

proposed designation, in particular, any impacts on small entities;

(5) Economic and other values associated with designating critical habitat for *Astragalus magdalenae* var. *peirsonii* such as those derived from non-consumptive uses (e.g., hiking, camping, photography, improved air quality, increased soil retention, and "existence values"); and

(6) 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 electronic comments in ASCII file format and avoid the use of special characters or any form of encryption. Please also include "Attn: RIN1018-A177" 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 Carlsbad Fish and Wildlife Office at phone number 760-431-9440. Please note that the e-mail address "FW1PMV@r1.fws.gov" will be closed out 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 address 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. 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.

Background

We listed *Astragalus magdalenae* var. *peirsonii* as threatened on October 6,

1998 (63 FR 53596) due to threats of increasing habitat loss from Off-Highway Vehicle (OHV) use and associated recreational development, destruction of plants, and lack of protection afforded the plant under State law. It is our intent, in this proposed rule, to reiterate and discuss only those topics directly relevant to the development and designation of critical habitat or relevant information obtained since the final listing. Please refer to our final listing rule for a more detailed discussion of the plant's taxonomic history and physical description.

The current name, *Astragalus magdalenae* var. *peirsonii* (Munz and Mc Burney) Barneby (Barneby 1958), is accepted in both systematic (Barneby 1964) and floristic treatments (Barneby 1959, Munz 1974, and Spellenberg 1993). Surveys conducted in the Borrego Valley, have failed to document a historical reference to an occurrence of *Astragalus magdalenae* var. *peirsonii* (Bureau of Land Management (BLM) 2001); consequently this population is thought to be extirpated. A collection from the Yuma Dunes of Arizona thought to represent *A. m.* var. *peirsonii* was found to be misidentified. In Mexico, *A. m.* var. *peirsonii* is known from the Gran Desierto of northwestern Sonora (Felger 2000) and from northeastern Estado de Baja California (Barneby 1959, 1965; Spellenberg 1993). Currently, the only known population of *A. m.* var. *peirsonii* remaining in the United States is located in the Algodones Dunes of Imperial County, California. This dune field is one of the largest in the United States and one of the most popular for OHV use.

Astragalus magdalenae var. *peirsonii* is a stout, short-lived perennial member of the Fabaceae (Legume Family). Plants develop extremely long tap roots (Barneby 1964) that penetrate deeply to the more moist sand and anchor the plants in the shifting dunes. The root crown is often exposed by wind action moving the sand away from the base of the plants. The flowers are arranged in 10 to 17 flowered racemes. The inflated fruits are large and contain 11 to 16 large flattened black seeds—among the largest seeds of any *Astragalus* in North America. Seeds are either dispersed locally by falling out of partly opened fruits on the parent plant salt-shaker style or by their release from fruits blown across the sand after falling from the parent plant. Seeds require no pre-germination treatment to induce germination, but show increased germination success when scarified (outer cover is broken) (Romspert and Burk 1979; Porter *in litt.* 2002). Dispersed seeds that do not germinate

during the subsequent growing season become part of the seed bank (Given 1994). In laboratory studies, seeds germinated more readily at lower and intermediate temperatures of 59 to 77 degrees Fahrenheit (15 to 25 degrees Celsius) in the cooler fall and winter months as might be expected (Romspert and Burk 1979).

Astragalus magdalenae var. *peirsonii* seedlings reportedly mature rapidly, and although perennial, some plants may bear fruit within several months of germination (Barneby 1964; Romspert and Burk 1979). Romspert and Burk (1979) noted that older plants were the primary seed producers, and plants that become reproductive in the first season do not make significant contributions to the seedbank. It is therefore important that plants survive for more than 1 year in order to replenish the existing seedbank.

Astragalus magdalenae var. *peirsonii* exhibits temporal variability in plant numbers apparently associated with annual precipitation patterns. In dune-wide surveys conducted in 1997, 1998, 1999, and 2000, the species was most abundant in 1998, the highest rainfall year, and least abundant in 2000, the lowest rainfall year (BLM 2001). Based on current understanding of the species' life history, sufficient rain in conjunction with wetter-than-average fall weather appears to trigger significant germination events. Seedlings may be generally present in suitable habitat throughout the dunes, especially during above-normal precipitation years. In intervening drier years, plant numbers decrease as individuals die and are not replaced by new seedlings. The species likely depends on the production of seeds in the wetter years and the persistence of the seed banks until appropriate conditions for production and germination occur. Further research and modeling are necessary to better understand the dynamics of this system and how the species may be responding to natural and man-made disturbances within its range.

Astragalus magdalenae var. *peirsonii* occurs on open sand dunes in a vegetation community referred to as psammophytic scrub (Westec 1977; BLM 2000). Desert psammophytic scrub is described as being distinguished by a rather large number of plants restricted entirely or largely to an active dune area (Thorne 1982). Desert psammophytic scrub transitions into the sandier phases of creosote bush scrub, which is generally only present at the lower, more stabilized margins of the dunes (Thorne 1982). *Astragalus magdalenae* var. *peirsonii*, *Helianthus niveus* ssp.