

As a result, it is likely in some years that few, if any, seeds are added to the soil seed bank. The patchy distribution of the plants in any given year is likely a combination of several factors including the dynamics of dune morphology, local rainfall patterns and amounts, as well as the spatial distribution of the seed bank, and seed scarification.

We delineated the proposed critical habitat by creating data layers in a GIS format. Because of the dynamic nature of the distribution of this plant, the cyclic nature of suitable climatic regimes, and the presence of a seed bank for *Astragalus magdalenae* var. *peirsonii*, grid squares where this plant has not been encountered are included as critical habitat if they are contiguous with grid squares where the plant has been found and possess the primary constituent elements and are considered occupied. Another reason for their inclusion is that there are gaps in those transects surveyed by Westec and BLM. The TOA (2001) survey bridged some of these gaps and leave little doubt that additional surveys in previously unsurveyed transects would likely fill in the east-to-west pattern as well. The BLM surveys serve as the basis for the mapping of critical habitat. An exception to this is instances where Westec (1977) data is the only source of a record. Because BLM has included only 34 west-east transects along the length of the dunes, and additional data from TOA (2001) and Westec (1977) tend to bridge the gaps between BLM's transects, we considered the northwest to southeast distribution to be generally continuous.

In order to provide legal descriptions of the critical habitat boundaries, we then used an overlaid 100-meter grid to establish Universal Transverse Mercator (UTM) North American Datum 27 (NAD 27) coordinates which, when connected, provided the critical habitat unit boundaries.

In designating critical habitat, we made an effort to avoid developed areas, OHV staging areas, and disturbed areas along roadways that are unlikely to contain the primary constituent elements and therefore contribute to the conservation of *Astragalus magdalenae* var. *peirsonii*. However, we did not map critical habitat in sufficient detail to exclude all developed areas, or other lands unlikely to contain the primary constituent elements essential for the conservation of *A. m. var. peirsonii*. Areas within the boundaries of the mapped units, such as buildings, roads, parking lots, railroad tracks, canals, and other paved areas, will not contain one or more of the primary constituent elements. Federal actions limited to

these areas, therefore, would not trigger a consultation under section 7 of the Act, unless they affect the species or primary constituent elements in adjacent critical habitat.

### Special Management Considerations

Special management considerations or protections may be needed to maintain the physical and biological features as well as the primary constituent elements that are essential for the conservation of *Astragalus magdalenae* var. *peirsonii* within the unit being proposed as critical habitat. As noted in the Critical Habitat section, "special management considerations or protection" is a term that originates in section 3(5)(A) of the Act under the definition of critical habitat. We believe that the proposed critical habitat unit may require the special management considerations or protections outlined below.

1. The dune composition and structure should be maintained in a manner compatible with the natural distribution pattern of *Astragalus magdalenae* var. *peirsonii* and be conducive to the persistence of associated psammophytic scrub species and discourage creosote bush scrub.

2. The direct and indirect impacts of OHVs on individual plants, as well as on the plants reproductive capacity, must be scientifically determined. These impacts must be assessed at a relevant time scale to determine seasonal impact, frequency of impact, duration of impacts, and pattern of impacts. This may allow an objective application of acceptable levels and timing of OHV activity in each of the BLM recreation management areas.

Recently, the BLM issued a Recreation Area Management Plan (RAMP) for the Imperial San Dunes (BLM 2003). A specified major focus of the RAMP is to ensure that the "world class opportunities" of Imperial Sand Dunes Recreation Area (ISDRA) are continuously available while responding to increased need for protection of plant and animal species in the dunes (BLM 2003). Species specific management needs and measures for *Astragalus magdalenae* var. *peirsonii* are not addressed in the RAMP. In the RAMP, BLM does include a monitoring/study plan that they propose to implement. The results of this monitoring would be incorporated into a management plan developed for *Astragalus magdalenae* var. *peirsonii*.

Within the ISDRA only the North Algodones Dune Wilderness Area (Wilderness Area) will remain closed to public motorized vehicle use. Although the Wilderness Area does not allow

motorized recreational use, it is open to non-motorized public uses including hiking and horseback riding. Additionally, vehicular use by the California Department of Fish and Game, the Border Patrol and other permitted entities will be allowed. The Wilderness Area is not actively managed for the conservation of plant and animal species, rather management will take the form of "minimal and subtle on-site controls and restrictions."

### Proposed Critical Habitat Designation

Lands proposed for critical habitat designation include Federal and private lands. The approximate areas of proposed critical habitat by land ownership are shown previously in this document in table 1.

The proposed critical habitat areas constitute our best assessment of the areas essential for the conservation of *Astragalus magdalenae* var. *peirsonii* and provide the primary constituent elements **described above**. The critical habitat includes locations where standing plants of *A. m. var. peirsonii* have been observed during BLM and Westec surveys. Because of the natural fluctuations in population numbers and timing of rainfall and pattern of seed germination, standing plants may not appear in all areas of critical habitat every year. Within the boundary of critical habitat we also include areas contiguous to those where standing plants have been recorded, and where, because of plant proximity and habitat continuity, we have no reason to doubt the presence of plants as a seed bank. This has been supported by recent findings from a single survey by TOA (2001) that found plants in areas of the dunes interspersed with those included in the BLM transects.

The Algodones Dunes Critical Habitat Unit is in eastern Imperial County, California. This is the only region in the United States where there are deep dunes maintained by dune-building winds that result in natural expanses of swales and slopes under 20 degrees slope, and appropriate Rositas soils. This is also the only region of the United States that supports an extant population of *Astragalus magdalenae* var. *peirsonii*, and we have no evidence that another such area exists. It extends, as an elongate triangle shape, from the International Boundary northward in a northwesterly direction. The western boundary parallels the Coachella Canal. The eastern boundary is generally half way between this and Ted Kipf Road to the east. The northern end attenuates to a point near the convergence of the Coachella Canal and Ted Kipf Road.