

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

RIN 1018-AU45

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Astragalus ampullarioides* (Shivwits Milk-Vetch) and *Astragalus holmgreniorum* (Holmgren Milk-Vetch)**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to designate critical habitat for two endangered plants, *Astragalus ampullarioides* (Shivwits milk-vetch) and *Astragalus holmgreniorum* (Holmgren milk-vetch), pursuant to the Endangered Species Act of 1973, as amended (Act or ESA). In total, approximately 2,620 hectares (ha) (6,475 acres (ac)) fall within the boundaries of the proposed critical habitat designation for *A. holmgreniorum* in Mohave County, Arizona, and Washington County, Utah, and approximately 980 ha (2,421 ac) fall within the boundaries of the proposed critical habitat designation for *A. ampullarioides* in Washington County, Utah.

DATES: We will accept comments from all interested parties until May 30, 2006. We must receive requests for public hearings, in writing, at the address shown in the **ADDRESSES** section by May 15, 2006.

ADDRESSES: If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods:

1. You may submit written comments and information to Henry Maddux, Field Supervisor, U.S. Fish and Wildlife Service, Utah Fish and Wildlife Office, 2369 West Orton Circle, Suite 50, West Valley City, Utah 84119.

2. You may hand-deliver written comments to our office, at the above address.

3. You may send comments by electronic mail (e-mail) to hsmilkvetch@fws.gov. Please see Public Comments Solicited section below for file format and other information about electronic filing.

4. You may fax your comments to 801-975-3331.

5. You may submit comments via the Federal E-Rulemaking Portal at <http://www.regulations.gov>.

Comments and materials received, as well as supporting documentation used

in the preparation of this proposed rule, will be available for public inspection, by appointment, during normal business hours at the Utah Fish and Wildlife Office at the above address.

FOR FURTHER INFORMATION CONTACT:

Field Supervisor, Utah Fish and Wildlife Office, 2369 West Orton Circle, Suite 50, West Valley City, Utah 84119. (telephone 801-975-3330; facsimile 801-975-3331).

SUPPLEMENTARY INFORMATION:**Public Comments Solicited**

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) The reasons any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act, including whether the benefit of designation will outweigh any threats to the species due to designation;

(2) Specific information on the amount and distribution of *Astragalus holmgreniorum* and *A. ampullarioides* habitat, and what habitat has features essential to the conservation of the species and why;

(3) Specific information on the potential significance of a small site of *Astragalus holmgreniorum*, found north of Atkinville wash and west of Interstate Highway 15 (I-15) and not currently included in the proposed designation, to the conservation of the species (see *Occupied Area not Included in Proposal*);

(4) Information regarding the inclusion of: (a) Occupied habitat for *Astragalus holmgreniorum* and *A. ampullarioides* found in intervening areas of I-15 (i.e., between the northbound and southbound lanes and within the highway right-of-way but outside the highway prism) (see *Proposed Critical Habitat Designation for A. holmgreniorum*, Subunit 1a: State Line, and *Proposed Critical Habitat Designation for A. ampullarioides*, Subunit 4a: Harrisburg Bench and Cottonwood); and (b) the intervening lands between occupied sites in Arizona (see *Proposed Critical Habitat Designation for A. holmgreniorum*, Subunit 1a: State Line);

(5) Information regarding the benefits of excluding specific lands from, or including specific lands in, the designation of critical habitat including

but not limited to, lands managed by Shivwits Band of Paitutes, Utah School and Institutional Trust Lands Administration (SITLA), Arizona State Land Department (ASLD), and lands recently burned due to wildfire (see Proposed Critical Habitat Designation for *Astragalus holmgreniorum*, Unit 4a);

(6) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed critical habitat;

(7) Any foreseeable economic, national security, or other potential impacts resulting from the proposed designation and, in particular, any impacts on small entities; and

(8) Whether our approach to designating critical habitat could be improved or modified in any way to provide for greater public participation and understanding, or to assist us in accommodating public concerns and comments.

If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods (see **ADDRESSES** section). Please submit Internet comments to hsmilkvetch@fws.gov in ASCII file format and avoid the use of special characters or any form of encryption. Please also include "Attn: Shivwits or Holmgren milk-vetch" in your e-mail subject header and your name and return address in the body of your message. If you do not receive a confirmation from the system that we have received your Internet message, contact us directly by calling our Utah Fish and Wildlife Office at phone number 801-975-3330. Please note that the Internet address hsmilkvetch@fws.gov will be closed at the termination of the public comment period.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home addresses from the rulemaking record, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold from the rulemaking record a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment, but you should be aware that the Service may be required to disclose your name and address pursuant to the Freedom of Information Act. However, we will not consider anonymous comments. We will make all submissions from organizations or businesses, and from individuals

identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

Role of Critical Habitat in Actual Practice of Administering and Implementing the ESA

Attention to and protection of habitat is paramount to successful conservation actions. The role that designation of critical habitat plays in protecting habitat of listed species, however, is often misunderstood. As discussed in more detail below in the discussion of exclusions under ESA section 4(b)(2), there are significant limitations on the regulatory effect of designation under ESA section 7(a)(2). In brief, (1) designation provides additional protection to habitat only where there is a Federal nexus; (2) the protection is relevant only when, in the absence of designation, destruction or adverse modification of the critical habitat would in fact take place (in other words, other statutory or regulatory protections, policies, or other factors relevant to agency decision-making would not prevent the destruction or adverse modification); and (3) designation of critical habitat triggers the prohibition of destruction or adverse modification of that habitat, but it does not require specific actions to restore or improve habitat.

Currently, only 470 species, or 37 percent of the 1,264 listed species in the United States under the jurisdiction of the Service, have designated critical habitat. We address the habitat needs of all 1,264 listed species through conservation mechanisms such as listing, section 7 consultations, the section 4 recovery planning process, the section 9 protective prohibitions of unauthorized take, section 6 funding to the States, the section 10 incidental take permit process, and cooperative, nonregulatory efforts with private landowners. The Service believes that it is these measures that may make the difference between extinction and survival for many species.

In considering exclusions of areas proposed for designation, we evaluated the benefits of designation in light of *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*. In that case, the Ninth Circuit invalidated the Service's regulation defining "destruction or adverse modification of critical habitat." In response, on December 9, 2004, the Director issued guidance to be considered in making

section 7 adverse modification determinations. This proposed critical habitat designation does not use the invalidated regulation in our consideration of the benefits of including areas in this final designation. The Service will carefully manage future consultations that analyze impacts to designated critical habitat, particularly those that appear to be resulting in an adverse modification determination. Such consultations will be reviewed by the Regional Office prior to finalizing to ensure that an adequate analysis has been conducted that is informed by the Director's guidance.

On the other hand, to the extent that designation of critical habitat provides protection, that protection can come at significant social and economic cost. In addition, the mere administrative process of designation of critical habitat is expensive, time-consuming, and controversial. The current statutory framework of critical habitat, combined with past judicial interpretations of the statute, make critical habitat the subject of excessive litigation. As a result, critical habitat designations are driven by litigation and courts rather than biology, and made at a time and under a time frame that limits our ability to obtain and evaluate the scientific and other information required to make the designation most meaningful.

In light of these circumstances, the Service believes that additional agency discretion would allow our focus to return to those actions that provide the greatest benefit to the species most in need of protection.

Procedural and Resource Difficulties in Designating Critical Habitat

We have been inundated with lawsuits for our failure to designate critical habitat, and we face a growing number of lawsuits challenging critical habitat determinations once they are made. These lawsuits have subjected the Service to an ever-increasing series of court orders and court-approved settlement agreements, compliance with which now consumes nearly the entire listing program budget. This leaves the Service with little ability to prioritize its activities to direct scarce listing resources to the listing program actions with the most biologically urgent species conservation needs.

The consequence of the critical habitat litigation activity is that limited listing funds are used to defend active lawsuits, to respond to Notices of Intent (NOIs) to sue relative to critical habitat, and to comply with the growing number of adverse court orders. As a result, listing petition responses, the Service's own proposals to list critically

imperiled species, and final listing determinations on existing proposals are all significantly delayed.

The accelerated schedules of court-ordered designations have left the Service with limited ability to provide for public participation or to ensure a defect-free rulemaking process before making decisions on listing and critical habitat proposals, due to the risks associated with noncompliance with judicially imposed deadlines. This in turn fosters a second round of litigation in which those who fear adverse impacts from critical habitat designations challenge those designations. The cycle of litigation appears endless, and is very expensive, thus diverting resources from conservation actions that may provide relatively more benefit to imperiled species.

The costs resulting from the designation include legal costs, the cost of preparation and publication of the designation, the analysis of the economic effects and the cost of requesting and responding to public comment, and in some cases the costs of compliance with the National Environmental Policy Act (NEPA). These costs, which are not required for many other conservation actions, directly reduce the funds available for direct and tangible conservation actions.

Background

We intend to discuss only those topics directly relevant to the designation of critical habitat in this proposed rule. For more information on the *Astragalus holmgreniorum* and *A. ampullarioides* refer to the final listing rule published in the **Federal Register** on September 28, 2001 (66 FR 49560).

Both *Astragalus holmgreniorum* and *A. ampullarioides* are members of the pea family (Fabaceae or Leguminosae). *A. holmgreniorum* is found in both Washington County, Utah (UT), and Mohave County, Arizona (AZ), while *A. ampullarioides* is only found in Washington County, UT. Both species are narrowly distributed Mojave Desert endemics. Three populations of *A. holmgreniorum* and five populations of *A. ampullarioides* are known to exist (66 FR 49560; September 28, 2001). However, the distribution of plants within these populations is not always continuous; therefore, some populations are split into more than one site or proposed critical habitat unit.

For the purposes of this proposed rule, the term "population" refers to an area of species concentration of either *Astragalus holmgreniorum* or *A. ampullarioides* individuals. The term "occurrence" indicates a record of one

or more individual plants. A "site" refers to the land that supports individuals of the species, while a "unit" refers to specific sites that are being considered for critical habitat designation.

Astragalus holmgreniorum

All known populations of *Astragalus holmgreniorum* occur within approximately 16 kilometers (km) (10 miles (mi)) of St. George, UT in Washington County, UT and in Mohave County, AZ. Populations are found between 756 and 914 meters (m) (2,480 and 3,000 feet (ft)) in elevation in areas that drain to the Santa Clara and Virgin rivers. The landscape has small and large hill and plateau formations which are broken up by water erosion. *A. holmgreniorum* is most frequently found on the skirt edges of hill and plateau formations, slightly above or on the edge of drainage areas (e.g., Harper and Van Buren 1997, 2004; Service, unpublished data, 2005). In areas where *A. holmgreniorum* is found, a large portion of the soil surface is non-vegetated, and is characterized by small stone and gravel deposits (Van Buren and Harper 2003a). *A. holmgreniorum* frequently occur near intermittent drainage and receive "run on" water from nearby sloping areas (Harper 1997; Harper and Van Buren 1997). This, combined with slower evaporation due to shading produced by the small stone and gravel, may create better water relations in excess of regional rainfall (Harper 1997; Harper and Van Buren 1997).

Astragalus holmgreniorum is a short-lived perennial; few plants live past three years, with 4 years being the oldest documented lifespan (Stubben 1997; Van Buren and Harper 2003a). Second-year and older plants appear several weeks before seedlings, generally in late February or early March. The best time to detect the species is while it is producing flowers (typically between March and April) and fruit (the majority of plants set fruits by the end of April). Seed pods are persistent until the end of May. Plants die back to roots between late May and mid-June (Van Buren and Harper 2003a).

Annual fluctuations in the number of individuals within a population are great. Years with adequate precipitation produced a population estimated at 10,000 individuals, while populations in dry years may be as few as 500 individuals (Van Buren and Harper 2003a). Surveys conducted in different areas in 2003 and 2004 found individual numbers at 12,315 and 15,902 respectively (Van Buren 2003; Van Buren 2004). These more intensive

surveys indicate that in some years population numbers are higher than the 10,000 individuals estimated at the time of the listing rule. However, surveys in 2003 and 2004 occurred in the spring and nearly all individuals counted were seedlings. More seedlings are found when precipitation in the first quarter of the year is higher (Van Buren and Harper 2003a). In the most recent years (2000, 2001, 2003, 2004), high flushes of seedlings have been coupled with a low survivorship rate (58.9 to 96.8 percent mortality) most likely due to the timing of precipitation; this mortality has resulted in relatively few reproductive adults (Van Buren and Harper 2004a). There is not a current total population estimate.

Although the landscape holds an unknown quantity of seeds (referred to as a seed bank), high mortality may be depleting the seed bank (Van Buren 2004). Low survivorship and reproductive results would make this species vulnerable to extinction due to chance events, in the event that the population declines. In addition, in relationship to genetic fitness, seed germination may decrease as a population declines in size (Menges 1991; Heschel & Paige 1995). According to Menges (1990), if a population is to survive, offspring must be produced in quantity to replace the parent population. Currently, *A. holmgreniorum* seedling mortality continues to be very high, and adults are lacking (Van Buren 2003 and 2004; Van Buren and Harper 2004a).

Habitat is often dynamic, and species may move from one area to another over time. Seeds are thought to be dispersed by water as plants are generally found on the skirt edges of washes or in run-off channels around mounds (Harper and Van Buren 1997; Van Buren and Harper 2003a). Rodents and smaller ground-dwelling birds are likely other dispersal agents (Dr. Stanley Welsh, Brigham Young University, pers. comm. 2005).

Astragalus holmgreniorum does not reproduce through vegetative methods; therefore, the setting of seed is necessary for future offspring. Flowers on some *A. holmgreniorum* plants can produce fruit without insect visitation (i.e., autogamously) (Tepedino 2005). However, self-fertilized flowers produced fewer fruits, and this ultimately negatively influences the number of offspring. A loss in pollinators could decrease genetic diversity and population fitness (Tepedino 2005).

Astragalus ampullarioides

All known populations of *Astragalus ampullarioides* occur within Washington County, UT. Locations of *A. ampullarioides* populations are associated with the Chinle Formation, an often purple-hued patch of soft clay soil (Harper and Van Buren 1997; Stubben 1997). Isolated outcrops of the Chinle formation are found around St. George, UT (Armstrong and Harper 1991; Stubben 1997). This substrate, which is light and airy when dry, expands greatly with precipitation, becoming slick and glue-like (Harper 1997). In dry periods, this soil is considered unstable (Van Buren and Harper 2003b). During soil expansion, areas rise up into mounds (Harper 1997). Equal contraction upon drying often results in the formation of deep, wide cracks (Harper 1997). This quality tends to constrict root systems so that few perennial plants persist on the Chinle formation (Harper 1997). Within Zion National Park (Zion NP), known sites of *A. ampullarioides* may possibly contain materials from later geologic formations.

Astragalus ampullarioides populations are found between 920 to 1330 m (3,018 to 4,367 ft) in elevation. Because occupied sites are small in area, it is difficult to link the presence of *A. ampullarioides* to any given soil type. Soil series information for 6 locations, representing 42 *A. ampullarioides* occurrences, lacked strong correlations between presence of *A. ampullarioides* and any given soil type (Service, unpublished, 2005). *A. ampullarioides* is documented from the following soil types described by USDA *et al.* (1977): Stony colluvial land; Naplene silt loam, 2 to 6 percent slope; Eroded land-Shalet complex; Badland, very steep; Mathis-Rock outcrop complex, 20 to 50 percent slopes; Rock land, stony; Bond sandy loam, 1 to 10 percent; Clovis fine sandy loam, 1 to 5 percent slopes; Badland; and Rock land Hobog association (Service, unpublished, 2005).

Astragalus ampullarioides is a perennial herb. Its lifespan is unknown, but available data indicate a lifespan of at least 9 years (Van Buren and Harper 2004b). Flowering occurs between March and late May. In most years, plants dry up by the end of June; however, vestiges of dried plants may persist longer. The perennial rootstock allows *A. ampullarioides* to survive dry years; in a drought year (e.g., 2002) plants may not emerge (Van Buren and Harper 2003b). Dormancy is one documented method by which longer-lived plant species can survive changing climatic conditions, particularly in areas

with variable and unpredictable rainfall (Epling and Lewis 1952). Epling and Lewis (1952) indicate that the adaptive traits of a plant species utilizing dormancy, with some individuals remaining dormant in one growing season while others develop and reproduce, produces populations with some resiliency to environmental fluctuation.

Due to climatic or other conditions, the number of *Astragalus ampullarioides* individuals documented in a given year at a given site varies. The total number of *A. ampullarioides* individuals was estimated at 1,000 individuals at the time of listing, with numbers in Zion NP estimated at 300 to 500 individuals (R. Van Buren 2000, in 66 FR 49560). More recent site visits and surveys at Zion NP have expanded this number to 1,500 individuals (J. Alexander, pers. comm. 2004). Yearly information at other sites has varied, and total numbers are likely to be under 2,000 individuals (Dr. Renee Van Buren, Utah Valley State College, pers. comm. 2005). Variables (such as plant dormancy and population shift due to extinction and colonization of new sites) make estimating the total number of individuals in any given year difficult.

According to Van Buren and Harper (2003a), the number of new *Astragalus ampullarioides* seedlings is related to precipitation in the year of observation, while percent mortality reflects moisture relations experienced in the prior year. Excluding 2002, when plants were not seen due to extreme drought conditions, the percent of adults and overall representation of age classes documented at a single site (Pahcoon Spring Wash) is considered stable (Van Buren and Harper 2003a; Van Buren and Harper 2004b). In the years 2000, 2001, 2003, 2004, seedlings comprised 7.5 to 54 percent of the population, and adults ranged from 40 to 77 percent (Van Buren and Harper 2004b). However, data on population size, reproductive output, and percent survivorship indicate a decline occurred in conjunction with severe drought in 2002 (Van Buren and Harper 2004b). The small population size of most *A. ampullarioides* populations and limited geographic range make these populations vulnerable to randomly occurring catastrophic events, as well as small-scale habitat degradation (66 FR 49560).

No methods of seed dispersal have been documented. Water drainage patterns, landscape erosion, and soil slumping may contribute to the development of appropriate habitat sites and may move seeds within sites (Van

Buren and Harper 2003). The disjunct populations of *Astragalus ampullarioides* suggest bird dispersal, as pockets of Chinle are sufficiently far apart (Dr. S. Welsh, pers. comm. 2005).

Previous Federal Actions

For more information on previous Federal actions concerning the *Astragalus holmgreniorum* and *A. ampullarioides*, refer to the final listing rule published in the **Federal Register** on September 28, 2001 (66 FR 49560).

On September 27, 2004, Center of Biological Diversity and Utah Native Plant Society filed a lawsuit against the Department of Interior (DOI) and the Service. The plaintiffs alleged that we were in violation of the ESA because we had failed to designate critical habitat and we had not developed a recovery plan for the two species. On July 15, 2005, a court settlement was approved with a proposed critical habitat designation to be submitted to the **Federal Register** by March 17, 2006, and a final critical habitat designation to be submitted to the **Federal Register** by December 16, 2006. Recovery planning for these species is ongoing; however, a recovery plan for these species has not yet been completed.

Critical Habitat

Critical habitat is defined in section 3 of the ESA as: (i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the 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 ESA means to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the ESA 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 ESA through the

prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. Section 7 requires consultation on Federal actions that are likely to result in the destruction or adverse modification of 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 government or public access to private lands. Section 7 is a purely protective measure and does not require implementation of restoration, recovery, or enhancement measures.

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

Habitat occupied at the time of listing may be included in critical habitat only if the essential features thereon may require special management or protection. Thus, we do not include areas where existing management is sufficient to conserve the species. (As discussed below, such areas may also be excluded from critical habitat pursuant to section 4(b)(2).) Accordingly, when the best available scientific data do not demonstrate that the conservation needs of the species so require, we will not designate critical habitat in areas outside the geographical area occupied by the species at the time of listing. An area currently occupied by the species but was not known to be occupied at the time of listing will likely, but not always, be essential to the conservation of the species and, therefore, typically included in the critical habitat designation.

The Service's Policy on Information Standards Under the ESA, published in the **Federal Register** on July 1, 1994 (59 FR 34271), and section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658) and the associated Information Quality Guidelines issued by the Service, provide criteria, establish procedures, and provide guidance to ensure that decisions made by the Service represent the best scientific and commercial data available. They require Service biologists to the extent consistent with the ESA and with the use of the best

scientific and commercial data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, a primary source of information is generally the listing package for the species. Additional information sources include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge. All information is used in accordance with the provisions of section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658) and the associated Information Quality Guidelines issued by the Service.

Section 4 of the ESA requires that we designate critical habitat on the basis of the best scientific data available. Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species. For these reasons, critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery.

Areas that support populations, but are outside the critical habitat designation, will continue to be subject to conservation actions implemented under section 7(a)(1) of the ESA and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available information at the time of the 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, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

Methods

As required by the section 4(b)(2) of the Act and its implementing regulations (50 CFR 424.12), we use the best scientific data available in determining areas that contain the physical and biological features that are

essential to the conservation of *Astragalus holmgreniorum* and *A. ampullarioides* (see Primary Constituent Elements section). We reviewed available information that pertains to the habitat requirements of these species. This information included data from our files that we used for listing the species; biological surveys; peer-reviewed articles; agency reports and databases; soil series maps, including regional Geographic Information System (GIS) coverages for Mohave County, AZ, and Washington County, UT; geologic maps; aerial photography; information provided from the Bureau of Land Management (BLM), Zion NP, and SITLA; and discussions with field experts. We also made several visits to *A. holmgreniorum* and *A. ampullarioides* sites with representatives from the BLM, SITLA, the Shivwits Band of the Paiute Tribe, and other botanical experts and interested parties.

We utilized herbarium locations assembled by Armstrong and Harper (1991) and Lee Hughes, BLM Arizona, (pers. comm. 2005); hand-sketched reconnaissance records from the late 1980s and early 1990s; and location polygons provided by BLM (2004). In addition, we examined 2,824 occurrence points for *Astragalus holmgreniorum* and 42 occurrence points for *A. ampullarioides* provided by SITLA, Zion NP, and Dr. R. Van Buren. Field surveyors gathered these points in 2003, 2004, and 2005 using handheld Global Positioning System (GPS) units. Although these points may have some spatial errors due to positions of satellites and overlay of different map layers, we used them as reference for baseline information.

The long-term conservation of both *Astragalus holmgreniorum* and *A. ampullarioides* is dependent upon the protection of existing populations and the maintenance of ecological functions within these sites, including: Connectivity within and between populations within close geographic proximity to facilitate pollinator activity and seed dispersal mechanisms; population expansion; and the ability to maintain these areas free of major ground-disturbing activities. The areas we are proposing to designate as critical habitat provide some or all of the habitat components essential for the conservation of the *A. holmgreniorum* and *A. ampullarioides*. We do not propose any areas outside the geographical area presently occupied by the species. In addition, information provided in comments on the proposed critical habitat designation and draft economic analysis will be evaluated and

considered in the development of the final designation for *A. holmgreniorum* and *A. ampullarioides*.

Primary Constituent Elements

Pursuant to our regulations, we are required to identify the known physical and biological features (PCEs) essential to the conservation of the two *Astragalus* species. These include, but are not limited to—space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for reproduction, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species. All areas proposed as critical habitat for *Astragalus holmgreniorum* and *A. ampullarioides* are occupied, within the species' historic geographic range, and contain sufficient PCEs to support at least one life history function.

The primary constituent elements required for *Astragalus holmgreniorum* and *A. ampullarioides* are derived from their biological needs as described in the Background section of this proposal. They include those habitat components essential for the biological needs of each species, including seed germination and seedling growth, flower production, pollination, seed set and fruit production, and genetic exchange.

Astragalus holmgreniorum

Space for Individual and Population Growth and Food, Water, Air, Light, Minerals or Other Nutritional or Physiological Requirements

Astragalus holmgreniorum has a limited distribution; it is found only in a small area in UT and AZ. Within these areas, *A. holmgreniorum* requires appropriate soils, associated formations, slope, drainage and plant community within the landscape to provide space for individual and population growth and to provide food, water, air, light minerals or other nutritional or physiological requirements. In UT, *A. holmgreniorum* is found on the Virgin Limestone, upper redbed subunits of the Moenkopi formation, and on the Chinle shale formation (Petrified Forest member) with a thin gravel layer from the Shinarump Conglomerate member (Harper and Van Buren 1997). Sites in UT are most affiliated with the following soil series: Both Badland and Badland, very steep; Hobog-Rock Land association; Isom cobbly sandy loam, 3–30 percent slope; Eroded land-Shalet complex, warm (USDA *et al.*, 1977).

Sites in AZ are believed to be associated with the Virgin Limestone member and middle red member of the Moenkopi Formation (L. Hughes, pers. comm. 2005). These sites may be affiliated with the following soil series: Ruesh very gravelly fine sandy loam, 3–20 percent slopes; Gypill-Hobog complex, 6–35 percent slopes; Gypill very cobbly sandy loam, 15–40 percent; and Hobog-Grapevine complex, 2–35 percent slopes (USDA *et al.* 2000).

Astragalus holmgreniorum occurs at elevations from 756 to 914 m (2,480 to 3,000 ft) on sites with slight to moderate slope (Service, unpublished data, 2005). Slopes range from 0 to 46.55 percent (Service, unpublished, 2005), although most individuals of *A. holmgreniorum* are found between 1.54 and 14.01 percent slope (Service, unpublished data, 2005).

Astragalus holmgreniorum occurs in sparsely vegetated warm desert communities. Ninety-eight percent of known sites in UT occur within the landcover described as Sonora-Mojave Creosote-White Bursage Desert Scrub (NatureServe 2004). This classification contains a matrix of desert scrub, sparse to moderately dense (2 to 50 percent cover), found in the broad valleys, plains, and low hills of the Mojave and lower Sonora Deserts. *A.*

holmgreniorum is not found within the lower Sonora Desert. Typical dominant shrubs within this landcover type are *Larrea tridentata* (creosote bush) and *Ambrosia dumosa* (white burrobush). However, in UT, areas where *A. holmgreniorum* is found are generally without *Larrea tridentata* and lack shrub density (Dr. R. Van Buren, pers. comm. 2005). In Arizona, the species occurs within Mohave Mixed Shrub and Mohave Creosote/Bursage habitats (Bennett, Kunzmann, and Graham 2004). Within this ecological system *A. holmgreniorum* is found in low vegetated areas where shrubs are sparse and creosote rarely resides.

Woody plant species associated with *Astragalus holmgreniorum* are *Acamptopappus sphaerocephalus* (desert goldenhead), *Ambrosia dumosa* (white burrobush), *Ephedra nevadensis* (Nevada jointfire), *E. torreyana* (Torrey's jointfir), *Krameria grayi* (White ratany), *K. parvifolia* (range ratany), *Lycium andersonii* (Anderson wolfberry), *Gutierrezia microcephala* (threadleaf snakeweed), and *G. sarothrae* (broom snakeweed). Other commonly-associated, nonwoody species include: *A. nuttallianus* (small flowered milkvetch), *Chaenactis* sp. (pincushion flower), *Cryptantha* sp. (cryptantha), annual *Eriogonum* sp. (buckwheat), *Eriogonum inflatum* (desert trumpet),

Hilaria rigida (big galleta), and *Plantago patagonica* (wholly plantain) (Armstrong and Harper 1991; Van Buren and Harper 2003a and b, 2004a).

Depending on the moisture regime, *A. holmgreniorum* also can be seen with native annuals that are often ephemeral (seen only in the spring) and, like many Mohave Desert plant species, seasonally abundant based on climatic conditions.

Sites for Reproduction, Germination, Seed Dispersal or Pollination

Astragalus holmgreniorum is a native species of sparsely vegetated warm desert communities. Sites for reproduction, germination, and seed dispersal, and pollination providers are found within the communities described above.

Astragalus holmgreniorum relies solely on the production of seeds for reproduction. Optimal seed set occurs through insect visitation and pollination (Tepedino 2005). Thus, the presence of pollinator populations is essential to the conservation of *A. holmgreniorum* (Tepedino 2005). Bees require a sufficient quantity of flowers to attract and support their survivorship (Harper *et al.* 2000; Tepedino 2005). Native bees, such as *Anthophora coptognatha*, *A. dammersi*, *A. porterae*, *Anthophora* sp., *Eucera quadricincta*, *Osmia titusi*, two types of *Dialictus* species, and the introduced honeybee, *Apis mellifera*, are the primary visitors and pollinators of *A. holmgreniorum* (Tepedino 2005). The majority of pollinator species associated with *A. holmgreniorum* likely nest in the ground, either in vertical embankments or on flat surfaces (Tepedino 2005). Unlike other types of bee species who have aggregated nesting areas, the five anthophorid bees (*A. coptognatha*, *A. dammersi*, *A. porterae*, *Anthophora* sp., and *Eucera quadricincta*) have nests that are most likely dispersed and well-hidden (Tepedino 2005). The nesting substrate for *O. titusi* is unknown, while the two species of *Dialictus* nest in the ground.

Many bees expend considerable effort to produce few offspring. Solitary bees, in conditions without predators and with abundant floral resources, have been shown to produce only 15–20 offspring per female (Tepedino 1979). Because solitary bees have low reproductive rates, their populations rebound slowly after habitat perturbations (Tepedino 1979). Additionally, the lack of favorable natural habitat can negatively influence pollination productivity (Kremen *et al.* 2004). Bee populations fluctuate from year to year (Roubik 2001; Tepedino and Stanton 1980 in Tepedino 2005). Redundancy of pollinator species is

important because a pollinator species may be abundant one year and less so the next year (Tepedino 2005). Maintaining a full suite of pollinators allows the likelihood that another pollinator species will stand in for a less abundant one (Tepedino 2005), and is essential in assuring adequate pollination.

Several of the bees visiting *Astragalus holmgreniorum* are fairly generalized in their choices of flowers (*Eucera quadricincta*, *Anthophora coptognatha*, and two types of *Dialictus*); others are known to have flower preferences (Tepedino 2005). *Anthophora porterae* and *Osmia titusi* have a preference for plants in the legumes or pea family (Tepedino 2005). *Anthophora porterae*, a fast and effective forager, is frequently captured or observed visiting *Astragalus* flowers (Tepedino 2005). *Anthophora dammersi* is also known to be a specialist of *Camissonia* and is known to inhabit only areas where *Camissonia* is present (Tepedino 2005).

Bees have a limited foraging range strongly correlated to body size (Greenleaf, 2005; Steffan-Dewenter and Tscharntke 1999). Fragmentation of habitat can result in isolating plants from pollinator nesting sites. When the distance between plants and the natural habitats of pollinators increases, plant reproduction (as measured by mean seed set) can decline by as much as 50 percent in some plant species (Steffan-Dewenter and Tscharntke 1999). Optimal pollination occurs when there is abundance of individual pollinators and a species-rich bee community (Greenleaf 2005).

Greenleaf (2005) defines the typical homing distance of a bee taxon as the distance at which 50 percent of individual bees of that taxon have the ability to return to their home (nest, etc). Pollinators for *Astragalus holmgreniorum* have average body sizes that correlate with typical homing distances of 0.1 to 2.9 km (0.06–1.8 mi), based on Greenleaf (2005). The pollinators with the smallest body size (which constitute one-third of *A. holmgreniorum* visitors) have typical homing distances of around 400 m (1,312 ft) or less (Service, unpublished, 2005). A radius of 400 m (1,312 ft) around a single plant contains approximately 50 ha (124 ac). Thus, in the delineation of proposed critical habitat units when the units/subunits were smaller than 124 ac, we expanded the boundary outward to encompass a full 124 ac to ensure that pollinators would have a sufficient land base to establish nesting sites and to provide pollinating services for *A. holmgreniorum*.

Disturbance, Protection, and the Historical Geographical Distributions

The areas being proposed as critical habitat are representative of the known historic, geographical, and ecological distributions for *Astragalus holmgreniorum*. In total, three units are being proposed that correspond to the three populations described in the final listing rule (66 FR 49560, September 28, 2001). Within these units, three subunits are proposed for the first population and two subunits for the second population, while the third is a single site. All sites contribute to ecological distribution and function for this species by providing representation across the species' limited current range.

Primary Constituent Elements for *Astragalus holmgreniorum*

Based on our current knowledge of the life history, biology, and ecology of the species and the requirements of the habitat to sustain the essential life history functions of the species, the primary constituent elements for *A. holmgreniorum* are:

(1) Appropriate geological layers or soils that support individual *Astragalus holmgreniorum* plants. *A. holmgreniorum* is found on the Virgin Limestone member, middle red member, and upper red member of the Moenkopi Formation and the Petrified Forest member of the Chinle Formation (Harper and VanBuren 1997; L. Hughes, pers. comm. 2005). Associated soils are defined by USDA *et al.* (1977 and 2000 as Badland; Badland, very steep; Eroded land-Shalet complex, warm; Hobog-rock land association; Isom cobbly sandy loam; Ruesh very gravelly fine sandy loam; Gypill Hobog complex, 6–35 percent slopes; Gypill very cobbly sandy loam, 15–40 percent slopes; and Hobog-Grapevine complex, 2–35 percent slopes. These soils are generally found at elevations from 756 to 914 m (2,430 to 3,000 ft) and support the associated native plant species described above with low presence or lack of *Larrea tridentata* (creosote bush).

(2) Topographic features/relief (mesas, ridge remnants, alluvial fans and fan terraces, their summits and backslopes, and gently rolling to steep swales) and the drainage areas along formation edges with little to moderate slope (0 to 20 percent).

These topographic features/relief contribute to the soil substrate and vegetative community described above, natural weathering and erosion, and the natural surface and subsurface structure that provides minimally altered or unaltered hydrological conditions (e.g.,

seasonally available moisture from surface or subsurface runoff).

(3) The presence of insect visitors or pollinators, such as *Anthophora captognatha*, *A. dammersi*, *A. porterae*, *Anthophora* sp., *Eucera quadricincta*, *Osmia titus*, and two types of *Dialictus* sp.

Astragalus ampullarioides

Space for Individual and Population Growth, and Food, Water, Air, Light, Minerals or Other Nutritional or Physiological Requirements

Astragalus ampullarioides has a limited distribution and is found on clay outcroppings associated with the Chinle Formation (Harper and Van Buren 1997; Stubben 1997) and possibly landslide materials from later geologic periods (Zion NP, unpublished, 2005) in a small area in UT. *A. ampullarioides* requires appropriate soils, associated formations, slope, drainage, and plant community within the landscape to provide space for individual and population growth and to provide food, water, air, light minerals or other nutritional or physiological requirements. The texture of this soil is approximately 48.9 percent clay (Van Buren and Harper 2003a). The high content of minerals non-oxidized iron minerals gives the soils purplish red hues. These clay outcroppings are found in limited pockets in Washington County, UT. Topographic relief that contains the Chinle Formation is necessary to maintain the soil and natural hydrologic conditions upon which *A. ampullarioides* relies, such as surface or subsurface runoff, water erosion, and water drainages.

Astragalus ampullarioides occurs at elevations from 920 to 1331 m (3,018 to 4,367 ft) on sites with slight to moderate slope. Individual sites range from 3.1 to 24 percent slope (Service, unpublished, 2005). Most individuals of *A. ampullarioides* are found between 4 and 14 percent slope (Service, unpublished, 2005).

Astragalus ampullarioides is found on sparsely vegetated soil outcroppings within a variety of plant communities. Living plant cover is low, approximately 12.3 percent of the landscape, with annual exotics representing a high proportion (approximately half) of plants seen (Van Buren and Harper 2003a and 2004b). Associated native plant species include annual forbs, such as annual species, *Lotus humistratus* (hairy deer vetch) and *Plantago patagonica* (woolly plantain); perennials, such as *Calochortus flexuosus* (sego lily) and *Dichelostemma pulchellum* (bluedicks); native grass,

such as, *Hilaria rigida* (big galetta); and shrubs, such as *Coleogyne ramosissima* (blackbrush) and *Gutierrezia microcephala* (broom snakeweed) (Van Buren and Harper 2003a and 2004b).

Sites for Reproduction, Germination, Seed Dispersal or Pollination

Sites for reproduction, germination, and seed dispersal, and pollination providers are found within the sparsely vegetated soil outcroppings of the Chinle Formation and their surrounding communities. The Chinle Formation provides sites for reproduction, germination, and seed dispersal. However, habitat for pollinator nesting and foraging extend beyond occupied habitat of *Astragalus ampullarioides* because of the home range size of the pollinators and the need for most pollinators to visit a variety of plant species. Like *A. holmgreniorum*, *A. ampullarioides* relies solely on the production of seeds for reproduction; therefore, pollination is highly linked to its survival as a species. Automatic self-pollination (without insect visitation) produces significantly fewer seeds than the number produced through pollination or insect visitation (Tepedino 2005). A lack of pollinators would gradually decrease the number of seeds in the seed bank (Tepedino 2005).

For optimal pollination, many plants require a diversity of pollinators; these pollinators in turn rely upon a sufficient quantity of floral resources for their survivorship (Rathcke and Jules 1993; Steffan-Dewenter and Tschardt 1999; Kremen et al. 2004; Greenleaf 2005). *A. ampullarioides* has many of the same insect visitors as *A. holmgreniorum* (*Anthophora captognatha*, *A. dammersi*, *A. porterae*, *Anthophora* sp., *Apis mellifera*, *Eucera quadricincta*, *Osmia titusi*, and two types of *Dialictus* species). Additionally, *A. ampullarioides* pollinators include *Bombus morrisoni*, *Hoplitis grinnelli*, *Osmia clarescens*, and *O. marginata*. *Bombus morrisoni* is one of the most abundant bumblebee species in the arid areas of Utah and is the most abundant bumblebee in Washington County (Tepedino 2005). Queens overwinter and nest in rodent holes, under bark, and in wood piles. *B. morrisoni* are social bumblebees. Worker *B. morrisoni* bumblebees are active for most or all of the flowering season and must be capable of gathering pollen and nectar from a variety of flowers. Most individual workers specialize on one or a few species of flowering plants during their lifetime of approximately 3 to 4 weeks. The other three species *O. clarescens*, *O. marginata*, and *H.*

grinnellii, are generalists that visit a wide range of flowers (Tepedino 2005).

As with *Astragalus holmgreniorum*, the associated anthophorid bees for *A. ampullarioides* have well-hidden nests in the ground, either in vertical embankments or on flat surfaces. *Osmia clarescens*, *O. marginata*, and *Hoplitis grinnellii* nest in existing holes in wood made by other insects (e.g., beetles). *O. clarescens* is also known to make its nests in abandoned mud-dauber nests (Tepedino 2005; Tepedino, pers. comm. 2005).

As with *Astragalus holmgreniorum*, reproduction, germination, and pollination of *A. ampullarioides* is accomplished by bee populations. If bees are to be kept active in the area where rare plants occur, then they must be provided with adequate flowers for the whole flight season (Tepedino 2005). Known pollinators for *A. ampullarioides* have body sizes that correlate with typical homing distances ranging from 0.06 mi to 1.8 mi (0.1 km to 2.9 km) (derived from Greenleaf, 2005). The smallest pollinators are limited in the range they can fly, with typical homing distances of around 400 m (1,312 ft) or less (Service, unpublished, 2005). A radius of 400 m (1,312 ft) around a single plant contains approximately 50 ha (124 ac). Thus, in the delineation of proposed critical habitat units when the units/subunits were smaller than 124 ac, we expanded the boundary outward to encompass a full 124 ac to ensure that pollinators would have a sufficient land base to establish nesting sites and to provide pollinating services for *A. ampullarioides*.

Disturbance, Protection, and the Historical Geographical Distributions

The areas being proposed as critical habitat are representative of the known historic, geographical, and ecological distributions for *Astragalus ampullarioides*. In total, we are proposing five units, which correspond to the five populations described in the final listing rule (66 FR 49560; September 28, 2001). We are dividing one unit into two subunits for the Harrisburg Junction population, which was described in the final listing rule as having four disjunct sites (66 FR 49560; September 28, 2001). All sites contribute to ecological distribution and function for this species by providing representation across the known occupied range of the species.

Primary Constituent Elements for *A. ampullarioides*

Based on our current knowledge of the life history, biology, and ecology of

the species, the primary constituent elements for *A. ampullarioides* are:

(1) Outcroppings of soft clay soil, often purple-hued, within the Chinle Formation, at elevations from 920 to 1,330 m (3,018 to 4,367 ft).

Plant species that are characteristically found on these clay soils within the Chinle Formation and can indicate the presence of this PCE for *A. ampullarioides* are listed above under *Space for Individual and Population Growth, and Food, Water, Air, Light, Minerals or Other Nutritional or Physiological Requirements*.

(2) Topographic features/relief, including alluvial fans and fan terraces, and gently rolling to steep swales that are often markedly dissected by water flow pathways from seasonal precipitation with little to moderate slope (3 to 24 percent).

Associated topographic features/relief contribute to the soil substrate and vegetative community described above, natural weathering and erosion, and the natural surface and subsurface structure that provide minimally altered or unaltered hydrological conditions (e.g., seasonally available moisture from surface or subsurface runoff) upon which *Astragalus ampullarioides* depends.

(3) The presence of insect visitors or pollinators, such as *Anthophora captognatha*, *A. damnersi*, *A. porterae*, *Anthophora* species, *Eucera quadricincta*, *Bombus morrisonis*, *Hoplitis grinnelli*, *Osmia clarescens*, *O. marginata*, *O. titus*, *O. clarescens*, and two types of *Dialictus* species.

All areas designated as critical habitat for *Astragalus holmgreniorum* and *Astragalus ampullarioides* are within the geographic area occupied by the species and were known to be occupied at the time of listing. This proposed designation is designed for the conservation of PCEs necessary to support the life history functions that were the basis for the proposal for each species. Because not all life history functions require all the PCEs, not all proposed critical habitat will contain all the PCEs. Each of the areas proposed in this rule have been determined to contain sufficient PCEs to provide for one or more of the life history functions of *Astragalus holmgreniorum* or *Astragalus ampullarioides*. In some cases, the PCEs exist as a result of ongoing Federal actions. As a result, ongoing Federal actions at the time of designation will be included in the baseline in any consultation conducted subsequent to this designation.

Criteria Used To Identify Critical Habitat

We are proposing to designate critical habitat for *Astragalus holmgreniorum* and *A. ampullarioides* on lands that we have determined were occupied at the time of listing and contain the identified primary constituent elements. In identifying proposed critical habitat units for *A. holmgreniorum* and *A. ampullarioides*, we proceeded through a multi-step process.

We obtained records of *A. holmgreniorum* and *A. ampullarioides* distribution from BLM Arizona Strip Field Office (BLM AZ); BLM St. George Field Office (BLM UT); SITLA; Zion NP; Utah Valley State College (R. VanBuren, unpublished GIS data); and both published and unpublished documentation from our files. This information included BLM hand-mapped polygons that outlined occupied or potentially occupied habitats in AZ and UT, primarily developed prior to the species listing (66 FR 49560, September 28, 2001).

For some sites, recent 2003 to 2005 survey information was available and evaluated to identify currently known plant locations (provided by Zion NP, BLM UT, BLM AZ, SITLA, and Van Buren). Although occupied sites may gradually change, recent survey results confirm that plant distribution is similar to known distributions at the time of listing (66 FR 49560; September 28, 2001).

Our approach to delineating critical habitat units was applied in the following manner:

(1) We overlaid plant locations into a GIS database. This provided us with the ability to examine slope, aspect, elevation, vegetation community, and topographic features, such as drainages. These datapoints verified and slightly expanded the previously recorded elevation ranges for both species. Additionally, we found no correlation between aspect and occurrence location for either species. Some affiliation of slope for both species was noted; however, statistical correlation was not conclusive.

To better understand the landscape, we also examined soil series layers, aerial photography, and hardcopy geologic maps. For *Astragalus holmgreniorum*, we focused on soil type and topographic features to maintain slope and natural drainage; for *A. ampullarioides* topographic features to maintain slope and natural drainage were the focus. We were unable to find GIS layers pertaining to geologic survey. For this we visually compared known sites to hard-copy geologic maps. Since

the maps were not of sufficient resolution to further evaluate the purplish red clay soil found in small outcroppings within the Chinle Formation, aerial photography at times was employed to further our understanding of these areas. We verified that *Astragalus ampullarioides* is associated with the Petrified Forest member of the Chinle Formation and *A. holmgreniorum* is associated with the Virgin Limestone member, upper red member of the Moenkopi Formation, Chinle Shale, and Shinarump conglomerate member of the Chinle Formation (Harper and Van Buren 1997) and may also be affiliated with the middle red member of the Moenkopi Formation (Lee Hughes, BLM AZ, pers. comm. 2006).

For both *A. holmgreniorum* and *A. ampullarioides*, we looked at soil survey layers. No two sites of *A. ampullarioides* contained the same type of United States Geological Survey (USGS) soil description. From this, we determined that the clay outcroppings associated with the Petrified Forest Member of the Chinle Formation on which *A. ampullarioides* is found may not be of size significant to be labeled under the USGS soil series. In Utah, *A. holmgreniorum* individuals are associated with Badland and Badland, very steep (84 percent); Hobog-Rock land association (9 percent); and Isom cobbly sand loam, 3–30 percent slope (5 percent). Although we lacked the same degree of information in Arizona, we found that documented sites appeared to be related to Ruesh very gravelly fine sandy loam, 3–20 percent slopes; Gypill-Hobog complex, 6–35 percent slopes; Gypill very cobbly sandy loam, 15–40 percent slopes; and Hobog-Grapevine complex, 2–35 percent slopes (as defined in USDA et al. 2000).

(2) When appropriate, we used geographic features (e.g., ridge lines, valleys, streams, elevation) or manmade features (e.g., roads) that created an obvious boundary to delineate a unit area boundary. In some cases, we were unable to provide obvious boundaries, so unit boundaries were drawn to encompass PCEs on the basis of the best available information.

(3) We then drew critical habitat boundaries that captured the locations, soils, and slopes elucidated under (1) above while considering the boundaries identified in (2) above. Critical habitat designations were then described and mapped using Universal Transverse Mercator (UTM) North American Datum 83 (NAD 83) coordinates.

(4) Finally, when the resulting units were smaller than 124 acres, we increased the unit size to 124 acres by

using the average travel distance for the pollinators of *Astragalus holmgreniorum* and *A. ampullarioides*. We believe that this increase in unit size is essential to ensure sufficient pollinator populations for the reproduction of *A. holmgreniorum* and *A. ampullarioides*. Specifically, where necessary, units or subunits were enlarged to 124 acres by including habitat within a 400 m (1,312 ft) radius of the known plant locations within the unit. This step applied to *A. holmgreniorum* subunits 2b and 3 and *A. ampullarioides* units 1, 2, 3, and subunit 4 a. Unit 3 for *A. ampullarioides* is bordered by development on its western edge; therefore, we did not incorporate 400 m (1,312 ft) on the western edge of Unit 3.

The proposed critical habitat designation includes representatives of all known populations of *Astragalus holmgreniorum* and *A. ampullarioides*, and habitats that possess the physical and biological features essential to the conservation of the species and require special management considerations or protection. Application of these criteria: (1) Protects habitat that contain the PCEs in areas where *A. holmgreniorum* and *A. ampullarioides* are known to occur; (2) maintains the current ecological distribution to preserve genetic variation within the range of *A. holmgreniorum* and *A. ampullarioides* to minimize the effects of local extinction; (3) minimizes fragmentation by establishing contiguous occurrences and maintaining existing connectivity; (4) includes sufficient pollinator habitat; and (5) protects the seed bank to ensure long term persistence of the species.

Much of the survey and field data on which this proposed designation is based represents observed individuals during one point in time. Due to annual population fluctuations associated with varying local environmental factors (e.g., precipitation, seed germination), it is likely that individual plants and occurrences exist but were not identified in recent surveys (Van Buren and Harper 2003b; 66 FR 49560, September 28, 2001). Identification of these areas as critical habitat ensures maintenance of connectivity between currently known occupied habitats over the long term. Gene flow is also maintained by securing sufficient area for pollinator habitats and travel corridors.

These habitats also ensure protection of seed banks, seed dispersal, and pollinator services that are essential for long-term persistence of *Astragalus holmgreniorum* and *A. ampullarioides* (Dr. R. Van Buren, pers. comm. 2005; Dr. V. Tepedino, pers. comm. 2005).

These seeds represent genetic information of past parents and the retention of these seeds affects fitness and demography and reduces the expected inbreeding coefficient (McCue and Holtsford 1998). Seed banks also ensure population persistence in periods of drought or other stressful environmental conditions (Dr. R. Van Buren, pers. comm. 2005). The surrounding plant community provides the floral resources and habitat necessary to maintain pollinators and potential seed dispersers (e.g., birds, small mammals). Land within this unit supports the PCEs for the species that are necessary for the growth, reproduction, and establishment of *A. holmgreniorum* and *A. ampullarioides*.

When determining proposed critical habitat boundaries, we made an effort to avoid proposing the designation of developed areas such as buildings, paved areas, boat ramps and other structures that lack PCEs for *Astragalus holmgreniorum* and *A. ampullarioides*. Manmade features within the boundaries of the mapped unit, such as buildings, roads, parking lots, and other paved areas, do not contain any of the primary constituent elements for *A. holmgreniorum* or *A. ampullarioides*. However, the scale of maps prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed areas. Any such structures and the land under them inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text and are not designated as critical habitat. Therefore, Federal actions limited to these areas would not trigger section 7 consultations, unless they affect the species and/or primary constituent elements in adjacent critical habitat.

We anticipate that the boundaries of the mapped units may be refined based on additional information received during the public comment period. Areas that support newly discovered populations in the future, but are outside of the critical habitat designation, will continue to be subject to the applicable prohibitions of section 9 of the ESA, and regulatory protections afforded by the section 7(a)(2) jeopardy standard.

Special Management Considerations or Protections

When designating critical habitat, we assess whether the areas determined to be occupied at the time of listing and contain the primary constituent elements may require special management considerations or protections. Threats to the PCEs for

Astragalus holmgreniorum and *A. ampullarioides* include the direct and indirect effects of: Habitat loss and degradation from urban development; invasive plant species; recreational activities; cattle grazing; and fire management (66 FR 49560; September 28, 2001).

Loss and degradation of habitat from development was cited in the final listing rule as a primary cause for the decline of *Astragalus holmgreniorum* and *A. ampullarioides*. Most of the populations of these species occur within Washington County, UT. This county has had and continues to have increasing human population, land speculation, and development pressures. Some of the units being proposed are adjacent to major roads and urban development. Urban development can remove the plant community components and associated soils, soil formations, and hydrology as identified in the PCEs. This development can eliminate or fragment the populations of *A. holmgreniorum* and *A. ampullarioides*. Special management to protect the features essential to the conservation of these species from the effects of urban development includes creating managed plant preserves and open spaces, limiting disturbances to and within suitable habitats, and evaluating the need for and conducting restoration or revegetation of native plants in open spaces or plant preserves.

Proposed Federal land sales or trades need to be evaluated in terms of benefit or habitat loss to both plant species. The Record of Decision and Resource Management Plan for the St. George Field Office of BLM (1999) states "Generally, public lands supporting federally-listed or sensitive plant species will be retained in public ownership unless exchange or transfer will result in acquisition of better habitat for the same species or provide for suitable management by another qualified agency or organization." One proposed land sale contains approximately 588 ha (1,453 ac) of land managed by BLM UT and lies directly south of Santa Clara (Bob Douglas, BLM UT, pers. comm. 2004). This proposed sale includes part of the second population as identified in the listing rule for *Astragalus holmgreniorum* (66 FR 49560). If this land sale occurs, BLM UT has indicated that land with equal or better habitat would be acquired. One area being considered for acquisition by BLM UT is located west of I-15 and is included in the primary population as described in the listing rule (66 FR 49560). An evaluation must consider that the traded or sold lands will likely

be developed, resulting in a net loss of these plant species. Special management includes long-term conservation of the plants on lands that BLM currently holds or may hold in the future, with an emphasis on improving habitats and potentially increasing plant population numbers in these areas. Special management to protect the features essential to the conservation of these species include conservation measures and actions to minimize effects of grazing and recreation use and to control invasive plant species on these lands.

Some areas require special management due to the threats posed by invasive exotic plants. Invasive plant species may alter the vegetation composition or physical structure identified in the PCEs to an extent that the area does not support *Astragalus holmgreniorum* and *A. ampullarioides* or its associated vegetation. Invasive species, such as nonnative, wind-pollinated grasses, may compete for space and resources and diminish the native flora upon which pollinators forage. Special management to protect the features essential to the conservation of these species may include limiting disturbances to and within suitable habitats by taking measures to ensure that vehicles and/or pedestrians staying on designated routes. In some cases, disturbed areas may need to be evaluated for re-vegetation and restoration with native plant species.

Recreational activities such as hiking and off-highway vehicle use may impact the vegetation composition and soil structure to an extent that the area will no longer have intact soil surfaces and natural vegetative covering. Natural drainage and erosion patterns may be also be negatively altered. Special management that may be necessary to protect the features essential to the conservation of *Astragalus holmgreniorum* and *A. ampullarioides* from this threat includes deflection of recreational use away from and outside of habitat, fencing small populations, removing or limiting access routes, ensuring land use practices do not disturb the hydrologic regime, and avoiding activities that might concentrate water flows or sediments into plant-occupied habitat.

Some aspects of livestock grazing may preclude the full and natural development of *Astragalus holmgreniorum* and *A. ampullarioides*. Direct grazing is not a known threat for *A. holmgreniorum*, but is a primary threat for *A. ampullarioides* (66 FR 49560; September 28, 2001). Direct grazing may reduce the production and dispersal of seeds, alter the associated

vegetation needed for pollinator activity, or reduce the number and vigor of plants present by loss of inflorescences (flowering stalks) or leaves. Livestock grazing can lead to the trampling of individuals, which potentially has many of the same results. Livestock trampling can also result in soil disturbance, such as compaction or erosion. This impact can cause alterations of natural drainage and erosion patterns. Special management may be necessary to protect features essential to the conservation of *A. holmgreniorum* and *A. ampullarioides* from this threat, including fencing populations; avoiding activities, such as water trough placement, that might concentrate livestock near or in occupied habitat; and removing livestock from occupied lands during plant growing seasons, especially during periods of flowering and fruiting.

In a healthy system, both *Astragalus holmgreniorum* and *A. ampullarioides* are found in sparsely vegetated habitat that is not prone to fire. Neither species is believed to be fire-adapted. However, invasive grasses such as *Bromus rubens* (red brome) and *Bromus tectorum* (cheatgrass) are now invading these areas, creating dense, continuous fuels, and a potential threat to these endangered plant species. This phenomenon has resulted in fires within the habitats for these species, which has created the need to respond to wildfires. Major activities involved with fire and fire management are: Wildfire suppression, wildland fire use, prescribed burning, non-fire fuels treatments (mechanical and chemical), and emergency stabilization and rehabilitation following wildfires. Fire suppression methods may involve fireline construction, off-road travel, and use of fire suppression agents and retardants. Threats related to fire and fire-related activities include crushing and trampling of plants, damage to seedbank due to fire severity, fire suppression or treatment activities, soil erosion, and an increase of invasive plant species that may compete with native plant species. Special management that may be necessary to protect the features essential to the conservation of *Astragalus holmgreniorum* and *A. ampullarioides* from these threats include: development of adequate fire management buffers for these plant species and their habitat; control of invasive nonnative plant species; education of fire management staff on the location of the plants; and if post-fire restoration is planned, a careful evaluation to ensure that the native plant community is maintained.

No current management plans exist for *Astragalus holmgreniorum* or *A. ampullarioides*. Utah's SITLA, The Nature Conservancy, the Service, BLM UT, and UT Department of Transportation signed a Letter of Intent to identify, create, and maintain plant preserves for *A. holmgreniorum* on some portion of the occupied lands currently held by SITLA (2005). As the result of a formal section 7 consultation for the Southern Corridor Highway Project located in Washington County, UT, one site on SITLA lands, containing approximately 7 ha (17 ac), is in the process of being purchased as a plant preserve for *A. holmgreniorum*. To date, no other plant preserves have been established.

The BLM and National Park Service (NPS) are coordinating with us in development and implementation of a Recovery Plan for *A. holmgreniorum* and *A. ampullarioides*. BLM has drafted a Santa Clara River Reserve Recreation and Open Space Management Plan (ROMP) that includes a portion of proposed critical habitat for *A. holmgreniorum*. The intent of the ROMP is to reduce habitat impacts associated with currently unregulated recreational use. Specific plans relative to known plant locations are not identified in this document, so we do not consider the ROMP to currently provide adequate special management for plants at this location. Additionally, the Zion NP Fire Management Plan (2005) and Utah Statewide Land Use Plan Amendment

for the Proposed Fire and Fuels Management and Five Fire Management Plans (2005) considered some special management for *A. holmgreniorum* on BLM UT managed lands and for *A. ampullarioides* on Zion NP lands and BLM UT managed lands. However, these plans do not address other necessary special management independent of fire (e.g., recreational use).

Should areas proposed within critical habitat units have a finalized plan that provides for the conservation of *Astragalus holmgreniorum* or *A. ampullarioides* prior to our final determination, we will consider whether it provides special management and we may exclude these areas if we determine that no additional special management is required.

Proposed Critical Habitat Designation for Astragalus holmgreniorum

Critical habitat for *Astragalus holmgreniorum* is being proposed for known occupied sites and associated habitat. The maintenance of existing populations and their associated landscape is important to: Ensure population fitness and genetic variation; sufficient habitat for pollinators; an adequate seed bank; and geological extent (Karron 1989; Barrett and Kohn 1991; Ellstrand and Elam 1993; Heshel and Paige 1995; McCue and Holsford 1998; Steffan-Dewenter and Tscharntke 1999; Steffan-Dewenter 2003; Greenleaf 2005; Tepedino 2005). We also believe that the proposed designation is of

sufficient size to maintain landscape-scale processes and minimize the secondary impacts resulting from land use activities in adjacent areas. We have not included one site that contains *A. holmgreniorum* plants due in part to its small size and isolation; however, we are seeking public comment on this site to ensure the accuracy of our assessment (see "Occupied Area Not Included in Proposal" below).

We mapped the units with a degree of precision commensurate with the available information and the size of the unit. We anticipate that the boundaries of the mapped units may be refined based on additional information received during the public comment period.

The final listing rule (66 FR 49560; September 28, 2001) identified three known populations of *Astragalus holmgreniorum*. Our proposed critical habitat designation corresponds with the distribution of these populations. Proposed critical habitat Unit 1 represents the primary population, comprising three subunits located just north and south of the Utah-Arizona State border. Proposed critical habitat Unit 2 includes the second population, consisting of two subunits located south of the city of Santa Clara, UT. Proposed critical habitat Unit 3 represents the third population, consisting of a single unit located in UT. Table 1 identifies acreage of the proposed critical habitat units and subunits by land management authority.

TABLE 1.—PROPOSED CRITICAL HABITAT UNITS AND SUBUNITS FOR ASTRAGALUS HOLMGRENIORUM

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

Unit or Subunit	BLM AZ Federal	BLM UT Federal	AZ State Lands	UT State Lands	Private Lands	Totals
Occupied Acres (Hectares)						
Unit 1—Utah-Arizona Border:						
1a—State Line	362 (146)	1,766 (716)	935 (378)	754 (305)	210 (85)	4,027 (1,630)
1b—Gardner Well			564 (288)			564 (288)
1c—Central Valley				1,148 (466)		1,148 (466)
Unit 2—Santa Clara:						
2a—Stucki Spring		412 (168)				412 (168)
2b—South Hills		142 (57)			5 (2)	147 (59)
Unit 3—Purgatory Flat		120 (49)			57 (23)	177 (72)
Totals	362 (146)	2,440 (988)	1,499 (607)	1,902 (770)	272 (110)	6,475 (2,620)

We present brief descriptions and rationale for the proposed critical habitat units of *A. holmgreniorum*, as follows.

Unit 1: Utah-Arizona Border

This unit consists of approximately 2,324 ha (5,739 ac) divided into 3 subunits: State Line, Gardner Well, and

Central Valley. This unit contains PCEs and is important to the conservation of *Astragalus holmgreniorum* because it is one of only three populations of the plant and is the largest population of the species.

Subunit 1a: State Line

This subunit, known to be occupied at the time of listing, consists of 1,630 ha (4,027 ac), with 9 percent managed by BLM AZ, 44 percent managed by BLM UT, 23 percent managed by ASLD, 19 percent managed by SITLA, and 5 percent private land or land ownership

unknown. Subunit 1a is located east and west of I-15 as this highway crosses the State line of AZ and UT and is bounded by the Atkinville Wash and Virgin River to the north. Documents pertaining to occupancy, soil type, and land formations were evaluated to determine unit boundaries. Administrative lines were used for north-south boundaries on the west and east sides of the unit, while soil type, land features, and straight connecting lines were used for northern and southern boundaries of the unit.

Recent surveys on lands managed by SITLA (Van Buren 2004) and BLM UT (Dr. R. Van Buren, pers. comm. 2005), west and east of I-15 confirmed occupancy of *Astragalus holmgreniorum* individuals, and BLM AZ (L. Hughes, BLM AZ, pers. comm. 2005) verified *A. holmgreniorum* in several locations on BLM and ASLD lands. Suitable habitat conditions supporting the identified PCEs occur throughout the area. Land between sections 31, 32, and 8 contains known PCEs for *A. holmgreniorum*; however, information is incomplete on intervening occupancy. We are seeking additional information on the actual distribution of the species in this area.

Subunit 1a has features that are essential to the conservation of the species and it supports the highest number of individuals documented to date (Service, unpublished, 2006) within a continuous geographic area, fragmented only by I-15. *Astragalus holmgreniorum* also occupies land found between the northbound and southbound lanes of I-15. This intervening area within the highway right-of-way may allow pollinator flow between sites situated west and east of the highway (B. Douglas, BLM UT, pers. comm. 2005). As a large population, subunit 1a retains importance as a representation of the species potential range of genetic diversity. Species surveys documented a high number of seedlings and absence of reproductive adults (Van Buren 2004 and 2005), which indicates that this subunit supports a large seed bank. This information indicates a viable seed bank, the protection of which enhances the genetic diversity and boosts the likely persistence of this species (Van Buren 2003). Seed bank protection is necessary for long-term species persistence (McCue and Holtsford 1998).

Special management considerations may be required to control invasive plant species, to control habitat degradation due to activities that lead to erosion, and to maintain the identified associated vegetation, as well as

pollinator habitat essential to the conservation of the species. The BLM AZ and BLM UT do not currently have a management plan specific to *Astragalus holmgreniorum*; however, the agency is working in partnership with the Service on a recovery plan for this species. The BLM UT states that the timing of cattle grazing has been adjusted to avoid the flowering period for the species (B. Douglas, BLM UT, pers. comm. 2004). Additionally SITLA is signatory to a Letter of Intent which intends to place roughly 71 ha (175 ac) of land occupied by *A. holmgreniorum* into long-term conservation.

Subunit 1b—Gardner Well

Subunit 1b consists of 228 ha (564 ac), entirely managed by ASLD. This subunit is found in AZ, south of the AZ-UT State border, (2 miles) east of I-15. Reconnaissance maps dating to the early 1990s and herbarium information for *Astragalus holmgreniorum* indicate plant occupancy on ASLD lands. The acreage proposed within this subunit was further refined based on known plant locations, geologic maps, and occurrence of PCEs including soil types.

This subunit is determined to be critical habitat because it contains features essential to the conservation of *Astragalus holmgreniorum*, is occupied by the species, and represents the southeastern-most site in AZ within the primary population, as discussed in the final listing rule (66 FR 49560; September 28, 2001). Yearly monitoring indicates a relatively high density of *A. holmgreniorum* (Van Buren and Harper 2004a). In 2005, the Gardner Well monitoring site contained an estimated 150 plants, all seedlings (Van Buren, pers. comm. 2005). The abundance of seedlings indicates a persistent seed bank which is considered important for genetic diversity and local survivorship (McCue and Holtsford 1998; Van Buren 2003; Van Buren, pers. comm. 2005). This subunit also is historically significant because it includes the type locality (the location of the specimen from which the original species description was made) for the species.

Special management may be required to minimize disturbance to the surface structure within this subunit, to control invasive species, and to maintain the identified vegetation types, as well as pollinator habitat essential to the conservation of the species. Currently, no management plan has been developed for these lands.

Subunit 1c—Central Valley

Subunit 1c consists of 466 ha (1,148 ac), entirely managed by SITLA. This subunit is found north of the Arizona-

Utah State border, west of a geological feature called White Dome, and east of I-15. This subunit is determined to be critical habitat because it contains features essential to conservation of *Astragalus holmgreniorum*, it is occupied by the species, and contains a large, densely occupied portion of the primary population as described in the final listing rule (66 FR 49560; September 28, 2001). This subunit contains the second largest continuous land base for *A. holmgreniorum* and the second largest number of individuals counted to date (Van Buren 2003).

Approximately 99.8 percent of plants identified in the 2003 surveys were seedlings (Van Buren 2003). The high number of seedlings and near lack of reproductive adults indicates a historic seed bank (Van Buren and Harper 2004a). Protection of known seed banks is essential for long-term species survival. The retention of these seeds can have a dramatic effect on demography and reduce the expected inbreeding coefficient (McCue and Holtsford 1998). Seed banks also ensure population persistence in differing periods of environmental conditions (Facelli, Chesson, and Barnes 2005).

Plants within this subunit are threatened by urban development. Special management may be required to minimize disturbance to the surface and subsurface structure within this subunit and to maintain the identified soil and vegetation types. No management plan currently exists. A Letter of Intent signed by SITLA indicates a willingness to develop a management plan for this species on a limited portion of their property; however, SITLA plans to develop a master planned community in the area (SITLA et al. 2005).

Unit 2: Santa Clara Unit

Unit 2 comprises 227 ha (559 ac) divided into two subunits—Stucki Spring and Santa Clara. Unit 2 contains the PCEs, and is also important to conserving genetic diversity of the taxon because plants in this area contain a unique genetic marker not present in the other two populations (Stubben 1997). Therefore, the two subunits in the Santa Clara units are needed to conserve genetic variation held within the gene pool for this taxon (Dr. R. Van Buren, pers. comm. 2005). Additionally, it represents one of only three known populations of the species.

Subunit 2a: Stucki Spring

Subunit 2a consists of 168 ha (412 ac) managed by BLM UT. This unit is found west of Box Canyon, in an area before Box Canyon Wash narrows; and near Stucki Spring. *Astragalus*

holmgreniorum was known to occupy this subunit at the time of listing (66 FR 49560; September 28, 2001). In 2005 individuals were confirmed in a roadside visit (Dr. R. Van Buren, pers. comm. 2005).

This subunit is determined to be critical habitat because it contains features essential to conservation of *Astragalus holmgreniorum*, is occupied by the species, supports genetic diversity, and provides connectivity between Subunits 1a (State Line) and 1c (Central Valley) to the south and Subunit 2b (South Hills) to the north. The land within this unit supports the PCEs for the species that are necessary for the growth, reproduction, and establishment of *A. holmgreniorum*.

Special management may be required in this subunit to minimize habitat fragmentation, to minimize disturbance to the surface and subsurface structure due to recreation or other activities, and to maintain the identified soil and vegetation types. Plants within this subunit are currently threatened by unmanaged off-road vehicle (ORV) use. Additionally, the BLM is considering selling adjacent areas for urban development; we anticipate that the proximity of the development would result in indirect effect to *Astragalus holmgreniorum*. The BLM UT does not currently have a management plan specific to *A. holmgreniorum*, but is working in conjunction with us to develop a recovery plan for this species. The intent of the BLM Santa Clara River Reserve Recreation and Open Space Management Plan is to develop user-specific trails and areas of activities to reduce unregulated and potentially damaging uses on biological resources, including plants. However, specific details regarding facility locations, impacts, and conservation measures have not been identified.

Subunit 2b: South Hills

Subunit 2b consists of approximately 59 ha (147 ac), with 97 percent managed by BLM UT and 3 percent private lands (or land ownership unknown). This subunit was known to be occupied at the time of listing (66 FR 49560; September 28, 2001). A survey of the area in 2005 indicated a healthy number of plants in this subunit (Dr. R. Van Buren, pers. comm. 2005).

This subunit is determined to be critical habitat because it contains features essential to conservation of *Astragalus holmgreniorum*, is occupied by the species, it supports genetic diversity, and represents the northcentral-most occupied site of *A. holmgreniorum*. The land within this subunit supports the PCEs for the

species that are necessary for the growth, reproduction, and establishment of the *A. holmgreniorum*.

Special management may be required to minimize urban encroachment, maintain land in Federal ownership, reduce disturbance to the surface and subsurface structure, control invasive species, and maintain the identified vegetation types as well as pollinator habitat essential to the conservation of the species. Plants within this subunit are threatened by urban development, land trades, and recreation. Public land sales are authorized for eligible parcels under the Federal Land Transaction Facilitation Act of 2000 (J. Crisp, Field Office Supervisor, BLM UT, pers. comm. 2004). BLM is working with the city of Santa Clara and the local community to sell approximately 1,400 ac (567 ha) in the Santa Clara area. This proposed sale is believed to contain all *A. holmgreniorum* individuals in this subunit. The intent of the local community would be to develop the land for residential housing.

Unit 3: Purgatory Flat

Unit 3 consists of approximately 177 ac (72 ha) of land; 68 percent is managed by BLM UT, while 32 percent is under private ownership (or ownership is unknown). The final listing rule (66 FR 49561) indicated that there were 30 to 300 plants at this location. More recent site visits confirm the presence of plant individuals (H. Barnes, pers. comm. 2005 and Dr. R. Van Buren, pers. comm. 2005); however, a census was not conducted.

Purgatory Flat is determined to be critical habitat because it contains features essential to conservation of *Astragalus holmgreniorum*, is occupied by the species, and represents the northeastern-most occupied site and third known population. This unit is at the furthest distance from all other proposed critical habitat units. Distant populations are often the most active regions of speciation and may be important for protecting genetic diversity (Lesica and Allendorf 1995). The land within this unit supports the PCEs for the species that are necessary for the growth, reproduction, and establishment of the *A. holmgreniorum*.

Special management may be required to minimize disturbance to the surface structure within this subunit, control invasive species, and maintain the identified vegetation types as well as pollinator habitat essential to the conservation of the species.

Occupied Area Not Included in Proposal

Astragalus holmgreniorum is known to occur in the following area. We are not proposing this area for critical habitat designation, primarily because the best available information indicates that only a small number of plants occur on the site, which is small and distant from other populations. Thus, we could not determine that it is needed for the conservation of the species. However, we are requesting comments or additional information if it is available. In UT, near the border of Section 23 and 24 (T43S, R16W), several *A. holmgreniorum* seedlings were found in spring 2004. These individuals are separated by the Atkinville Wash (a natural watershed) from Unit 1a, and intervening land between this site and Unit 1a does not contain known PCEs. This site is separated by I-15 from Unit 1c. We lack information to determine that this site is important to the conservation of this species.

Proposed Critical Habitat Designation for *Astragalus ampullarioides*

In our delineation of the proposed critical habitat units, we selected areas to provide for the conservation of the five populations where *Astragalus ampullarioides* is currently known to occur. All sites are necessary because, as described earlier, *A. ampullarioides* has a limited geographical distribution, exhibits life history attributes (including dormancy during stress, soil endemism and geological restriction) that make it prone to threats. Dormancy potentially leads to the mistaken error that a population is extirpated (Epling and Lewis 1952), while soil endemism and geological restriction limit the area available to support its growth cycle. Like *A. holmgreniorum*, the maintenance of existing populations and their associated landscape is important for conservation of seed banks, pollinators, geologic extent and maintaining population fitness and genetic variation (Steffan-Dewenter and Tschardt 1999; Steffan-Dewenter 2003; Lande 2002; Greenleaf 2005; Tepedino 2005).

All plant populations experience fluctuations in size; however, small, geographically restricted populations, like those exhibited by *Astragalus ampullarioides*, are more likely to fluctuate to zero than large populations (Lienert 2004). Population fitness is often related to population size. Lienert (2004) conducted a literature review and concluded that smaller numbers of plant individuals are more likely to succumb to natural catastrophes or environmental

stochasticity, demographic stochasticity, and genetic drift. For these reasons, conservation of all known populations of *A. ampullarioides* is necessary to increase the species' overall survival and recovery.

We developed the proposed designation for *Astragalus ampullarioides* to be sufficient size to maintain landscape-scale processes and to minimize the secondary impacts resulting from land use activities in adjacent areas. The probability of long-term survival and recovery depends upon the protection of existing population sites and providing connectivity within and between

occupied sites and suitable sites for occupancy. Habitats included within these units and subunits act to maintain and facilitate pollinator activity, seed dispersal mechanisms, and intact ecosystems. We mapped the units with a degree of precision commensurate with the available information, the size of the unit, and the time allotted to complete this proposal. We anticipate that the boundaries of the mapped units may be refined based on additional information received during the public comment period.

The final listing rule (66 FR 49560; September 28, 2001) identified five known populations of *Astragalus*

ampullarioides. We are similarly proposing five units as critical habitat for the *A. ampullarioides*. Unit 4 in the area of Harrisburg Junction has two subunits; all other populations are represented by one unit each. The critical habitat areas described below constitute our best assessment at this time of areas determined to be occupied at the time of listing, to contain the PCEs, and that may require special management. Table 2 identifies acreage of the proposed critical habitat units and subunits by land management agency.

TABLE 2.—PROPOSED CRITICAL HABITAT UNITS AND SUBUNITS FOR *Astragalus ampullarioides*
[Area estimates reflect all land within proposed critical habitat unit boundaries]

Unit or subunit name	BLM—UT Federal	NPS Federal	Tribal lands—Shivwits band of Paiute Tribe	UT State Lands	Private lands	Totals
Occupied Acres (Hectares)						
Unit 1—Pahcoon Spring Wash	134 (54)	.....	.....	.....	.....	134 (54)
Unit 2—Shivwits .....	.....	.....	240 (97)	.....	.....	240 (97)
Unit 3—Coral Canyon	10 (4)	.....	.....	76 (31)	1 (.4)	87 (35)
Unit 4—Harrisburg Junction:						
4a—Harrisburg Bench & Cottonwood	260 (105)	.....	.....	.....	37 (15)	297 (120)
4b—Silver Reef	415 (168)	.....	.....	.....	47 (19)	462 (187)
Unit 5—Zion .....	.....	1,201 (486)	.....	.....	.....	1,201 (486)
Totals	819 (331)	1,201 (486)	240 (97)	76 (31)	85 (34)	2,421 (980)

We present brief descriptions and rationale for the proposed critical habitat units for *Astragalus ampullarioides* below.

Unit 1—Pahcoon Spring Wash

This unit includes 54 ha (134 ac), all on BLM UT lands adjacent to the Shivwits Indian Reservation. *Astragalus ampullarioides* was known to occupy this area at the time of listing. This population occurs in a small area where the density of *A. ampullarioides* is high (Van Buren and Harper 2004b). In 2005, this population was estimated to contain approximately 300 to 350 individuals (Van Buren, pers. comm. 2005). Unit 1 is determined to be critical habitat because it contains features essential to conservation of *A. holmgreniorum*, is occupied by the species, and represents the northwestern-most occurrence of *A. ampullarioides*. Resources within this unit support the identified PCEs associated with outcroppings of the Chinle Formation.

Special management may be required to minimize disturbance to the surface and subsurface structure within this unit, to control invasive species, and to

maintain the identified vegetation types as well as pollinator habitat essential to the conservation of the species. Cattle grazing activities are present within this unit. As previously discussed, the Chinle soils are soft and easily susceptible to erosion. A cost-share agreement between BLM UT and The Nature Conservancy (TNC) provides funding for signs and protective fencing; contracting for the fence is in process. As a part of the agreement, BLM UT and TNC will compare past plant survey data with population surveys to be completed in 2007 and 2009, to evaluate the effectiveness of the fence in eliminating habitat degradation.

Unit 2—Shivwits

At the time of the final listing rule (66 FR 49560; September 28, 2001), this population consisted of approximately 50 individuals. A recent count of individuals has not been conducted. A visit to the site after plants became dormant in 2005 indicated the presence of PCEs and evidence of several dormant plants (Heather Barnes, Service, pers. obs. 2005). All 97 ha (240 ac) occur on lands managed by the Shivwits Band of the Paiute Tribe. This

unit is included because it contains PCEs, is the type locality for the species, and is the site which provides the common name for this taxon. It has the lowest amount of human use of all the *Astragalus ampullarioides* sites, contains features essential to conservation of *A. ampullarioides*, is occupied by the species, and is one of five known populations.

Plants within this subunit are not known to be threatened by urban development or recreation. However, special management may be required to control domestic animals and invasive plant species, minimize disturbance to the surface and subsurface structure, and maintain the identified soil and vegetation types. The Shivwits Band of the Paiute Tribe has provided protective fencing for the dominant area of *Astragalus ampullarioides* occupancy that is adjacent to a utility corridor. The fencing provides protection from maintenance activities in this utility corridor and from activities associated with intermittent cattle grazing (G. Rogers, Shivwits Band of Paiutes, Band Chairman, pers. comm. 2005). However, the existing management (*i.e.*, protective fencing) does not address the threat to

this population from nonnative plants. Additionally, some individuals may exist in an area outside of this protective fence. A dirt road traverses a portion of this *A. ampullarioides* unit.

Unit 3—Coral Canyon

This unit, known to be occupied at the time of listing, is located adjacent to a golf course near Harrisburg Junction and is estimated to contain 100 individuals based on visitation in 2005 (Dr. R. Van Buren, pers. comm. 2005). Land ownership for all 87 acres (35 ha) is: 87 percent SITLA, 12 percent BLM UT lands, and 1 percent private lands. We have included occupied habitats and adjacent areas of suitable soils and vegetation to allow for maintenance of the seed bank, seed dispersal, and pollinator services.

This unit is determined to be critical habitat because it contains features essential to conservation of the taxon, is occupied by the taxon, is centrally located and may provide connectivity between populations, and contains a persistent occupied site of *Astragalus ampullarioides*.

Plants within this subunit face threats from urban development. Special management may be required to minimize disturbance to the surface and subsurface structure within this subunit, maintain the identified soil and vegetation types, and control invasive weeds.

Unit 4—Harrisburg Junction

In 2001, the final listing rule (66 FR 49560; September 28, 2001) referred to a population near Harrisburg Junction that contained four separate sites. Unit 4 is comprised of two subunits encompassing 307 ha (759 ac) that are spatially separated based on geography (Harrisburg Bench/Cottonwood and Silver Reef). Each of these subunits contains two of the plant occurrence sites that were known to be occupied at the time of the final listing rule (66 FR 49560; September 28, 2001). In 1999, the four sites contained approximately 300 plants (L. England, pers. comm. 1999; Utah Natural Heritage Program 1999; Van Buren, pers. comm. 2000).

In the area of Harrisburg Junction, milk-vetch populations or subpopulations are restricted to outcroppings of the Chinle soil. Each area may be relatively self-sustaining; however, the long-term persistence and stability of these areas arise from balancing site extinctions with the colonization of suitable unoccupied outcroppings through dispersal events (Hanski 1985; Olivieri *et al.* 1990; Hastings and Harrison 1994).

Subunit 4a—Harrisburg Bench and Cottonwood

The 120 ha (297 ac) in this subunit are 88 percent BLM lands and 12 percent private lands. Approximately 100 individual plants were located during 2005 surveys in this subunit (Dr. R. Van Buren, pers. comm. 2005). This subunit contains PCEs necessary to support *Astragalus ampullarioides* and its growth, reproduction, and establishment. Additionally, land found between the northbound and southbound lanes of Highway I-15 contains an occupied site. This intervening area within the highway right-of-way may allow pollinator flow between occupied sites (B. Douglas, BLM, pers. comm. 2005). Habitat areas between known occupied sites are included in the proposed critical habitat designation to support pollinators and seed dispersal between sites. Pollinator habitat and seed dispersal are considered important for the species' long-term survival (Steffan-Dewenter and Tschardt 1999; Steffan-Dewenter 2003; Greenleaf 2005; Van Buren and Harper 2003a).

This subunit is determined to be critical habitat because it contains features essential to conservation of *Astragalus ampullarioides*, is occupied by the species, and contains a persistent occupied site for *A. ampullarioides* that is centrally located and may provide connectivity between other units.

At the Harrisburg site, *B. tectorum* is a closely associated species (Van Buren 2005). The eastern part of this unit (east of I-15) burned during a wildfire in 2005; however, no suppression occurred in areas of occupied habitat. The status of seeds within the seed bank is unknown. Also, unknown, but likely, is that most of the aboveground stems and foliage died back at the time of the fire (Van Buren 2005).

Plants within this subunit may be threatened by urban development, recreation, and invasive plant species. Special management may be required to control invasive plant species, minimize disturbance to the surface and subsurface structure, and to maintain the identified soil and vegetation types. The BLM UT and TNC have entered into a cost-share agreement to provide signs and protective fencing to minimize human use at one area of occupancy within this subunit.

Subunit 4b: Silver Reef

The 462 ac (187 ha) in this subunit is composed of 90% BLM lands and 10% private lands. *Astragalus ampullarioides* individuals are found along intermittent outcroppings of the

Chinle Formation. Approximately 150 individuals were identified in a partial survey in 2005 (Dr. R. Van Buren, pers. comm. 2005). This subunit is determined to be critical habitat because it contains features essential to conservation of *A. ampullarioides*, is occupied by the species, contains a thriving population, and maintains a prevalence of soil substrate necessary for future expansion to maintain metapopulation dynamics.

Special management may be required to minimize recreational use and disturbance to the surface and subsurface structure within this subunit, control invasive plant species and domestic animals, and maintain the identified vegetation types as well as pollinator habitat essential to the conservation of the species. Quantitative information on impacts from cattle grazing and/or recreational use is unknown. One occupied area within this subunit is under a cost-share agreement for protective fencing, which is to begin in the near future. Post-monitoring will evaluate the effectiveness of the fences in eliminating habitat degradation from cattle and recreational use. Additional areas in this subunit remain unfenced, and special management may still be necessary in these areas to reduce impacts to habitat.

Unit 5—Zion

The 1,201 ac (486 ha) of Unit 5 occur entirely on lands managed by Zion NP. Population numbers were approximately 300 to 500 individuals in 2000 (66 FR 49560). More recent surveys document almost 1,300 individuals in the unit (J. Alexander, pers. comm. 2004; Zion NP, unpublished data, 2005).

This unit is determined to be critical habitat because it contains features essential to conservation of *A. holmgreniorum*, is occupied by the species, is one of five known populations, represents the northeastern-most range of the species, and contains the largest known population of *A. ampullarioides*. The land within this unit supports the PCEs for the species that are necessary for the growth, reproduction, and establishment of the *A. ampullarioides*.

Special management is necessary in this unit to minimize recreation disturbance to the surface structure and subsurface, to control invasive weedy species, and to maintain the identified vegetation types and pollinator habitat essential to the conservation of the species. Recreational use of the park and disturbance from park visitors and horses may present potential effects to

the milk-vetch. An established hiking and horse trail that is used infrequently from November through April occurs near populations of *A. ampullarioides*.

Plants and habitat within this unit are also threatened by noxious nonnative plants including *Moluccella laevis* (bells of Ireland), an introduced species not found at other sites. Although this unit is in a sparsely vegetated habitat that in the past did not carry fire, the invasions of exotic grasses are creating more continuous fuels. Although no management plan exists that is specific to *Astragalus ampullarioides* for Zion, the current Zion National Park Fire Management Plan includes restrictions on fire management within a 3/4-mi. buffer zone of the area where *A. ampullarioides* is found. Zion NP is also working with us to complete a recovery plan for this species, and is partnering with the USGS to investigate biotic soil conditions and invasive weed interactions for *A. ampullarioides*.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7 of the Act requires Federal agencies, including the Service, to ensure that actions they fund, authorize, or carry out are not likely to destroy or adversely modify critical habitat. In our regulations at 50 CFR 402.02, we define destruction or adverse modification as "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical." However, recent decisions by the 5th and 9th Circuit Court of Appeals have invalidated this definition (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)). Pursuant to current national policy and the statutory provisions of the Act, destruction or adverse modification is determined on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional to serve the intended conservation role for the species.

Section 7(a) of the Act requires Federal agencies, including the Service, to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is proposed or designated. Regulations implementing this interagency

cooperation provision of the Act are codified at 50 CFR part 402.

Section 7(a)(4) of the Act requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. This is a procedural requirement only. However, once a proposed species becomes listed, or proposed critical habitat is designated as final, the full prohibitions of section 7(a)(2) apply to any Federal action. The primary utility of the conference procedures is to maximize the opportunity for a Federal agency to adequately consider proposed species and critical habitat and avoid potential delays in implementing their proposed action as a result of the section 7(a)(2) compliance process, should those species be listed or the critical habitat designated.

Under conference procedures, the Service may provide advisory conservation recommendations to assist the agency in eliminating conflicts that may be caused by the proposed action. The Service may conduct either informal or formal conferences. Informal conferences are typically used if the proposed action is not likely to have any adverse effects to the proposed species or proposed critical habitat. Formal conferences are typically used when the Federal agency or the Service believes the proposed action is likely to cause adverse effects to proposed species or critical habitat, inclusive of those that may cause jeopardy or adverse modification.

The results of an informal conference are typically transmitted in a conference report; while the results of a formal conference are typically transmitted in a conference opinion. Conference opinions on proposed critical habitat are typically prepared according to 50 CFR 402.14, as if the proposed critical habitat were designated. We may adopt the conference opinion as the biological opinion when the critical habitat is designated, if no substantial new information or changes in the action alter the content of the opinion (see 50 CFR 402.10(d)). As noted above, any conservation recommendations in a conference report or opinion are strictly advisory.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical

habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this consultation, compliance with the requirements of section 7(a)(2) will be documented through the Service's 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 may affect, but are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to result in jeopardy to a listed species or the destruction or adverse modification of critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. "Reasonable and prudent alternatives" are defined at 50 CFR 402.02 as alternative actions identified during consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Director believes would avoid jeopardy to the listed species or destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

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

Federal activities that may affect *Astragalus holmgreniorum* and *A. ampullarioides* or their designated critical habitat will require section 7 consultation under the Act. Activities on State, tribal, local or private lands requiring a Federal permit (such as a permit from the Corps under section 404 of the Clean Water Act or a permit under section 10(a)(1)(B) of the Act from

the Service) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) will also be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local or private lands that are not federally funded, authorized, or permitted, do not require section 7 consultations.

Application of the Jeopardy and Adverse Modification Standards for Actions Involving Effects to Astragalus holmgreniorum and A. ampullarioides and Their Critical Habitat

Jeopardy Standard

Prior to and following designation of critical habitat, the Service has applied an analytical framework for *Astragalus holmgreniorum* and *A. ampullarioides* jeopardy analyses that relies heavily on the importance of core area populations to the survival and recovery of *Astragalus holmgreniorum* and *A. ampullarioides*. The section 7(a)(2) analysis is focused not only on these populations but also on the habitat conditions necessary to support them.

The jeopardy analysis usually expresses the survival and recovery needs of *Astragalus holmgreniorum* and *A. ampullarioides* in a qualitative fashion without making distinctions between what is necessary for survival and what is necessary for recovery. Generally, if a proposed Federal action is incompatible with the viability of the affected core area population(s), inclusive of associated habitat conditions, a jeopardy finding is considered to be warranted, because of the relationship of each core area population to the survival and recovery of the species as a whole.

Adverse Modification Standard

The analytical framework described in the Director's December 9, 2004, memorandum is used to complete section 7(a)(2) analyses for Federal actions affecting *Astragalus holmgreniorum* and *A. ampullarioides* critical habitat. The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional to serve the intended conservation role for the species. Generally, the conservation role of *Astragalus holmgreniorum* and *A. ampullarioides* 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 those activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation. Activities that may destroy or adversely modify critical habitat may also jeopardize the continued existence of the species.

Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to an extent that the conservation value of critical habitat for *Astragalus holmgreniorum* and *A. ampullarioides* is appreciably reduced. Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore result in consultation for *Astragalus holmgreniorum* and *A. ampullarioides* include, but are not limited to:

(1) Activities that have the potential to degrade or destroy *Astragalus holmgreniorum* and *A. ampullarioides* habitat (and its PCEs), including off-road vehicle use, heavy recreational use, residential or commercial development, road development, intensive livestock grazing, and herbicide use;

(2) Alteration of existing hydrology by redirection of sheet flow from areas adjacent to formation skirts or hillsides (e.g., clearing upslope from *Astragalus holmgreniorum* or *A. ampullarioides*);

(3) Compaction of the soil through the establishment of trails and roads;

(4) Activities that foster the introduction of nonnative vegetation, particularly noxious weeds, or create conditions that encourage the growth of nonnatives. These activities could include, but are not limited to supplemental feeding of livestock, ground disturbances associated with ORV use, road construction, utility corridors, seeding area with nonnatives, and other soil-disturbing activities;

(5) Activities that directly or indirectly result in increased erosion, decreased soil stability, and changes in vegetation communities (e.g., placing recreational off-road trailheads along critical habitat leading to congregation of recreational users in a sensitive location); and

(6) Sale or exchange of lands by a Federal agency to an entity that intends to develop them or implement activities that would degrade or destroy the PCEs.

Application of Section 3(5)(A) and 4(a)(3) and Exclusions Under Section 4(b)(2) of the ESA

We are not proposing or considering any non-inclusions under sections 3(5)(A) or 4(a)(3) of the Act. There are

no military areas associated with this proposed designation.

Section 4(b)(2) of the Act states that critical habitat shall be designated, and revised, 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 [s]he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless [s]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 Secretary is afforded broad discretion and the Congressional record is clear that in making a determination under the section the Secretary has discretion as to which factors and how much weight will be given to any factor.

Under section 4(b)(2), in considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, determine whether the benefits of exclusion outweigh the benefits of inclusion. If an exclusion is contemplated, then we must determine whether excluding the area would result in the extinction of the species. The Service is conducting an economic analysis of the impacts of the proposed critical habitat designation and related factors, which will be available for public review and comment. Based on public comment on that document, the proposed designation itself, and the information in the final economic analysis, areas may be excluded from critical habitat by the Secretary 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 242.19.

Pursuant to section 4(b)(2) of the ESA, we must consider relevant impacts in addition to economic ones. We determined that the lands within the proposed designation of critical habitat for *Astragalus holmgreniorum* and *A. ampullarioides* are not owned or managed by the Department of Defense. There are currently no habitat conservation plans that include *Astragalus holmgreniorum* and *A. ampullarioides*. Utah's SITLA, TNC, the Service, BLM UT, and Utah Department of Transportation have signed a letter of intent to identify, create, and maintain plant preserves for *A. holmgreniorum* on some of the lands currently held by

SITLA; however, at the time of this proposal, the preserves had not been established.

The proposed designation includes a site found on the Shivwits Band of the Paiute Tribal lands or trust resources that we have determined is important to the conservation of *A. ampullarioides*. By engaging in government-to-government relations with the Shivwits Band of the Paiute Tribe, we have learned of their willingness to have their site designated as critical habitat. We anticipate no impact to national security, tribal lands, partnerships, or habitat conservation plans from this proposed critical habitat designation. As such, we have considered but not proposed to exclude any lands from this designation based on the potential impacts to these factors.

Economic Analysis

An analysis of the economic impacts of proposing critical habitat for *Astragalus holmgreniorum* and *A. ampullarioides* is being prepared. We will announce the availability of the draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at <http://mountain-prairie.fws.gov/species/plants/milkvetche/index.htm>, or by contacting the Utah Fish and Wildlife Office directly (see **ADDRESSES**).

Peer Review

In accordance with our joint policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), and based on our implementation of the Office of Management and Budget's Final Information Quality Bulletin for Peer Review, dated December 16, 2004, we will be seeking independent reviews from five peer reviewers of the science in this rule. At least three of the reviewers will be nominated by interests outside of the Service with particular emphasis on recommendations provided by local, State, or Tribal governments. The purpose of such review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We will send these peer reviewers copies of this proposed rule immediately following publication in the **Federal Register**. We will invite these peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposed designation of critical habitat.

We will consider all comments and information received during the

comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

Public Hearings

The ESA provides for one or more public hearings on this proposal, if requested. Requests for public hearings must be made in writing at least 15 days prior to the close of the public comment period. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings in the **Federal Register** and local newspapers at least 15 days prior to the first hearing.

Clarity of the Rule

Executive Order 12866 requires each agency to write regulations and notices that are easy to understand. We invite your comments on how to make this proposed rule easier to understand, including answers to questions such as the following: (1) Are the requirements in the proposed rule clearly stated? (2) Does the proposed rule contain technical jargon that interferes with the clarity? (3) Does the format of the proposed rule (grouping and order of the sections, use of headings, paragraphing, and so forth) aid or reduce its clarity? (4) Is the description of the notice in **SUPPLEMENTARY INFORMATION** of the preamble helpful in understanding the proposed rule? (5) What else could we do to make this proposed rule easier to understand?

Send a copy of any comments on how we could make this proposed rule easier to understand to Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW., Washington, DC 20240. You may e-mail your comments to this address: Exsec@ios.doi.gov.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, this document is a significant rule in that it may raise novel legal and policy issues, but it is not anticipated to have an annual effect on the economy of \$100 million or more or affect the economy in a material way. Due to the tight timeline for publication in the **Federal Register**, the Office of Management and Budget (OMB) has not formally reviewed this rule. We are preparing a draft economic analysis of this proposed action, which will be available for public comment, to determine the economic consequences of designating the specific area as critical habitat. This economic analysis

also will be used to determine compliance with Executive Order 12866, Regulatory Flexibility Act, Small Business Regulatory Enforcement Fairness Act, and Executive Order 12630.

Within these areas, the types of Federal actions or authorized activities that we have identified as potential concerns are listed above in the "Adverse Modification Standard" section. The availability of the draft economic analysis will be announced in the **Federal Register** and in local newspapers so that it is available for public review and comments. When it is completed, the draft economic analysis can be obtained from the Web site at <http://mountain-prairie.fws.gov/species/plants/milkvetche/index.htm> or by contacting the Utah Fish and Wildlife Office directly (see **ADDRESSES**).

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

Under the Regulatory Flexibility Act (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act (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 effects 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 the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the Regulatory Flexibility Act (RFA) to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

At this time, the Service lacks the available economic information necessary to provide an adequate factual basis for the required RFA finding. Therefore, the RFA finding is deferred until completion of the draft economic analysis prepared pursuant to section 4(b)(2) of the ESA and E.O. 12866. This draft economic analysis will provide the required factual basis for the RFA finding. Upon completion of the draft economic analysis, the Service will publish a notice of availability of the draft economic analysis of the proposed designation and reopen the public comment period for the proposed designation for an additional 60 days. The Service will include with the notice of availability, as appropriate, an initial regulatory flexibility analysis or a

certification that the rule will not have a significant economic impact on a substantial number of small entities accompanied by the factual basis for that determination. The Service has concluded that deferring the RFA finding until completion of the draft economic analysis is necessary to meet the purposes and requirements of the RFA. Deferring the RFA finding in this manner will ensure that the Service makes a sufficiently informed determination based on adequate economic information and provides the necessary opportunity for public comment.

Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211 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. This proposed rule to designate critical habitat for *Astragalus holmgreniourum* and *A. ampullarioides* is not a significant regulatory action under Executive Order 12866, and it 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.

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

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501), the Service makes 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, tribal governments, or the private sector and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal

Government's responsibility to provide funding," and the State, local, or tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were Medicaid; 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 ESA, 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 on to State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments because the majority of lands proposed in this rule are managed by Federal and State agencies. As such, Small Government Agency Plan is not required. We will, however, further evaluate this issue as we conduct our economic analysis and revise this assessment if appropriate.

Federalism

In accordance with Executive Order 13132, the rule does not have significant federalism effects. A federalism assessment is not required. In keeping with DOI and Department of Commerce policy, we requested information from, and coordinated development of, this proposed critical habitat designation with appropriate State resource agencies in the State of Utah and Arizona. The designation of critical habitat in areas

currently occupied by *Astragalus holmgreniourum* and *A. ampullarioides* imposes no additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas that contain the 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 Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the ESA. This proposed 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 the *Astragalus holmgreniourum* and *A. ampullarioides*.

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

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

National Environmental Policy Act

It is our position that, outside the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA in connection with designating critical habitat under the ESA of 1973, as amended. 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 in the courts of the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. Ore. 1995), cert. denied 116 S. Ct. 698 (1996)). However, when the range of the species

includes States within the Tenth Circuit, such as that of *Astragalus holmgreniorum* and *A. ampullarioides*, pursuant to the Tenth Circuit ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we will undertake NEPA analysis for critical habitat designation and notify the public of the availability of the draft environmental assessment for this proposal when it is finished.

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 DOI's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. A population of *Astragalus*

ampullarioides is found on the tribal lands of the Shivwits Band of Paiutes. Our current understanding is that the Shivwits Band of Paiutes is amenable to the proposed designation of critical habitat on lands under their management for this species (H. Barnes, Botanist, FWS and G. Rogers, Chairman, Shivwits Band of Paiutes, pers. comm. 2005). These lands are included in this proposal as they contain features essential for the conservation.

References Cited

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

Author(s)

The primary author of this package is the Utah Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and

recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

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

PART 17—[AMENDED]

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

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

2. In § 17.12(h), revise the entries for "*Astragalus ampullarioides*" and "*Astragalus holmgreniorum*" under "FLOWERING PLANTS" in the List of Threatened and Endangered Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *
(h) * * *

Species		Common name	Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name								
FLOWERING PLANTS								
* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *
<i>Astragalus ampullarioides</i>		Shivwits milk-vetch.	U.S.A. (UT).	Fabaceae	E	711	17.96(a)	NA
* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *
<i>Astragalus holmgreniorum</i>		Holmgren milk-vetch.	U.S.A. (UT, AZ).	Fabaceae	E	711	17.96(a)	NA
* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *	* * *

3. Amend § 17.96(a), by adding entries for *Astragalus ampullarioides* (Shivwits milk-vetch) and *Astragalus holmgreniorum* (Holmgren milk-vetch) in alphabetical order under family Fabaceae to read as follows:

§ 17.96 Critical habitat—plants.

(a) *Flowering plants.*

* * * * *

Family Fabaceae: *Astragalus ampullarioides* (Shivwits milk-vetch)

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

(2) Within these areas, the primary constituent elements of critical habitat for *Astragalus ampullarioides* are:

(i) Outcroppings of soft clay soil, which is often purplish red, within the Chinle Formation, at elevations from 920 to 1,330 meters (3,018 to 4,367 feet);

(ii) Topographic features/relief, including alluvial fans and fan terraces, and gently rolling to steep swales that are often markedly dissected by water flow pathways from seasonal precipitation with little to moderate slope (3 to 24 percent); and

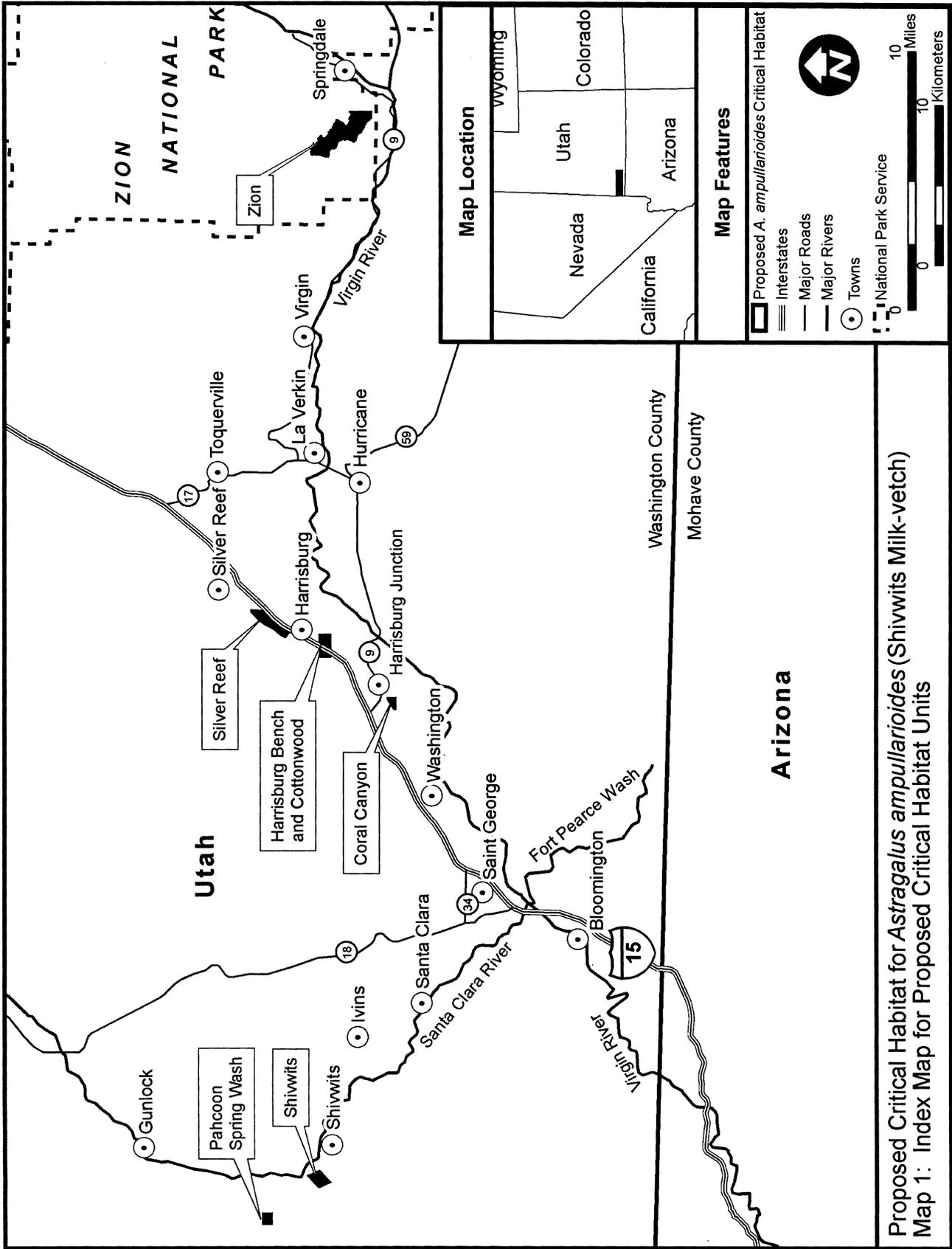
(iii) The presence of insect visitors or pollinators, such as *Anthophora captognatha*, *A. damnersi*, *A. porterae*, other *Anthophora species*, *Eucera quadricincta*, *Bombus morrissonis*, *Hoplitis grinnelli*, *Osmia clarescens*, *O. marginata*, *O. titus*, *O. clarescens*, and two types of *Dialictus* species.

(3) Critical habitat does not include manmade structures existing on the effective date of this rule and not containing one or more of the primary constituent elements, such as buildings, aqueducts, airports, and roads, and the land on which such structures are located.

(4) Data layers defining map units were an electronic base map of USGS 7.5' quadrangles projected to the Universal Transverse Mercator (UTM) coordinate system, Zone 12 NAD 83. Ancillary data used to help refine the unit boundaries included Digital Orthophoto Quadrangles (DOQs); National Agricultural Imagery Program (NAIP); cadastral land survey (Township, Range, and Section); soils data; and the 1:24,000 Utah water courses data set. Critical habitat units were delineated through heads-up digitizing in a Geographic Information System.

(5) **Note:** Index map (Map 1) follows.

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Proposed Critical Habitat for *Astragalus ampullarioides* (Shiwits Milk-vetch)
 Map 1: Index Map for Proposed Critical Habitat Units

(6) Units 1 and 2—Pahcoon Spring Wash and Shivwits, Washington County, Utah.

(i) Unit 1: Pahcoon Spring. Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

250963, 4122043; 250963, 4122040;
250559, 4122052; 250165, 4122063;
250165, 4122075; 250165, 4122352;

250165, 4122466; 250165, 4122731;
250176, 4122731; 250580, 4122731;
250965, 4122731; 250965, 4122442;
250965, 4122331; 250965, 4122107;
250963, 4122047; 250963, 4122043.

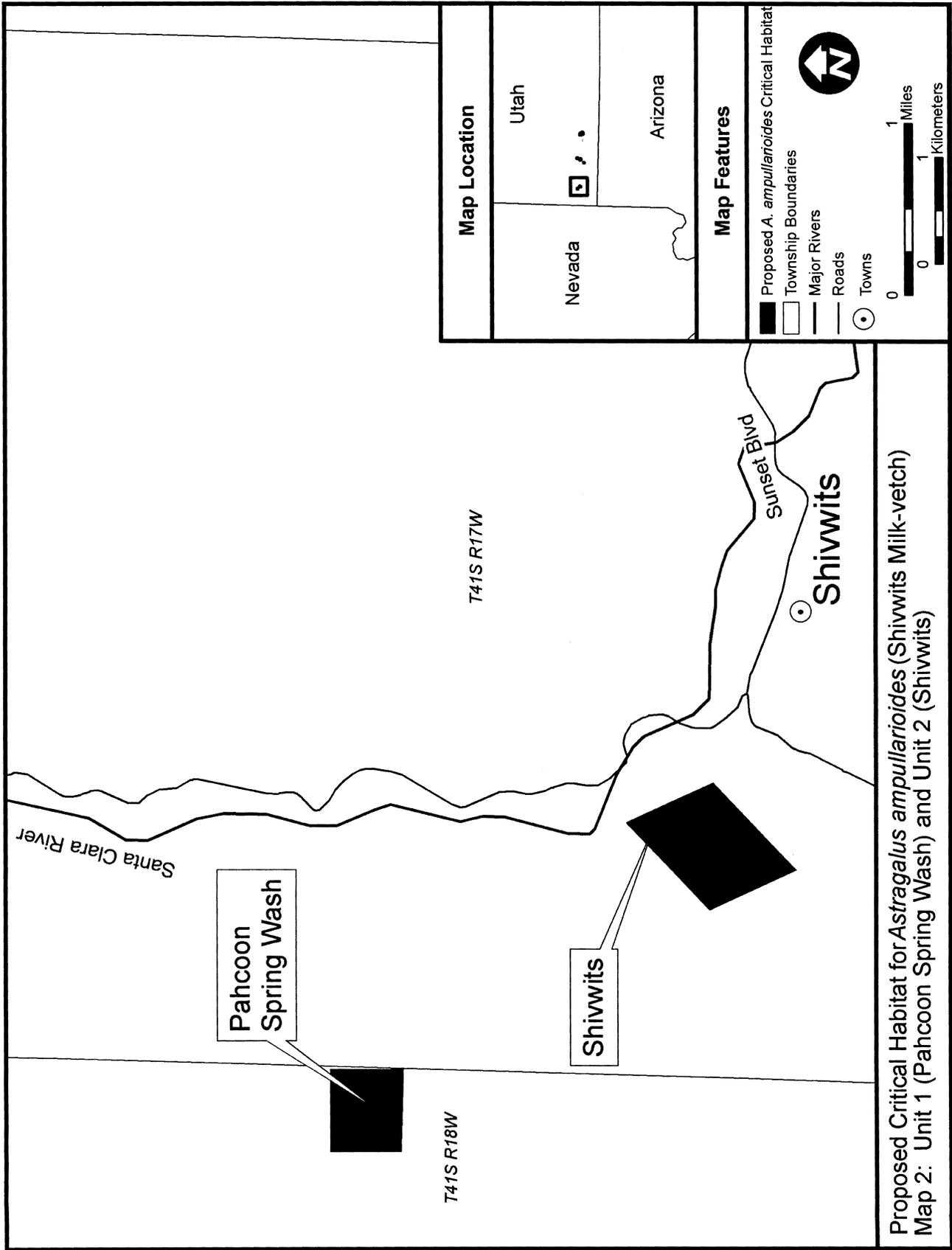
(ii) Unit 2: Shivwits. Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

253287, 4119960; 253476, 4119551;
253666, 4119143; 253666, 4119143;

253252, 4118753; 253252, 4118753;
253252, 4118753; 252838, 4118362;
252838, 4118362; 252838, 4118362;
252648, 4118771; 252459, 4119179;
252459, 4119179; 252873, 4119570;
252873, 4119570; 252873, 4119570;
253287, 4119960; 253287, 4119960.

(iii) **Note:** Map of Units 1 and 2 (Map 2) follows:

BILLING CODE 4310-55-P



(7) Units 3 and 4—Coral Canyon and Harrisburg Junction, Washington County, Utah. Unit 4, Harrisburg Junction, is divided into two subunits: Harrisburg Bench and Cottonwood, and Silver Reef.

(i) Unit 3: Coral Canyon. Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

283348, 4114931; 283341, 4114729;
283341, 4114729; 283335, 4114525;
283335, 4114523; 283334, 4114481;
283329, 4114332; 283328, 4114322;
283139, 4114327; 283138, 4114327;
283129, 4114327; 282929, 4114333;
282929, 4114331; 282529, 4114339;
282533, 4114481; 282539, 4114493;
282547, 4114508; 282551, 4114511;
282560, 4114522; 282589, 4114545;
282595, 4114551; 282611, 4114559;
282622, 4114567; 282630, 4114573;
282640, 4114580; 282649, 4114587;
282658, 4114593; 282665, 4114594;
282674, 4114599; 282679, 4114605;
282680, 4114612; 282680, 4114617;
282680, 4114622; 282683, 4114624;
282700, 4114627; 282712, 4114631;
282724, 4114639; 282732, 4114646;
282743, 4114651; 282754, 4114659;
282764, 4114668; 282768, 4114679;
282776, 4114689; 282786, 4114697;
282797, 4114705; 282801, 4114711;
282805, 4114717; 282805, 4114717;
282808, 4114726; 282812, 4114736;
282814, 4114750; 282822, 4114760;
282828, 4114767; 282837, 4114767;
282846, 4114767; 282856, 4114763;
282862, 4114753; 282867, 4114741;
282877, 4114737; 282895, 4114740;
282905, 4114747; 282914, 4114759;
282921, 4114771; 282931, 4114782;
282932, 4114789; 282936, 4114796;
282943, 4114800; 282943, 4114800;
282951, 4114800; 282959, 4114796;
282961, 4114796; 282967, 4114797;
282972, 4114803; 282975, 4114812;
282984, 4114820; 282992, 4114825;
282996, 4114827; 283013, 4114831;
283027, 4114839; 283030, 4114841;
283043, 4114849; 283060, 4114856;
283075, 4114862; 283082, 4114868;
283086, 4114880; 283090, 4114890;

283092, 4114901; 283097, 4114907;
283106, 4114918; 283115, 4114923;
283135, 4114927; 283154, 4114928;
283161, 4114922; 283179, 4114931;
283185, 4114936; 283186, 4114936;
283186, 4114936; 283348, 4114933;
283348, 4114931.

(ii) Unit 4a: Harrisburg Bench and Cottonwood. Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

285767, 4118407; 285767, 4118468;
285767, 4118584; 285767, 4118777;
285767, 4118911; 285767, 4119177;
285833, 4119177; 286237, 4119177;
286419, 4119177; 286641, 4119177;
287098, 4119177; 287267, 4119177;
287267, 4118771; 287267, 4118377;
287074, 4118377; 286948, 4118377;
286948, 4118377; 286556, 4118377;
286150, 4118377; 285767, 4118377;
285767, 4118407.

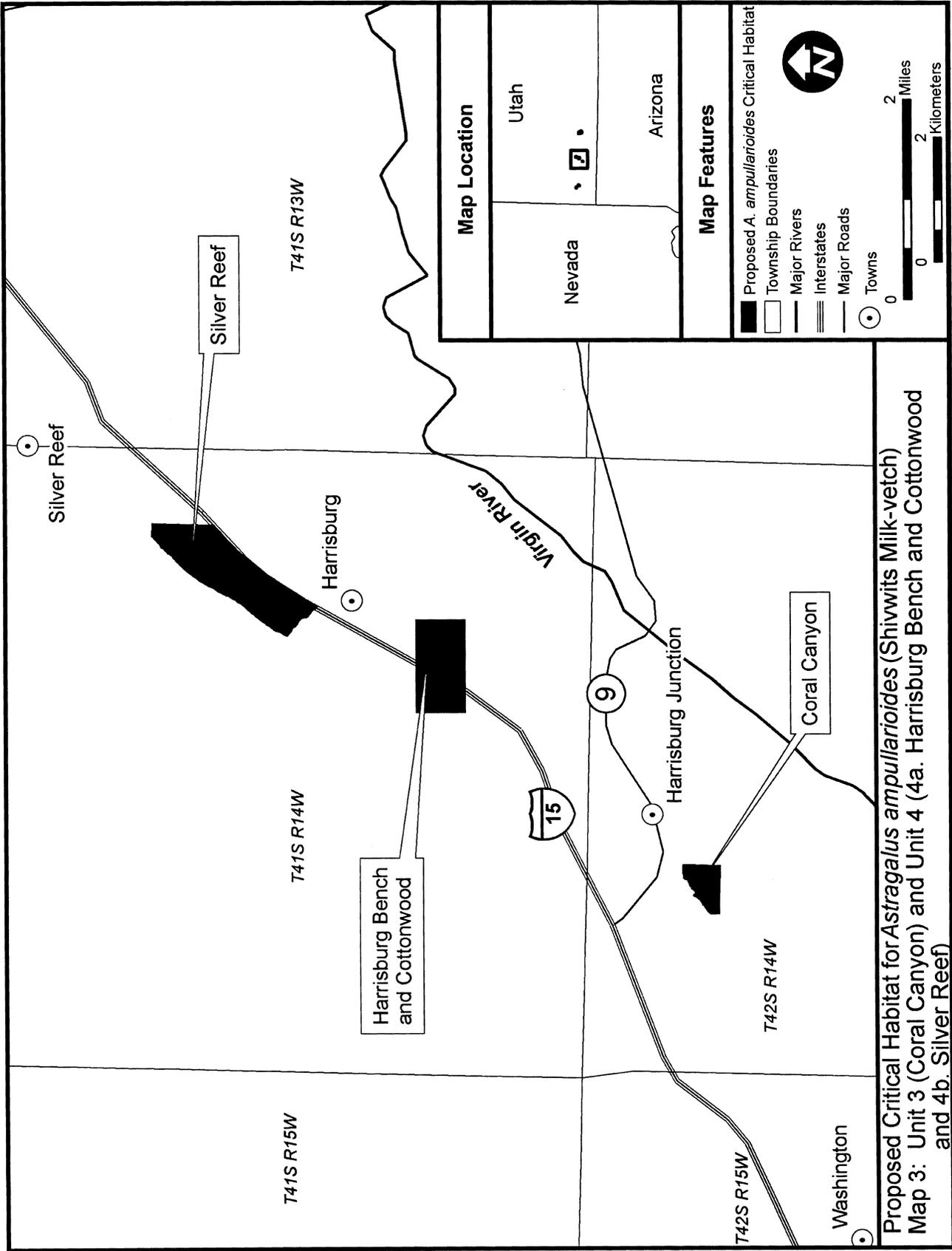
(iii) Unit 4b: Silver Reef. Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

287073, 4121370; 287074, 4121376;
287074, 4121402; 287085, 4121418;
287093, 4121441; 287126, 4121474;
287152, 4121505; 287171, 4121542;
287187, 4121566; 287209, 4121591;
287226, 4121621; 287251, 4121651;
287273, 4121682; 287299, 4121713;
287324, 4121742; 287349, 4121773;
287375, 4121800; 287406, 4121836;
287448, 4121887; 287480, 4121919;
287514, 4121962; 287526, 4121985;
287552, 4122029; 287550, 4122030;
287560, 4122040; 287572, 4122052;
287587, 4122079; 287600, 4122106;
287618, 4122133; 287637, 4122165;
287643, 4122195; 287660, 4122216;
287676, 4122260; 287696, 4122297;
287711, 4122329; 287729, 4122354;
287752, 4122375; 287771, 4122405;
287782, 4122433; 287799, 4122474;
287840, 4122544; 287862, 4122588;
287886, 4122629; 287902, 4122644;
287918, 4122663; 287930, 4122682;
287942, 4122698; 287952, 4122710;
287962, 4122727; 287983, 4122757;
288026, 4122808; 288046, 4122837;
288063, 4122855; 288091, 4122887;

288115, 4122916; 288144, 4122939;
288169, 4122966; 288196, 4122989;
288225, 4123018; 288245, 4123040;
288270, 4123059; 288294, 4123079;
288311, 4123104; 288320, 4123126;
288337, 4123142; 288352, 4123154;
288369, 4123171; 288382, 4123179;
288395, 4123199; 288409, 4123223;
288428, 4123238; 288452, 4123249;
288461, 4123256; 288462, 4123255;
288480, 4123271; 288489, 4123286;
288500, 4123293; 288506, 4123303;
288521, 4123312; 288538, 4123330;
288562, 4123347; 288579, 4123361;
288589, 4123375; 288601, 4123392;
288815, 4123379; 288802, 4122943;
288787, 4122380; 288763, 4122359;
288718, 4122320; 288681, 4122286;
288661, 4122267; 288596, 4122213;
288536, 4122161; 288525, 4122149;
288449, 4122071; 288403, 4122026;
288368, 4121997; 288368, 4121992;
288367, 4121992; 288333, 4121955;
288302, 4121916; 288278, 4121891;
288268, 4121875; 288227, 4121827;
288198, 4121792; 288167, 4121757;
288139, 4121723; 288120, 4121697;
288089, 4121658; 288065, 4121628;
288012, 4121559; 287980, 4121512;
287955, 4121466; 287927, 4121426;
287875, 4121352; 287875, 4121352;
287747, 4121144; 287668, 4121023;
287557, 4120848; 287483, 4120730;
287443, 4120762; 287421, 4120790;
287397, 4120822; 287376, 4120836;
287353, 4120857; 287329, 4120875;
287309, 4120895; 287292, 4120917;
287290, 4120944; 287289, 4120970;
287281, 4120992; 287269, 4121010;
287246, 4121028; 287220, 4121039;
287195, 4121055; 287175, 4121069;
287157, 4121078; 287142, 4121100;
287135, 4121122; 287121, 4121134;
287086, 4121149; 287069, 4121153;
287050, 4121175; 287018, 4121205;
286995, 4121229; 287002, 4121239;
287012, 4121264; 287023, 4121292;
287038, 4121310; 287050, 4121326;
287058, 4121342; 287068, 4121359;
287073, 4121370.

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

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(10) Unit 5—Zion, Washington County, Utah.

(i) Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

317424, 4119663; 317442, 4119650;
317463, 4119652; 317502, 4119660;
317526, 4119660; 317568, 4119660;
317617, 4119660; 317626, 4119660;
317657, 4119660; 317685, 4119660;
317722, 4119650; 317756, 4119634;
317780, 4119629; 317798, 4119616;
317821, 4119592; 317829, 4119566;
317811, 4119556; 317793, 4119548;
317787, 4119530; 317800, 4119519;
317832, 4119519; 317863, 4119511;
317884, 4119503; 317916, 4119503;
317939, 4119503; 317963, 4119509;
317984, 4119506; 317986, 4119485;
317963, 4119477; 317942, 4119464;
317926, 4119451; 317900, 4119443;
317874, 4119430; 317855, 4119412;
317848, 4119404; 317816, 4119383;
317790, 4119362; 317790, 4119341;
317866, 4119330; 317932, 4119325;
317978, 4119300; 318003, 4119280;
318018, 4119262; 318039, 4119239;
318064, 4119219; 318115, 4119208;
318141, 4119225; 318163, 4119236;
318191, 4119236; 318215, 4119236;
318250, 4119218; 318274, 4119194;
318296, 4119173; 318331, 4119144;
318362, 4119105; 318388, 4119083;
318416, 4119051; 318416, 4119050;
318437, 4119003; 318431, 4118998;
318414, 4118984; 318413, 4118983;
318402, 4118958; 318404, 4118939;
318401, 4118929; 318359, 4118934;
318323, 4118938; 318305, 4118929;
318295, 4118913; 318300, 4118893;
318302, 4118873; 318297, 4118860;
318288, 4118839; 318285, 4118813;
318292, 4118782; 318302, 4118763;
318326, 4118737; 318342, 4118709;
318363, 4118699; 318382, 4118681;
318408, 4118659; 318413, 4118655;
318439, 4118628; 318454, 4118612;
318457, 4118595; 318458, 4118591;
318466, 4118577; 318482, 4118572;
318511, 4118557; 318541, 4118553;
318574, 4118567; 318592, 4118592;
318595, 4118595; 318600, 4118600;
318615, 4118596; 318624, 4118591;
318633, 4118586; 318648, 4118584;
318652, 4118555; 318659, 4118531;
318671, 4118513; 318700, 4118493;
318724, 4118482; 318745, 4118494;
318759, 4118489; 318781, 4118486;
318785, 4118472; 318787, 4118444;
318788, 4118415; 318799, 4118396;
318805, 4118391; 318816, 4118384;
318830, 4118385; 318840, 4118359;
318852, 4118337; 318873, 4118323;
318884, 4118333; 318891, 4118344;
318899, 4118347; 318911, 4118337;
318929, 4118337; 318942, 4118333;
318960, 4118311; 318989, 4118302;
319024, 4118281; 319086, 4118247;

319114, 4118236; 319136, 4118223;
319168, 4118205; 319185, 4118207;
319203, 4118186; 319211, 4118178;
319233, 4118150; 319254, 4118143;
319275, 4118143; 319301, 4118129;
319320, 4118117; 319346, 4118108;
319365, 4118107; 319367, 4118093;
319380, 4118086; 319398, 4118089;
319406, 4118094; 319422, 4118093;
319441, 4118089; 319448, 4118084;
319441, 4118072; 319427, 4118055;
319424, 4118022; 319406, 4117985;
319399, 4117972; 319406, 4117963;
319412, 4117953; 319403, 4117944;
319398, 4117932; 319386, 4117914;
319377, 4117904; 319363, 4117889;
319354, 4117875; 319330, 4117859;
319322, 4117849; 319325, 4117831;
319313, 4117821; 319306, 4117804;
319297, 4117797; 319296, 4117786;
319287, 4117767; 319271, 4117740;
319266, 4117717; 319261, 4117708;
319242, 4117696; 319228, 4117677;
319230, 4117638; 319226, 4117613;
319191, 4117588; 319183, 4117582;
319136, 4117546; 319097, 4117525;
319077, 4117508; 319064, 4117496;
319046, 4117478; 319034, 4117459;
319032, 4117444; 319048, 4117432;
319064, 4117426; 319074, 4117414;
319083, 4117393; 319098, 4117380;
319111, 4117373; 319124, 4117366;
319140, 4117355; 319154, 4117338;
319169, 4117324; 319186, 4117322;
319192, 4117321; 319214, 4117321;
319235, 4117303; 319266, 4117283;
319311, 4117267; 319325, 4117267;
319349, 4117286; 319373, 4117310;
319403, 4117310; 319420, 4117305;
319444, 4117305; 319467, 4117312;
319488, 4117302; 319503, 4117290;
319528, 4117277; 319548, 4117272;
319559, 4117253; 319579, 4117241;
319588, 4117236; 319602, 4117219;
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319744, 4117170; 319768, 4117167;
319779, 4117186; 319784, 4117212;
319792, 4117231; 319799, 4117239;
319803, 4117250; 319801, 4117269;
319811, 4117291; 319825, 4117295;
319853, 4117284; 319884, 4117276;
319924, 4117271; 319932, 4117194;
319932, 4115820; 319477, 4115828;
319472, 4115839; 319456, 4115857;
319430, 4115867; 319420, 4115875;
319400, 4115900; 319389, 4115914;
319375, 4115927; 319364, 4115937;
319335, 4115955; 319304, 4115970;
319283, 4116007; 319277, 4116039;
319270, 4116053; 319244, 4116059;
319204, 4116078; 319199, 4116088;
319196, 4116102; 319206, 4116133;
319200, 4116153; 319192, 4116158;
319161, 4116165; 319160, 4116165;
319145, 4116168; 319102, 4116170;
319070, 4116193; 319043, 4116229;
319038, 4116241; 319012, 4116257;

318992, 4116260; 318972, 4116264;
318946, 4116267; 318926, 4116269;
318899, 4116278; 318885, 4116285;
318864, 4116300; 318853, 4116320;
318825, 4116334; 318803, 4116335;
318781, 4116339; 318771, 4116349;
318763, 4116357; 318741, 4116381;
318714, 4116402; 318691, 4116415;
318681, 4116421; 318648, 4116428;
318630, 4116430; 318605, 4116436;
318580, 4116447; 318557, 4116468;
318533, 4116502; 318515, 4116537;
318502, 4116567; 318493, 4116581;
318484, 4116598; 318472, 4116625;
318459, 4116654; 318425, 4116681;
318411, 4116690; 318389, 4116707;
318369, 4116721; 318367, 4116722;
318349, 4116737; 318336, 4116749;
318324, 4116751; 318305, 4116753;
318276, 4116753; 318243, 4116758;
318203, 4116764; 318171, 4116769;
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317971, 4116896; 317947, 4116937;
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317934, 4116995; 317940, 4117008;
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318110, 4117394; 318109, 4117408;
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318078, 4117577; 318081, 4117600;
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317990, 4117882; 317988, 4117886;
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317862, 4117956; 317853, 4117959;
317836, 4117964; 317819, 4117970;
317803, 4117976; 317785, 4117984;
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317729, 4117997; 317713, 4118000;
317698, 4118003; 317689, 4118005;
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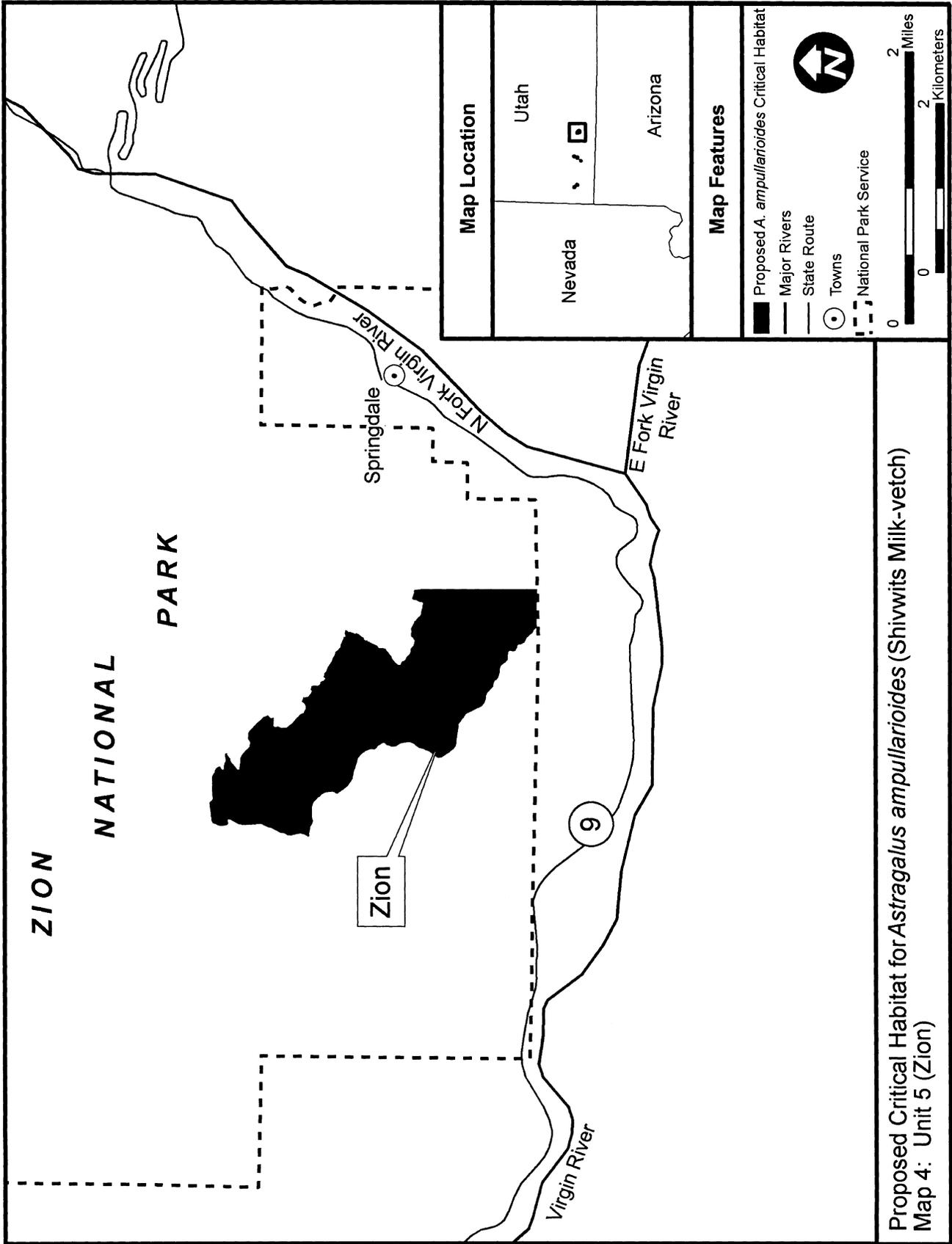
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317573, 4118089; 317568, 4118095;
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317545, 4118127; 317538, 4118138;
317534, 4118144; 317527, 4118154;
317522, 4118160; 317513, 4118170;
317505, 4118184; 317507, 4118198;
317509, 4118201; 317513, 4118207;
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317524, 4118272; 317524, 4118278;
317523, 4118286; 317521, 4118297;
317520, 4118307; 317518, 4118315;
317516, 4118328; 317513, 4118336;
317508, 4118347; 317505, 4118353;
317497, 4118365; 317489, 4118374;
317481, 4118385; 317473, 4118393;
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317448, 4118423; 317439, 4118433;

317428, 4118444; 317417, 4118453;
317404, 4118461; 317395, 4118467;
317389, 4118471; 317378, 4118475;
317372, 4118478; 317355, 4118483;
317346, 4118486; 317326, 4118486;
317309, 4118485; 317293, 4118485;
317268, 4118485; 317240, 4118485;
317217, 4118482; 317198, 4118479;
317192, 4118478; 317175, 4118478;
317153, 4118482; 317117, 4118499;
317097, 4118505; 317070, 4118511;
317046, 4118515; 317021, 4118518;
317006, 4118521; 316995, 4118526;
317002, 4118540; 317023, 4118576;
317032, 4118611; 317031, 4118626;
317029, 4118655; 317019, 4118696;
317011, 4118739; 317011, 4118764;
317025, 4118791; 317039, 4118815;
317040, 4118842; 317056, 4118883;
317077, 4118919; 317100, 4118965;
317110, 4119005; 317120, 4119027;
317121, 4119029; 317140, 4119063;

317144, 4119072; 317144, 4119080;
317144, 4119116; 317144, 4119137;
317141, 4119189; 317133, 4119226;
317136, 4119291; 317144, 4119346;
317162, 4119383; 317181, 4119420;
317186, 4119427; 317196, 4119441;
317201, 4119464; 317199, 4119477;
317183, 4119477; 317162, 4119475;
317147, 4119475; 317128, 4119490;
317128, 4119501; 317126, 4119519;
317126, 4119553; 317133, 4119600;
317144, 4119616; 317154, 4119645;
317181, 4119668; 317212, 4119671;
317224, 4119672; 317259, 4119676;
317290, 4119676; 317366, 4119689;
317395, 4119692; 317403, 4119684;
317424, 4119663.

(ii) **Note:** Map of Unit 5 (Map 4)
follows:

BILLING CODE 4310-55-P



* * * * *

Family Fabaceae: *Astragalus holmgreniorum* (Holmgren Milk-Vetch)

(1) Critical habitat units are depicted for Mohave County, Arizona, and Washington County, Utah, on the maps and as described below.

(2) Within these areas, the primary constituent elements of critical habitat for *Astragalus holmgreniorum* are:

(i) Appropriate geological layers and/or soils that support individual *Astragalus holmgreniorum* plants. These include the Virgin Limestone member, middle red member, and upper red member of the Moenkopi Formation and the Petrified Forest member of the Chinle Formation. Associated soils are Badland; Badland, very steep; Eroded land-Shalet complex, warm; Hobog-rock land association; Isom cobbly sandy

loam; Ruesh very gravelly fine sandy loam; Gypill Hobog complex, 6 to 35 percent slopes; Gypill very cobbly sandy loam, 15 to 40 percent slopes; and Hobog-Grapevine complex, 2 to 35 percent slopes;

(ii) Topographic features/relief (mesas, ridge remnants, alluvial fans and fan terraces, their summits and backslopes, and gently rolling to steep swales) and the drainage areas along formation edges with little to moderate slope (0 to 20 percent); and

(iii) The presence of insect visitors or pollinators, such as *Anthophora captognatha*, *A. damnersi*, *A. porterae*, other *Anthophora* species, *Eucera quadricincta*, *Omia titus*, and two types of *Dialictus* species.

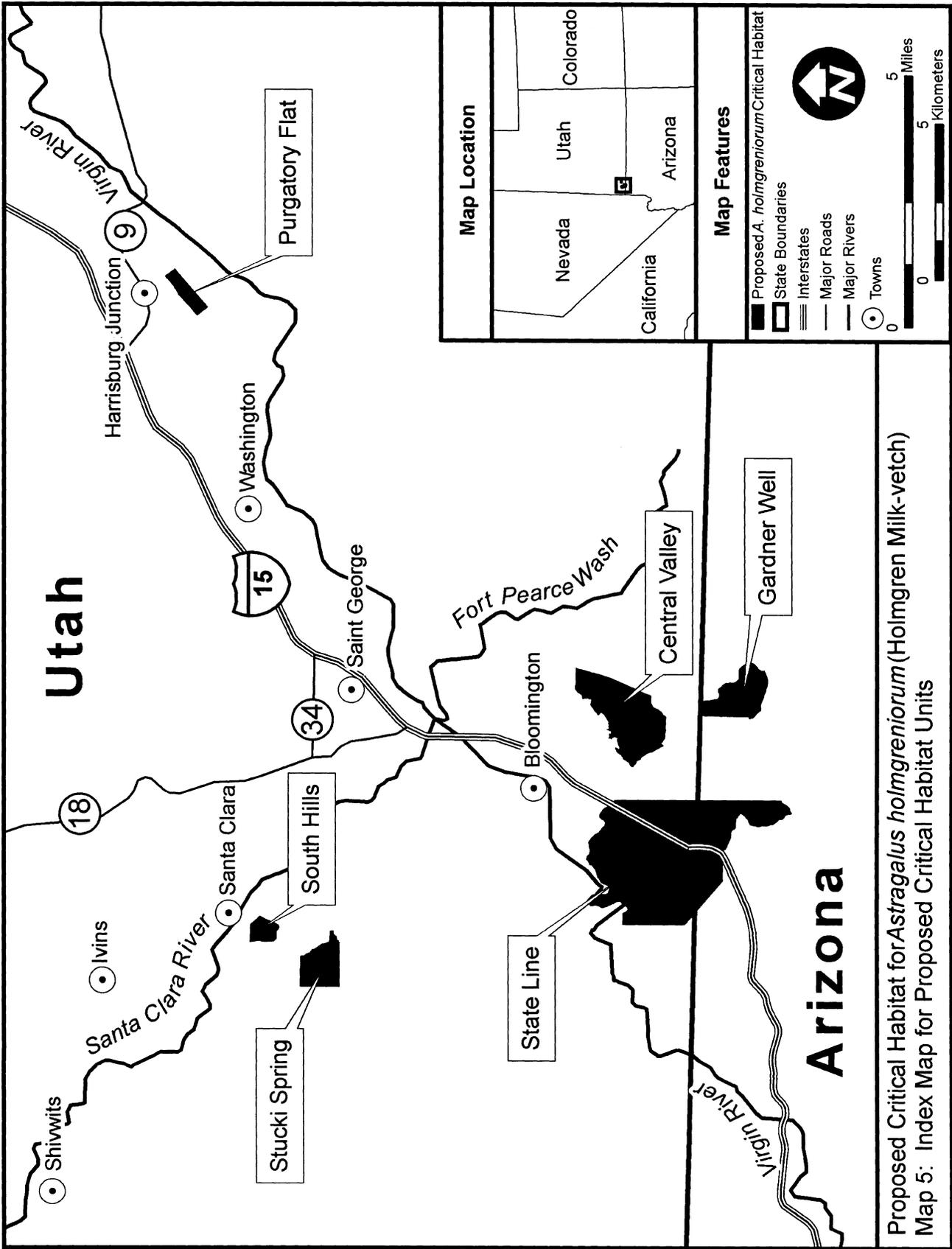
(3) Critical habitat does not include manmade structures existing on the effective date of this rule and not containing one or more of the primary

constituent elements, such as buildings, aqueducts, airports, and roads, and the land on which such structures are located.

(4) Data layers defining map units were an electronic base map of USGS 7.5' quadrangles projected to the Universal Transverse Mercator (UTM) coordinate system, Zone 12 NAD 83. Ancillary data used to help refine the unit boundaries included Digital Orthophoto Quadrangles (DOQs); National Agricultural Imagery Program (NAIP); cadastral land survey (Township, Range, and Section); soils data; and the 1:24,000 Utah water courses data set. Critical habitat units were delineated through heads-up digitizing in a Geographic Information System.

(5) **Note:** Index map (Map 5) follows:

BILLING CODE 4310-55-P



Proposed Critical Habitat for *Astragalus holmgreniorum* (Holmgren Milk-vetch)
Map 5: Index Map for Proposed Critical Habitat Units

(6) Unit 1—Utah-Arizona Border Unit: Mohave County, Arizona, and Washington County, Utah. This Unit consists of three subunits: State Line, Gardner Well, and Central Valley.

(i) Unit 1a: State Line, Washington County, Utah. The subunit is bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

265906, 4097003; 265906, 4097003;
 265325, 4097015; 265139, 4097174;
 263931, 4098206; 263933, 4100207;
 264297, 4100206; 264324, 4100152;
 264361, 4100090; 264389, 4100059;
 264420, 4100041; 264445, 4100041;
 264486, 4100066; 264528, 4100107;
 264560, 4100151; 264578, 4100184;
 264588, 4100206; 264599, 4100221;
 264614, 4100232; 264631, 4100246;
 264647, 4100256; 264657, 4100269;
 264663, 4100289; 264669, 4100308;
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 265834, 4101180; 265837, 4101186;
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 267185, 4095360; 267169, 4095383;
 267160, 4095397; 267151, 4095419;
 267143, 4095436; 267140, 4095468;
 267138, 4095492; 267131, 4095517;
 267125, 4095541; 267114, 4095575;
 267100, 4095615; 267094, 4095640;
 267094, 4095679; 267095, 4095714;
 267097, 4095762; 267099, 4095790;
 267091, 4095805; 267079, 4095831;
 267073, 4095855; 267070, 4095877;
 267072, 4095903; 267087, 4095935;
 267099, 4095962; 267101, 4095985;
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267113, 4096063; 267119, 4096088;
 267123, 4096109; 267148, 4096146;
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 267199, 4096177; 267217, 4096185;
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 267327, 4096243; 267349, 4096264;
 267379, 4096289; 267407, 4096313;
 267425, 4096330; 267454, 4096362;
 267473, 4096383; 267496, 4096415;
 267509, 4096435; 267502, 4096450;
 267490, 4096461; 267479, 4096471;
 267470, 4096480; 267454, 4096493;
 267434, 4096509; 267411, 4096525;
 267390, 4096536; 267371, 4096546;
 267340, 4096566; 267315, 4096583;
 267300, 4096584; 267280, 4096587;
 267256, 4096590; 267246, 4096591;
 267234, 4096593; 267214, 4096592;
 267171, 4096591; 267142, 4096590;
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 266855, 4096750; 266800, 4096744;
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 266703, 4096758; 266682, 4096769;
 266682, 4096769; 266682, 4096769;
 266359, 4096909; 266306, 4096995;
 266037, 4097000; 265906, 4097003.

(ii) Unit 1b: Gardner Well, Washington County, Utah. The subunit is bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

271132, 4097585; 271154, 4097406;
 271173, 4097277; 271180, 4097203;
 271233, 4097154; 271275, 4097136;
 271324, 4097129; 271370, 4097147;
 271416, 4097165; 271451, 4097161;
 271493, 4097165; 271518, 4097154;
 271539, 4097133; 271574, 4097094;
 271606, 4097055; 271628, 4097040;
 271645, 4097017; 271658, 4096995;
 271664, 4096976; 271680, 4096960;
 271693, 4096929; 271698, 4096899;
 271700, 4096880; 271702, 4096849;
 271710, 4096825; 271728, 4096800;
 271730, 4096782; 271718, 4096747;
 271711, 4096697; 271721, 4096652;
 271748, 4096601; 271795, 4096549;
 271831, 4096521; 271866, 4096521;
 271885, 4096521; 271913, 4096509;
 271946, 4096509; 271990, 4096511;
 272026, 4096514; 272051, 4096521;
 272101, 4096517; 272149, 4096496;
 272194, 4096466; 272263, 4096388;
 272301, 4096328; 272317, 4096291;
 272341, 4096229; 272356, 4096176;
 272356, 4096098; 272329, 4096025;
 272288, 4095973; 272218, 4095916;
 272194, 4095890; 272156, 4095871;
 272123, 4095845; 272103, 4095805;
 272089, 4095777; 272089, 4095743;
 272099, 4095684; 271975, 4095633;
 271847, 4095582; 271742, 4095579;
 271672, 4095582; 271424, 4095648;
 270979, 4095805; 270884, 4095787;
 270808, 4095801; 270768, 4095867;

270702, 4095929; 270640, 4095987;
270574, 4096049; 270560, 4096104;
270545, 4096159; 270574, 4096184;
270603, 4096202; 270649, 4097638;
270652, 4097721; 270768, 4097702;
270830, 4097691; 270873, 4097691;
270906, 4097680; 270950, 4097680;
270975, 4097676; 271005, 4097654;
271019, 4097640; 271048, 4097651;
271089, 4097673; 271118, 4097676;
271132, 4097585.

(iii) Unit 1c: Central Valley, Washington County, Utah. The subunit is bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N):

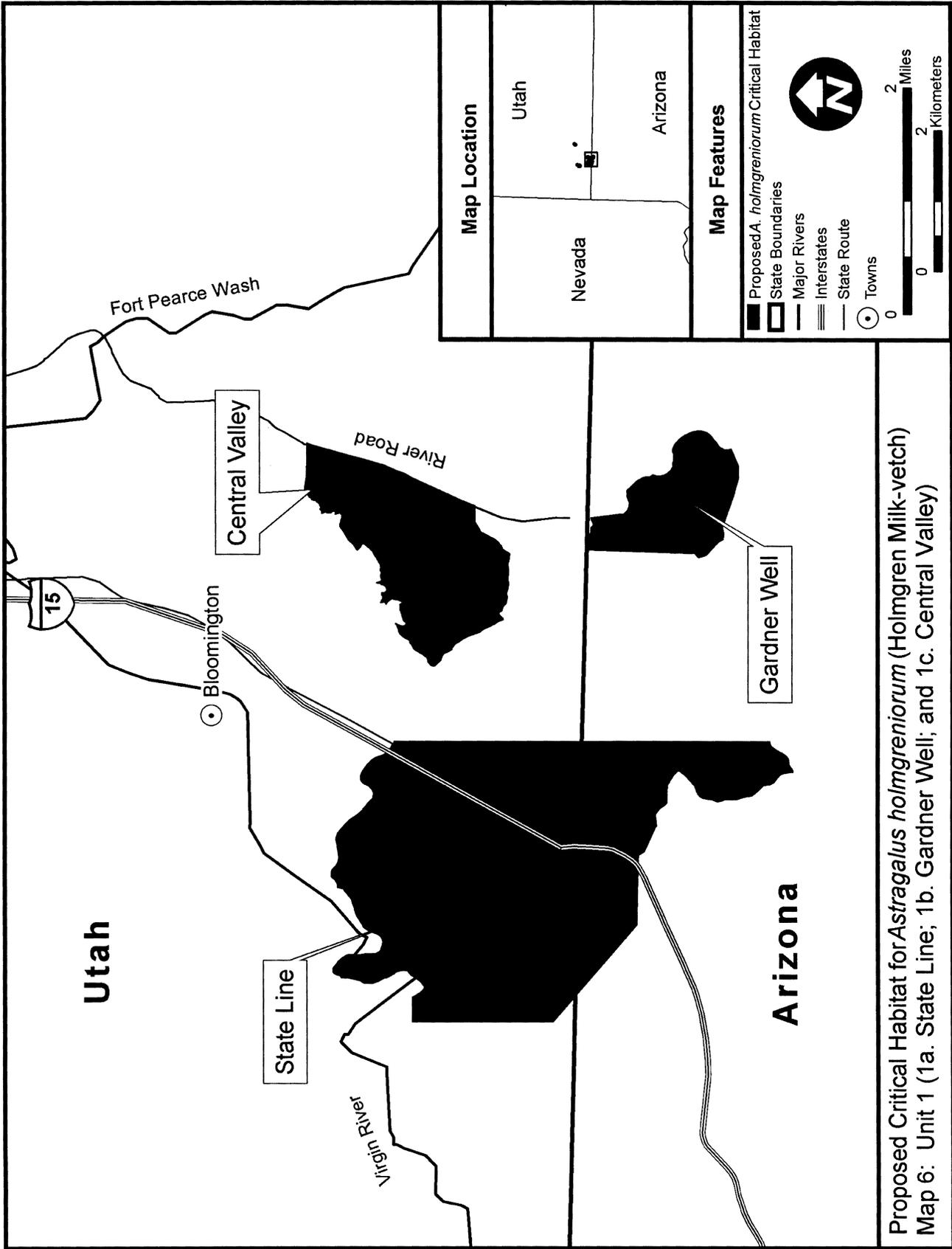
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270728, 4101030; 270760, 4101064;
270786, 4101093; 270822, 4101114;
270874, 4101145; 270902, 4101164;
270969, 4101208; 270992, 4101223;
271004, 4101223; 271021, 4101223;
271044, 4101213; 271073, 4101206;
271107, 4101198; 271142, 4101197;
271154, 4101197; 271163, 4101206;
271171, 4101222; 271164, 4101242;
271160, 4101258; 271156, 4101275;
271163, 4101287; 271180, 4101285;
271192, 4101285; 271199, 4101299;
271198, 4101309; 271189, 4101318;
271182, 4101327; 271174, 4101342;
271172, 4101370; 271172, 4101390;
271182, 4101412; 271183, 4101421;
271179, 4101435; 271172, 4101447;
271166, 4101459; 271165, 4101472;
271171, 4101481; 271182, 4101481;
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271224, 4101496; 271230, 4101502;
271243, 4101498; 271254, 4101491;
271267, 4101491; 271284, 4101502;
271293, 4101510; 271306, 4101510;
271314, 4101522; 271324, 4101534;
271331, 4101544; 271343, 4101555;
271347, 4101569; 271347, 4101583;
271355, 4101592; 271355, 4101601;
271355, 4101611; 271365, 4101615;
271378, 4101620; 271386, 4101628;
271389, 4101641; 271394, 4101649;
271410, 4101651; 271418, 4101660;
271422, 4101672; 271432, 4101669;
271445, 4101671; 271457, 4101679;
271468, 4101689; 271477, 4101702;
271484, 4101713; 271492, 4101726;
271507, 4101717; 271558, 4101711;
271681, 4101696; 271855, 4101690;
272074, 4101690; 272177, 4101687;
272181, 4101689; 272129, 4101534;
272086, 4101373; 272020, 4101140;
271940, 4100852; 271861, 4100577;
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270954, 4099236; 270933, 4099226;
270919, 4099215; 270904, 4099188;
270878, 4099136; 270861, 4099099;
270839, 4099061; 270817, 4099026;
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270551, 4098818; 270521, 4098818;
270494, 4098824; 270467, 4098835;
270423, 4098828; 270401, 4098827;
270344, 4098826; 270294, 4098830;
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270142, 4098828; 270099, 4098835;
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269165, 4099747; 269143, 4099759;
269123, 4099767; 269097, 4099776;
269080, 4099783; 269064, 4099801;
269050, 4099821; 269032, 4099840;
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269009, 4099933; 269035, 4099958;
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269143, 4100027; 269162, 4100052;
269179, 4100082; 269197, 4100110;
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269376, 4100258; 269387, 4100289;
269415, 4100322; 269432, 4100348;
269451, 4100367; 269483, 4100384;
269520, 4100400; 269553, 4100408;
269587, 4100423; 269608, 4100437;
269610, 4100440; 269616, 4100443;
269621, 4100439; 269618, 4100426;
269618, 4100414; 269612, 4100404;
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269601, 4100290; 269620, 4100293;

269631, 4100312; 269652, 4100322;
269686, 4100335; 269715, 4100348;
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269802, 4100375; 269827, 4100375;
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269878, 4100381; 269886, 4100375;
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269908, 4100586; 269911, 4100600;
269905, 4100618; 269899, 4100631;
269899, 4100645; 269905, 4100651;
269918, 4100648; 269930, 4100642;
269942, 4100634; 269963, 4100624;
269971, 4100619; 269989, 4100621;
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270048, 4100633; 270054, 4100628;
270054, 4100609; 270054, 4100603;
270058, 4100593; 270068, 4100574;
270083, 4100564; 270104, 4100564;
270126, 4100573; 270143, 4100590;
270152, 4100613; 270153, 4100628;
270165, 4100639; 270178, 4100652;
270178, 4100670; 270181, 4100693;
270181, 4100699; 270182, 4100700;
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270594, 4100738; 270620, 4100755;
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270667, 4100795; 270680, 4100808;
270698, 4100829; 270710, 4100844;
270723, 4100859; 270731, 4100875;
270733, 4100886; 270731, 4100899;
270723, 4100908; 270707, 4100915;
270694, 4100921; 270684, 4100930;
270672, 4100937; 270670, 4100941;
270671, 4100941.

(iv) Note: Map of Unit 1 (Map 6) follows:

BILLING CODE 4310-55-P



(7) Unit 2—Santa Clara Unit: Washington County, Utah. This Unit consists of two subunits: Stucki Spring and South Hills.

(i) Unit 2a: Stucki Spring, Washington County, Utah. Land bounded by the UTM Zone 12 NAD 83 coordinates (meters E, meters N):

263378, 4109549; 263418, 4109530;
263501, 4109530; 263565, 4109524;
263638, 4109510; 263675, 4109505;
263723, 4109495; 263732, 4109391;
263668, 4109390; 263641, 4109390;
263582, 4109355; 263545, 4109295;
263501, 4109289; 263455, 4109290;
263434, 4109292; 263406, 4109234;
263354, 4109218; 263352, 4109197;
262936, 4109206; 262113, 4109203;
261933, 4109205; 261931, 4110468;

262149, 4110467; 262930, 4110440;
262937, 4110314; 262963, 4110284;
262990, 4110253; 263009, 4110216;
263025, 4110178; 263046, 4110153;
263067, 4110128; 263086, 4110108;
263119, 4110079; 263138, 4110045;
263167, 4109979; 263212, 4109900;
263256, 4109836; 263304, 4109769;
263326, 4109697; 263329, 4109655;
263343, 4109609; 263354, 4109584;
263378, 4109549.

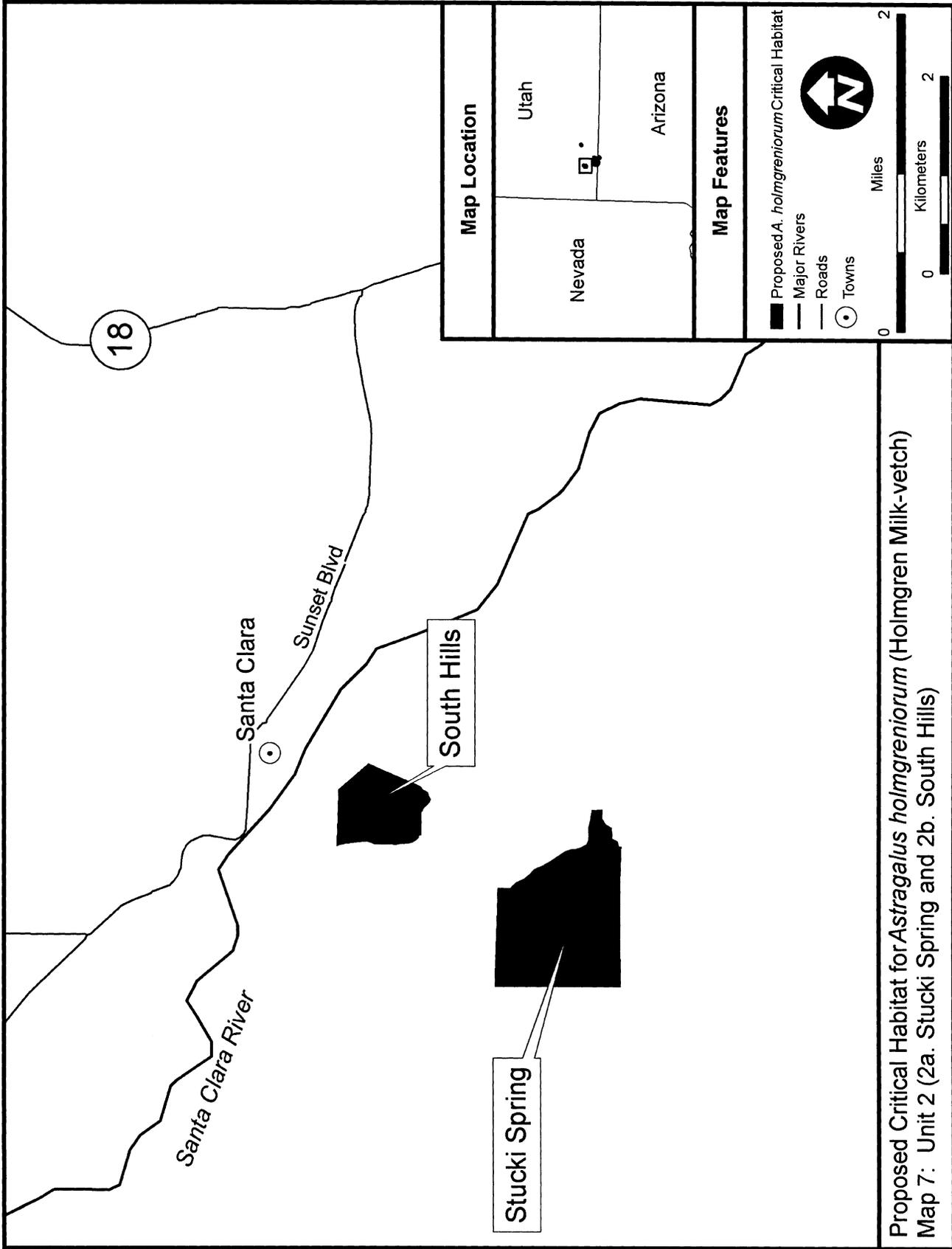
(ii) Unit 2b: South Hills, Washington County, Utah. Land bounded by the UTM Zone 12 NAD 83 coordinates (meters E, meters N):

263701, 4111206; 263464, 4111209;
263458, 4111228; 263434, 4111232;
263420, 4111249; 263391, 4111293;
263380, 4111332; 263375, 4111375;

263371, 4111429; 263366, 4111474;
263374, 4111510; 263374, 4111568;
263374, 4111610; 263367, 4111656;
263373, 4111686; 263387, 4111711;
263399, 4111756; 263394, 4111813;
263384, 4111890; 263375, 4111968;
263364, 4112028; 263347, 4112059;
263350, 4112060; 263933, 4112042;
263933, 4112038; 263933, 4112037;
264193, 4111740; 264131, 4111601;
263986, 4111269; 263956, 4111211;
263927, 4111189; 263913, 4111164;
263894, 4111138; 263865, 4111127;
263829, 4111113; 263803, 4111120;
263781, 4111142; 263759, 4111156;
263738, 4111182; 263705, 4111197;
263701, 4111206.

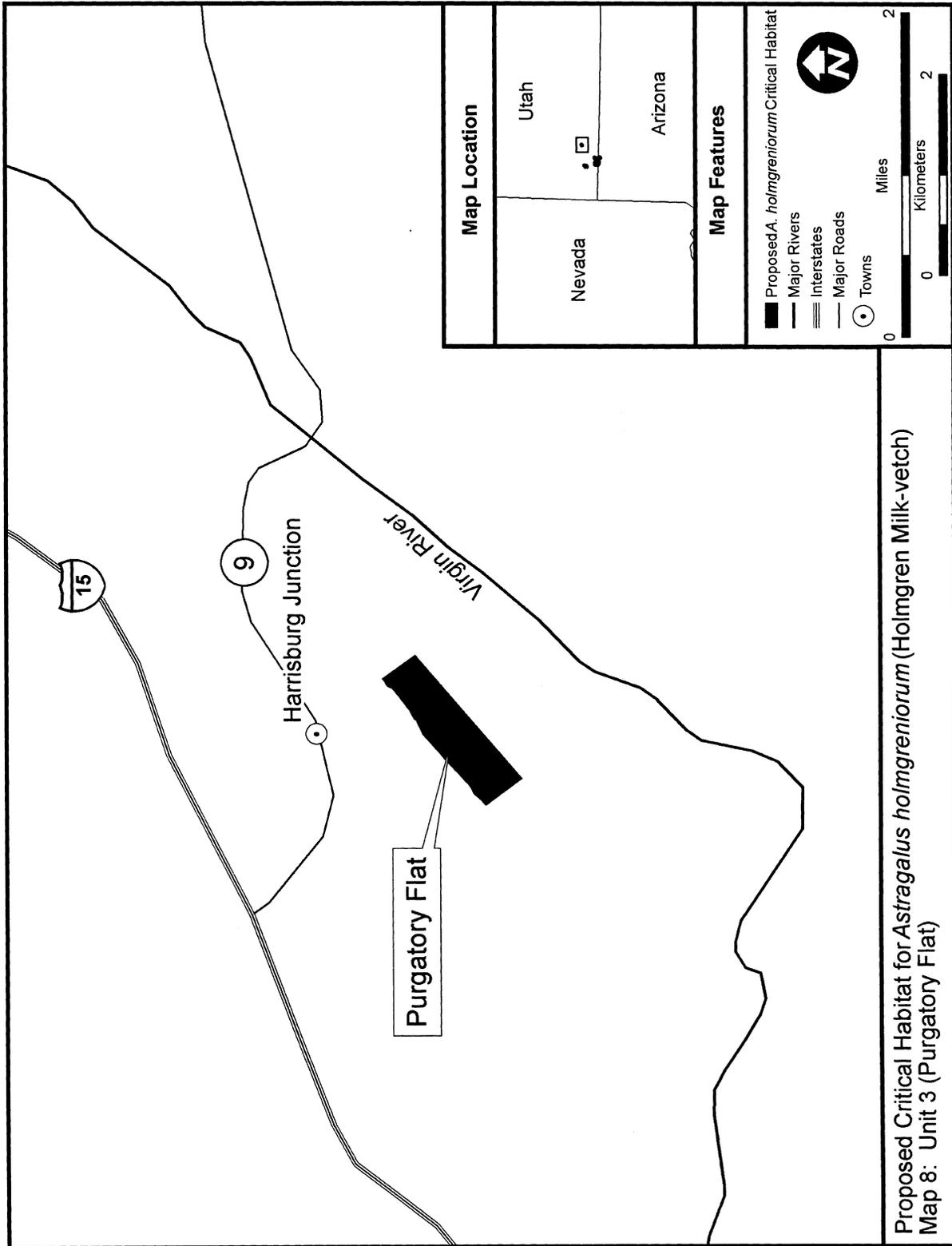
(iii) **Note:** Map of Unit 2 (Map 7) follows:

BILLING CODE 4310-55-P



Proposed Critical Habitat for *Astragalus holmgreniorum* (Holmgren Milk-vetch)
Map 7: Unit 2 (2a. Stucki Spring and 2b. South Hills)

(8) Unit 3—Purgatory Flat Unit: Washington County, Utah.	284590, 4114654; 284617, 4114709; 284659, 4114733; 284693, 4114759; 284933, 4114429; 284888, 4114391; 283702, 4113373; 283429, 4113736; 283481, 4113781; 283526, 4113829; 283547, 4113854; 283592, 4113874; 283640, 4113909; 283672, 4113940; 283737, 4113995; 283810, 4114065;	283841, 4114096; 283862, 4114110; 283886, 4114138; 283949, 4114190; 283987, 4114228; 284032, 4114262; 284060, 4114287; 284098, 4114325; 284139, 4114359; 284276, 4114426.
(i) Land bounded by the following UTM Zone 12 NAD 83 coordinates (meters E, meters N): 284276, 4114426; 284295, 4114449; 284375, 4114491; 284510, 4114595;		(ii) Note: Map of Unit 3 (Map 8) follows: BILLING CODE 4310-55-P



* * * * *

Dated: March 17, 2006.
Matt Hogan,
*Acting Assistant Secretary for Fish and
 Wildlife and Parks.*
 [FR Doc. 06-2840 Filed 3-28-06; 8:45 am]
BILLING CODE 4310-55-C