and Wildlife Office (see **ADDRESSES**).

Author(s)

The primary authors of this rulemaking are staff of the Carlsbad Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—[AMENDED]

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

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

■ 2. In ;17.96(a), revise the entry for “Family Fabaceae: *Astragalus magdalenae* var. *peirsonii* (Peirson’s Milk-Vetch)” to read as follows:

§ 17.96 Critical habitat—plants.

(a) Flowering plants.

* * * * *

Family Fabaceae: *Astragalus magdalenae* var. *peirsonii* (Peirson’s Milk-Vetch)

(1) Critical habitat units are depicted for Imperial County, California, on the maps below.

(2) The primary constituent elements of critical habitat for *Astragalus magdalenae* var. *peirsonii* are:

(i) West and/or northwest-facing sides of bowls, swales, and slopes consisting of Rositas fine sands within intact, active sand dune systems (defined as sand areas that are subject to sand-moving winds) in the existing range of the species that provide space needed for individual and population growth, including sites for germination, reproduction, seed dispersal, seed bank, and pollination;

(ii) The associated co-adapted psammophytic scrub plant community characterized by *Croton wigginsii*, *Eriogonum deserticola*, *Helianthus niveus* ssp. *tephrodes*, *Palafoxia arida*

var. *gigantea*, *Pholisma sonora*, *Tiquilia plicata*, *Petalonyx thurberi*, and *Panicum urvilleanum* that provides habitat for insect pollinators, particularly the white-faced digger bee (*Habropoda pallida*), required for reproduction; and

(iii) Areas within intact, active sand dune systems between occupied bowls, swales, and slopes that allow for pollinator movement and wind dispersal of fruit and seeds.

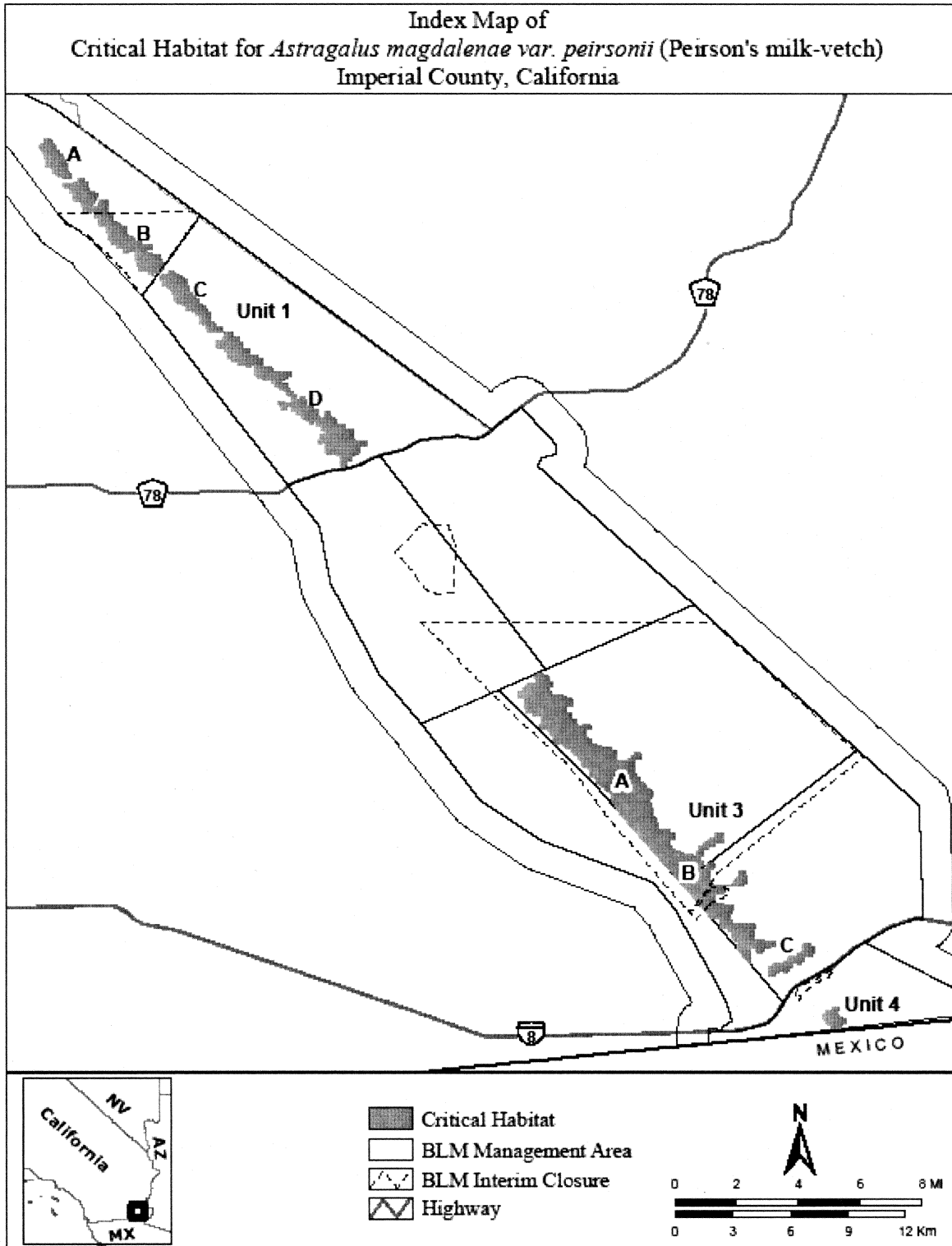
(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) Critical habitat map units. Data layers defining map units were created using U.S. Geological Survey (USGS) 1:24,000 quadrangles.

(5) *Note:* Index map follows:

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Index Map of Critical Habitat for *Astragalus magdalenae* var. *peirsonii*



(6) Unit 1: Mammoth Wash/North Algodones Dunes Wilderness, Imperial County, California.

(i) Subunit 1A, Mammoth Wash, Imperial County, California. From USGS 1:24,000 quadrangles Amos and Tortuga, lands bounded by the following UTM NAD83 coordinates (E, N): 657000, 3668000; 657300, 3668000; 657300, 3667900; 657400, 3667900; 657400, 3667800; 657500, 3667800; 657500, 3667700; 657600, 3667700; 657600, 3667400; 657800, 3667400; 657800, 3667200; 657900, 3667200; 657900, 3667100; 658000, 3667100; 658000, 3666900; 658100, 3666900; 658100, 3666700; 658200, 3666700; 658200, 3666500; 658100, 3666500; 658100, 3666400; 658200, 3666400; 658200, 3666300; 658300, 3666300; 658300, 3666200; 658400, 3666200; 658400, 3665900; 657900, 3665900; 657900, 3666000; 657700, 3666000; 657700, 3666100; 657600, 3666100; 657600, 3666200; 657400, 3666200; 657400, 3666500; 657300, 3666500; 657300, 3666600; 657100, 3666600; 657100, 3667000; 657000, 3667000; 657000, 3667200; 656900, 3667200; 656900, 3667400; 656800, 3667400; 656800, 3667500; 656700, 3667500; 656700, 3667700; 656800, 3667700; 656800, 3667800; 657000, 3667800; thence returning to 657000, 3668000.

(ii) Subunit 1B, Mammoth Wash, Imperial County, California. From USGS 1:24,000 quadrangle Amos, lands bounded by the following UTM NAD83 coordinates (E, N): 658700, 3665900; 659100, 3665900; 659100, 3665800; 659200, 3665800; 659200, 3665500; 659100, 3665500; 659100, 3665400; 659300, 3665400; 659300, 3665300; 659600, 3665300; 659600, 3665200; 659700, 3665200; 659700, 3665100; 659800, 3665100; 659800, 3665000; 659700, 3665000; 659700, 3664800; 659600, 3664800; 659600, 3664600; 659500, 3664600; 659500, 3664500; 659800, 3664500; 659800, 3664600; 659900, 3664600; 659900, 3664800; 660300, 3664800; 660300, 3664300; 660200, 3664300; 660200, 3664200; 660300, 3664200; 660300, 3664100; 660600, 3664100; 660600, 3663700; 660700, 3663700; 660700, 3663600; 660900, 3663600; 660900, 3663500; 661000, 3663500; 661000, 3663400; 661200, 3663400; 661200, 3663000; 661300, 3663000; 661300, 3662900; 661600, 3662900; 661600, 3662800; 661700, 3662800; 661700, 3662600; 662000, 3662600; 662000, 3662500; 662600, 3662500; 662600, 3662300; 662500, 3662300; 662500, 3662200; 662300, 3662200; 662300, 3662000; 662600, 3662000; 662600, 3661900; 663000, 3661900; 663000, 3661700; 663100, 3661700; 663100, 3661500;

663200, 3661500; 663200, 3661200; 663100, 3661200; 663100, 3661100; 663000, 3661100; 663000, 3661000; 662700, 3661000; 662700, 3660800; 662500, 3660800; 662500, 3660900; 662400, 3660900; 662400, 3661100; 661900, 3661100; 661900, 3661300; 661800, 3661300; 661800, 3661600; 661700, 3661600; 661700, 3662100; 661300, 3662100; 661300, 3662000; 661100, 3662000; 661100, 3662400; 661000, 3662400; 661000, 3662300; 660700, 3662300; 660700, 3662500; 660500, 3662500; 660500, 3662600; 660400, 3662600; 660400, 3662700; 660300, 3662700; 660300, 3663100; 660200, 3663100; 660200, 3663400; 659900, 3663400; 659900, 3663500; 659800, 3663500; 659800, 3663800; 659600, 3663800; 659600, 3664200; 659500, 3664200; 659500, 3664300; 659400, 3664300; 659400, 3664100; 659100, 3664100; 659100, 3664200; 659000, 3664200; 659000, 3664500; 658900, 3664500; 658900, 3664800; 658800, 3664800; 658800, 3664700; 658600, 3664700; 658600, 3664800; 658500, 3664800; 658500, 3665200; 658300, 3665200; 658300, 3665400; 658000, 3665400; 658000, 3665500; 657900, 3665500; 657900, 3665700; 658600, 3665700; 658600, 3665800; 658700, 3665800; thence returning to 658700, 3665900.

(iii) Subunit 1C, North Algodones Wilderness Area, Imperial County, California. From USGS 1:24,000 quadrangles Acolita and Amos, lands bounded by the following UTM NAD83 coordinates (E, N): 663400, 3661100; 663700, 3661100; 663700, 3661000; 663800, 3661000; 663800, 3660900; 664000, 3660900; 664000, 3660800; 664100, 3660800; 664100, 3660700; 664200, 3660700; 664200, 3660600; 664400, 3660600; 664400, 3660300; 664500, 3660300; 664500, 3659900; 664600, 3659900; 664600, 3659800; 664700, 3659800; 664700, 3659700; 664800, 3659700; 664800, 3659600; 665000, 3659600; 665000, 3659300; 665200, 3659300; 665200, 3659200; 665300, 3659200; 665300, 3659100; 665400, 3659100; 665400, 3658900; 665600, 3658900; 665600, 3658400; 665800, 3658400; 665800, 3658300; 665900, 3658300; 665900, 3658100; 666200, 3658100; 666200, 3657900; 666100, 3657900; 666100, 3657800; 666000, 3657800; 666000, 3657900; 665400, 3657900; 665400, 3658000; 665300, 3658000; 665300, 3658200; 665200, 3658200; 665200, 3658300; 665000, 3658300; 665000, 3658700; 664800, 3658700; 664800, 3658900; 664700, 3658900; 664700, 3659000; 664300, 3659000; 664300, 3659200; 664100, 3659200; 664100, 3659300;

663900, 3659300; 663900, 3659400; 663800, 3659400; 663800, 3659500; 663700, 3659500; 663700, 3659800; 663600, 3659800; 663600, 3660000; 663500, 3660000; 663500, 3660100; 663400, 3660100; 663400, 3660200; 663300, 3660200; 663300, 3660300; 663100, 3660300; 663100, 3660500; 663000, 3660500; 663000, 3660800; 663100, 3660800; 663100, 3660900; 663400, 3660900; thence returning to 663400, 3661100.

(iv) Subunit 1D, North Algodones Wilderness Area, Imperial County, California. From USGS 1:24,000 quadrangles Acolita and Glamis NW, lands bounded by the following UTM NAD83 coordinates (E, N): 666500, 3657900; 666700, 3657900; 666700, 3657700; 666800, 3657700; 666800, 3657600; 667100, 3657600; 667100, 3657300; 667300, 3657300; 667300, 3657000; 667600, 3657000; 667600, 3656600; 668100, 3656600; 668100, 3656400; 668300, 3656400; 668300, 3656000; 668700, 3656000; 668700, 3655900; 668800, 3655900; 668800, 3655800; 669500, 3655800; 669500, 3655700; 669600, 3655700; 669600, 3655800; 669800, 3655800; 669800, 3655500; 669600, 3655500; 669600, 3655400; 669400, 3655400; 669400, 3655300; 669300, 3655300; 669300, 3655100; 669600, 3655100; 669600, 3655000; 669500, 3655000; 669500, 3654900; 669700, 3654900; 669700, 3654700; 669900, 3654700; 669900, 3654500; 670100, 3654500; 670100, 3654300; 670200, 3654300; 670200, 3654400; 670500, 3654400; 670500, 3654300; 670600, 3654300; 670600, 3653900; 670900, 3653900; 670900, 3653800; 671200, 3653800; 671200, 3653400; 671300, 3653400; 671300, 3653300; 671500, 3653300; 671500, 3653600; 671600, 3653600; 671600, 3653700; 671800, 3653700; 671800, 3653400; 671900, 3653400; 671900, 3653300; 672100, 3653300; 672100, 3653200; 672200, 3653200; 672200, 3653000; 672600, 3653000; 672600, 3652600; 672700, 3652600; 672700, 3652700; 673000, 3652700; 673000, 3652200; 673100, 3652200; 673100, 3652100; 673700, 3652100; 673700, 3651800; 673400, 3651800; 673400, 3651700; 673300, 3651700; 673300, 3651600; 673400, 3651600; 673400, 3651500; 673300, 3651500; 673300, 3651400; 673100, 3651400; 673100, 3651300; 672900, 3651300; 672900, 3651000; 672700, 3651000; 672700, 3650800; 672600, 3650800; 672600, 3650700; 672400, 3650700; 672400, 3650800; 672300, 3650800; 672300, 3651300; 672200, 3651300; 672200, 3651400; 671600, 3651400; 671600, 3651500; 671500, 3651500; 671500, 3651500; 671500,

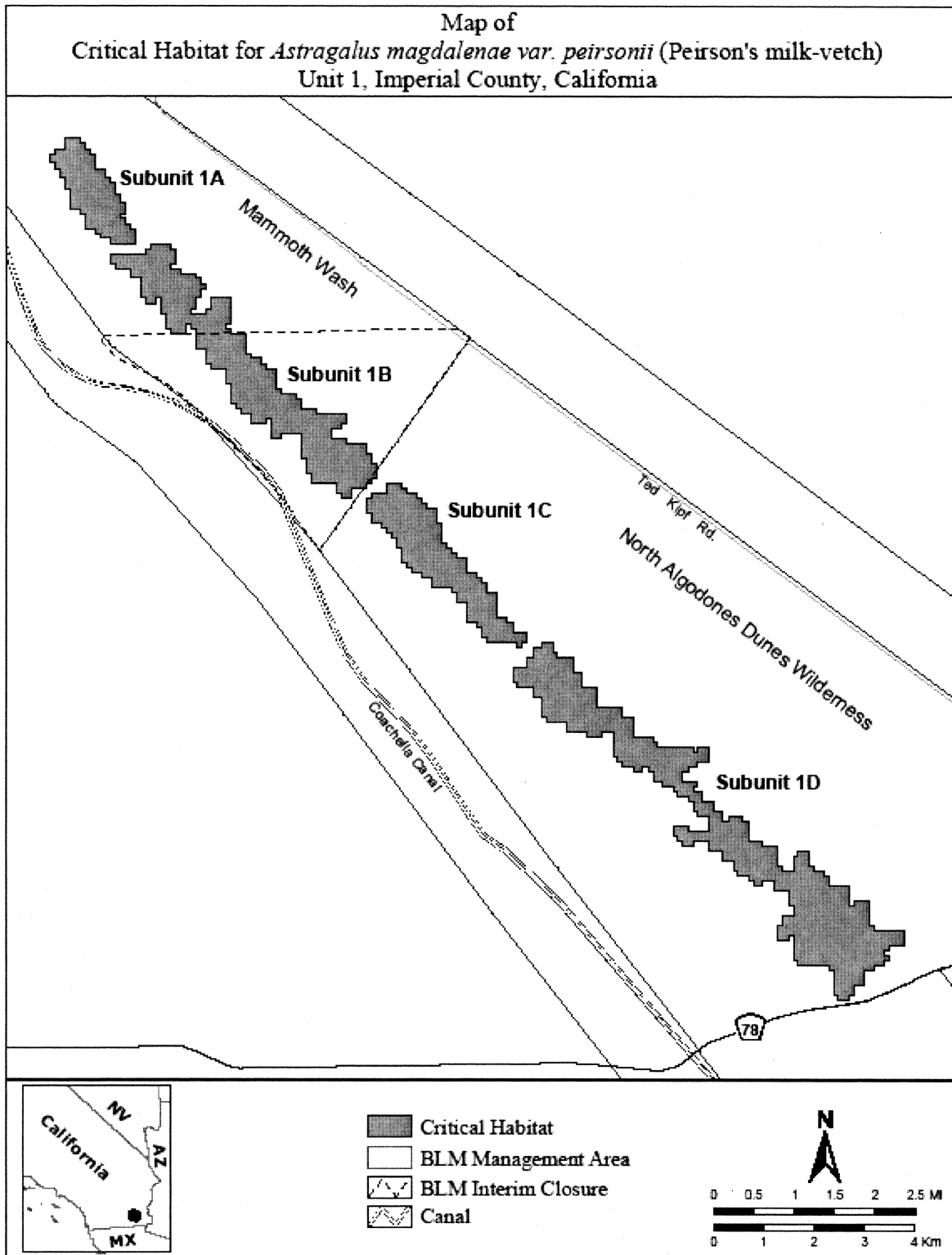
3652000; 671400, 3652000; 671400,
3651900; 671200, 3651900; 671200,
3652200; 671300, 3652200; 671300,
3652400; 671500, 3652400; 671500,
3652600; 671400, 3652600; 671400,
3652900; 671100, 3652900; 671100,
3653100; 670900, 3653100; 670900,
3653000; 670700, 3653000; 670700,
3653100; 670600, 3653100; 670600,
3653200; 670400, 3653200; 670400,
3653300; 670300, 3653300; 670300,
3653500; 670100, 3653500; 670100,
3653700; 669800, 3653700; 669800,
3653900; 669500, 3653900; 669500,
3653800; 669300, 3653800; 669300,
3653900; 669200, 3653900; 669200,

3654000; 669100, 3654000; 669100,
3654200; 669400, 3654200; 669400,
3654100; 669800, 3654100; 669800,
3654400; 669600, 3654400; 669600,
3654500; 669500, 3654500; 669500,
3654700; 669400, 3654700; 669400,
3654800; 669200, 3654800; 669200,
3654900; 669100, 3654900; 669100,
3655000; 668900, 3655000; 668900,
3655100; 668700, 3655100; 668700,
3655300; 668600, 3655300; 668600,
3655400; 668500, 3655400; 668500,
3655300; 668300, 3655300; 668300,
3655400; 668100, 3655400; 668100,
3655500; 668000, 3655500; 668000,
3655600; 667900, 3655600; 667900,

3656100; 667700, 3656100; 667700,
3656000; 667400, 3656000; 667400,
3656100; 667000, 3656100; 667000,
3656300; 666600, 3656300; 666600,
3656400; 666500, 3656400; 666500,
3656800; 666300, 3656800; 666300,
3657000; 666000, 3657000; 666000,
3657100; 665900, 3657100; 665900,
3657400; 666200, 3657400; 666200,
3657600; 666300, 3657600; 666300,
3657800; 666500, 3657800; thence
returning to 666500, 3657900.

(v) *Note:* Map of Unit 1, Mammoth
Wash/North Algodones Dunes
Wilderness, follows:

BILLING CODE 4310-55-P



(7) Unit 3: Adaptive Management Area/Ogilby, Imperial County, California.

(i) Subunit 3A, AMA, Imperial County, California. From USGS 1:24,000 quadrangles Cactus, Glamis and Glamis SE, lands bounded by the following UTM NAD83 coordinates (E, N):

682600, 3639800; 682900, 3639800; 682900, 3639700; 683100, 3639700; 683100, 3639600; 683200, 3639600; 683200, 3639400; 683400, 3639400; 683400, 3639100; 683100, 3639100; 683100, 3639000; 683200, 3639000; 683200, 3638800; 683300, 3638800; 683300, 3638700; 683900, 3638700; 683900, 3638600; 684100, 3638600; 684100, 3638500; 684300, 3638500; 684300, 3638400; 684400, 3638400; 684400, 3638100; 684100, 3638100; 684100, 3637700; 684300, 3637700; 684300, 3637400; 684600, 3637400; 684600, 3637100; 684700, 3637100; 684700, 3637000; 685000, 3637000; 685000, 3637100; 685300, 3637100; 685300, 3637000; 685400, 3637000; 685400, 3636800; 685100, 3636800; 685100, 3636400; 685200, 3636400; 685200, 3636300; 685400, 3636300; 685400, 3636100; 685700, 3636100; 685700, 3636000; 685900, 3636000; 685900, 3635900; 686400, 3635900; 686400, 3635700; 686700, 3635700; 686700, 3635200; 687300, 3635200; 687300, 3635300; 687500, 3635300; 687500, 3635400; 687600, 3635400; 687600, 3635500; 687700, 3635500; 687700, 3635600; 687900, 3635600; 687900, 3635500; 688000, 3635500; 688000, 3635300; 687700, 3635300; 687700, 3635000; 687600, 3635000; 687600, 3634700; 687700, 3634700; 687700, 3634500; 687800, 3634500; 687800, 3634300; 687900, 3634300; 687900, 3634100; 688100, 3634100; 688100, 3634000; 688200, 3634000; 688200, 3633900; 688300, 3633900; 688300, 3633700; 688400, 3633700; 688400, 3633600; 688500, 3633600; 688500, 3633500; 688600, 3633500; 688600, 3633300; 688500, 3633300; 688500, 3633200; 688400, 3633200; 688500, 3632900; 688500, 3632900; 688500, 3632600; 688600, 3632600; 688600, 3632200; 688700, 3632200; 688700, 3632100; 688800, 3632100; 688800, 3631900; 688900, 3631900; 688900, 3631800; 688800, 3631800; 688800, 3631700; 688900, 3631700; 688900, 3631500; 689500, 3631500; 689500, 3631300; 689800, 3631300; 689800, 3631000; 689500, 3631000; 689500, 3630600; thence southwestward to y-coordinate 3630000 at the Management Area boundary; thence northwestward along the Management Area boundary to x-coordinate 686700; thence to 686700, 3632800; 686600,

3632800; 686600, 3632900; 686500, 3632900; 686500, 3633000; 686400, 3633000; 686400, 3633400; 686300, 3633400; 686300, 3633500; 686200, 3633500; 686200, 3633600; 686100, 3633600; 686100, 3633800; 685900, 3633800; 685900, 3633900; 685800, 3633900; 685800, 3634000; 685700, 3634000; 685700, 3634200; 685600, 3634200; 685600, 3634300; 685300, 3634300; 685300, 3634700; 685200, 3634700; 685200, 3634800; 685000, 3634800; 685000, 3634900; 684900, 3634900; 684900, 3635200; 684800, 3635200; 684800, 3635300; 684700, 3635300; 684700, 3635400; 684500, 3635400; 684400, 3635400; 684400, 3635600; 684300, 3635600; 684300, 3635800; 684100, 3635800; 684100, 3635900; 684000, 3635900; 683900, 3636000; 683900, 3636100; 683500, 3636100; 683500, 3636200; 683400, 3636200; 683400, 3636500; 683300, 3636500; 683300, 3636600; 683200, 3636600; 683200, 3636700; 683100, 3636700; 682800, 3636700; 682800, 3636800; 682800, 3636900; 682700, 3636900; 682700, 3637100; 682800, 3637100; 682800, 3637500; 682300, 3637500; 682300, 3637700; 682000, 3637700; 682000, 3638000; 681900, 3638000; 681900, 3638500; 681600, 3638500; 681600, 3638800; 681800, 3638800; 681800, 3639000; 681900, 3639000; 681900, 3639100; 682000, 3639100; 682000, 3639200; 682100, 3639200; 682100, 3639300; 682500, 3639300; 682500, 3639500; 682400, 3639500; 682400, 3639700; 682600, 3639700; thence returning to 682600, 3639800.

(ii) Subunit 3B, AMA/Ogilby, Imperial County, California. From USGS 1:24,000 quadrangle Cactus, lands bounded by the following UTM NAD83 coordinates (E, N): 691900, 3631300; 692300, 3631300; 692300, 3630800; 691900, 3630800; 691900, 3630700; 691800, 3630700; 691800, 3630600; 691500, 3630600; 691500, 3630500; 691200, 3630500; 691200, 3630100; 691100, 3630100; 691100, 3629900; 691200, 3629900; 691200, 3629600; 691100, 3629600; 691100, 3629400; 691400, 3629400; 691400, 3629700; 691600, 3629700; 691600, 3629800; 691700, 3629800; 691700, 3629700; 691800, 3629700; 691800, 3629500; 691700, 3629500; 691700, 3629400; 691500, 3629400; 691500, 3629300; 691600, 3629300; 691600, 3628700; 691700, 3628700; 691700, 3628600; thence southwestward to the Management Area boundary at y-coordinate 3627650; thence northwestward along the Management Area boundary to y-coordinate 3630000;

thence northeastward to 689500, 3630600; thence to 689600, 3630600; 689600, 3630500; 689700, 3630500; 689700, 3630400; 690000, 3630400; 690000, 3630300; 690200, 3630300; 690200, 3630200; 690700, 3630200; 690700, 3630100; 690900, 3630100; 690900, 3630400; 691000, 3630400; 691000, 3630700; 691200, 3630700; 691200, 3630800; 691300, 3630800; 691300, 3630900; 691500, 3630900; 691500, 3631000; 691600, 3631000; 691600, 3631100; 691800, 3631100; 691800, 3631200; 691900, 3631200; thence returning to 691900, 3631300.

(iii) Subunit 3C, Ogilby, Imperial County, California. From USGS 1:24,000 quadrangle Cactus and Grays Well, lands bounded by the following UTM NAD83 coordinates (E, N): 693100, 3629300; 693400, 3629300; 693400, 3629100; 693500, 3629100; 693500, 3628700; 693300, 3628700; 693300, 3628600; 693200, 3628600; 693200, 3628500; 692400, 3628500; 692400, 3628200; 692300, 3628200; 692300, 3628100; 691900, 3628100; 691900, 3627600; 692300, 3627600; 692300, 3627500; 692800, 3627500; 692800, 3627200; 692700, 3627200; 692700, 3627100; 692500, 3627100; 692500, 3627000; 692600, 3627000; 692600, 3626700; 692700, 3626700; 692700, 3626600; 693800, 3626600; 693800, 3626500; 693900, 3626500; 693900, 3626300; 693800, 3626300; 693800, 3625700; 694400, 3625700; 694400, 3625600; 695000, 3625600; 695000, 3625300; 694700, 3625300; 694700, 3625200; 694400, 3625200; 694400, 3625100; 694300, 3625100; 694300, 3625000; 694000, 3625000; 694000, 3625100; 693900, 3625100; 693900, 3625200; 693700, 3625200; 693700, 3624500; thence westward to the Management Area boundary at y-coordinate 3624500; thence northwestward along the Management Area boundary at x-coordinate 693000; thence to 693000, 3625400; 693100, 3625400; 693100, 3625600; 692900, 3625600; 692900, 3625700; 692800, 3625700; 692800, 3625800; 692700, 3625800; 692700, 3626100; 692500, 3626100; 692500, 3626300; 692100, 3626300; 692100, 3626800; thence westward to the Management Area boundary at y-coordinate 3626800; thence northwestward to y-coordinate 3627650; thence to 691700, 3628600; 692700, 3628600; 692700, 3628700; 692800, 3628700; 692800, 3628800; 692900, 3628800; 692900, 3628900; 693000, 3628900; 693000, 3629000; 693100, 3629000; thence returning to 693100, 3629300; and lands bounded by 696500, 3625500; 696800, 3625500; 696800, 3625300; 697000, 3625300;

697000, 3625000; 696900, 3625000;
696900, 3624800; 696500, 3624800;
696500, 3624600; 696300, 3624600;
696300, 3624400; 696100, 3624400;
696100, 3624500; 695800, 3624500;
695800, 3624200; 695700, 3624200;
695700, 3624000; 695600, 3624000;
695600, 3623900; 695400, 3623900;
695400, 3624000; 695200, 3624000;
695200, 3623900; 695000, 3623900;
695000, 3623800; 694600, 3623800;
694600, 3624300; 694800, 3624300;
694800, 3624400; 694900, 3624400;
694900, 3624500; 695300, 3624500;
695300, 3624400; 695400, 3624400;
695400, 3624600; 695600, 3624600;
695600, 3624700; 695700, 3624700;

695700, 3624800; 696100, 3624800;
696100, 3625000; 696300, 3625000;
696300, 3625100; 696400, 3625100;
696400, 3625400; 696500, 3625400;
thence returning to 696500, 3625500.

(iv) *Note:* The map depicting Unit 3 is found at paragraph (8)(ii) of this entry.

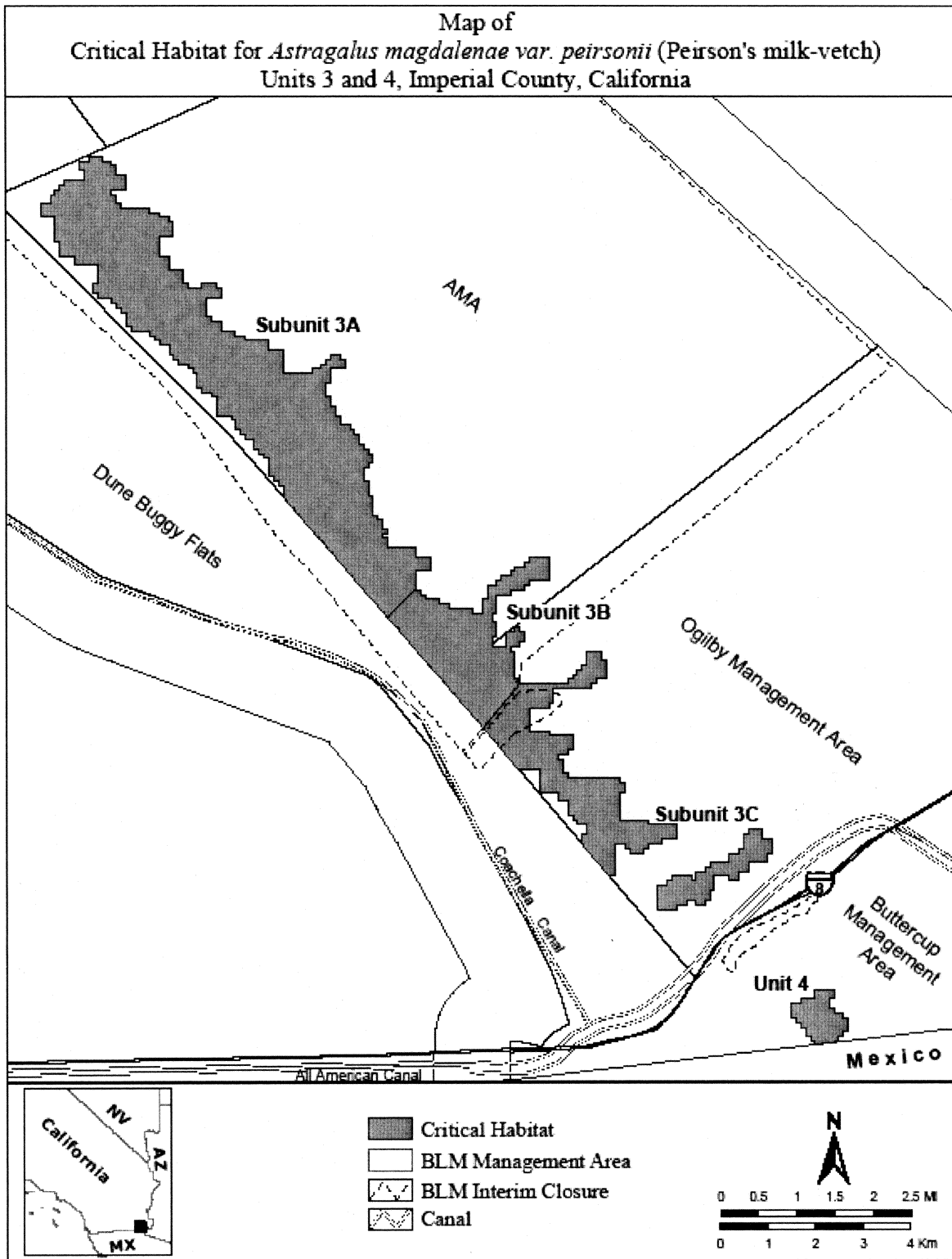
(8) Unit 4: Buttercup, Imperial County, California.

(i) From USGS 1:24,000 quadrangle Grays Well, lands bounded by the following UTM NAD83 coordinates (E, N): 697900, 3622100; 698300, 3622100; 698300, 3621900; 698200, 3621900; 698200, 3621700; 698300, 3621700; 698300, 3621600; 698500, 3621600;

698500, 3621500; 698600, 3621500;
698600, 3621200; 698500, 3621200;
698500, 3621100; 698400, 3621100;
698400, 3621000; 698300, 3621000;
698300, 3620970; 697900, 3620925;
697900, 3621000; 697800, 3621000;
697800, 3621100; 697700, 3621100;
697700, 3621300; 697600, 3621300;
697600, 3621400; 697500, 3621400;
697500, 3621500; 697400, 3621500;
697400, 3621800; 697600, 3621800;
697600, 3621900; 697900, 3621900;
thence returning to 697900, 3622100.

(ii) *Note:* Map of Units 3 and 4 follows:

BILLING CODE 4310-55-P



* * * * *

Dated: February 1, 2008.
David M. Verhey,
*Acting Assistant Secretary for Fish and
Wildlife and Parks.*
[FR Doc. 08-545 Filed 2-13-08; 8:45 am]
BILLING CODE 4310-55-C