U.S. FISH AND WILDLIFE SERVICE—SPOTLIGHT SPECIES ACTION PLAN

2010-2014

Scientific Name: *Astragalus magdalenae* var. *peirsonii*
Common Name: **Peirson's milk-vetch**
Lead Region: Pacific Southwest Region (Region 8)
Lead Field Office: Carlsbad Fish and Wildlife Office

Species Information

Overview—This plant taxon is in the Fabaceae (pea family). Plants are short lived perennials restricted to open sandy areas in the Algodones Dunes in Imperial County, southeastern California. Actions associated with this taxon are controversial because of coincidence of habitat with the Imperial Sand Dunes Recreation Area (ISDRA) managed by the Bureau of Land Management (BLM) as a major Off-highway vehicle (OHV) recreation area.

Status:	Threatened (63 FR 53596); State endangered in 1979
Recovery Priority Number:	9 (subspecies, moderate threat, high recovery potential)
Recovery Plan:	None
Most Recent 5-year Review:	September 30, 2008
Other Documents:	Revised Critical Habitat final rule, February 14, 2008 (73 FR 8747); 12-month finding on a petition to delist ASMAPE, July 17, 2008 (73 FR 41007)

Threats:

Factor A: Primary threat is OHV impact which contributes to existing habitat fragmentation.
Factor C: Herbivory; seed predation.
Factor D: BLM's Recreation Area Management Plan (RAMP) for ISDRA is anticipated to reduce the threat from OHV activity, but the revised RAMP is not yet finalized.
Factor E: Low reproductive output.

Target: To delist *Astragalus magdalenae* var. *peirsonii* within the next 5 years.

This goal is attainable if continued coordination with the BLM results in a revised RAMP for the ISDRA that ensures future management actions minimize further destruction and fragmentation of *Astragalus magdalenae* var. *peirsonii* (ASMAPE) habitat and individuals. The 12-month finding summarized evidence of the impacts to ASMAPE and its habitat from OHV activity and how restrictions on OHV activity affected the level of impact to ASMAPE. Our delisting analysis would be improved with additional information on the species' biology and clarification of its taxonomic status, including data on seed production and the adequacy of the various OHV exclusion/management areas for providing genetic reserves for the taxon. Additionally, our anticipated delisting analysis would be improved with information on whether ASMAPE is really a variety of *Astragalus magdalenae* or a separate species and to what extent the similar plants in the

Gran Desierto, Sonora, Mexico are related to those found on the Algodones Dunes. The California material may be a unique taxon. Some work has already been undertaken and/or is underway (see Measures 3-5 in Table 1). This Action Plan includes an estimate of additional funding requirements to complete these measures.

Measure: Change the Recovery Priority Number (RPN) by:

1) Reducing the threat level from OHV impacts to plants and their habitat through implementation of BLM's revised RAMP.
2) Reducing habitat fragmentation and population isolation by management actions (e.g., geographic restrictions of OHV activity) through implementation of BLM's revised RAMP.
3) Determining through systematic studies whether ASMAPE should be recognized at the species rank, which would change the Recovery Priority Number as well as indicate unique status from taxa previously thought to be closely related.
4) Determining through genetic studies whether populations are functionally sufficient to permit persistence of ASMAPE across its range to assess the conservation success of management areas.

Actions:

1) Ensure management actions minimize further destruction of ASMAPE habitat and individuals.

   The adequacy, scope, and permanence of the management measures described in the revised RAMP will affect our ability to reduce the RPN's threat potential to "low". This action affects measure 1 and addresses threats under Factors A and D.

   Service's role—Coordinate and consult with BLM under section 7 of the Act (informally and formally) to ensure the RAMP adequately addresses OHV-related threats to ASMAPE habitat and individuals.

   - Section 7: Encourage BLM to include compatible conservation measures in the RAMP.

   Partners and stakeholders—The Algodones Dunes where ASMAPE occurs are Federal lands owned and managed by BLM. Agency coordination and negotiation would be between BLM, USFWS, and CDFG. The CDFG is involved through administration of section 6 grants, and ASMAPE is also listed by the State. Some level of coordination with nongovernmental groups (e.g., American Sand Association and Center for Biological Diversity) may be undertaken.

   Estimated Costs—To be determined. Service costs will likely be through consultation under section 7 of the Act and other discussions.

2) The USFWS will coordinate with BLM to ensure that large areas of contiguous ASMAPE habitat are protected, thereby reducing the potential for habitat fragmentation and population isolation. This action affects measure 2 and addresses threats under Factors A and D.

   Service's role— Coordinate and consult with BLM under section 7 of the Act (informally and formally) to ensure the RAMP adequately addresses OHV-related threats to ASMAPE habitat and individuals.

   - Section 7: Encourage BLM to include compatible conservation measures in the RAMP.

   Partners and stakeholders—Coordination will be conducted amongst BLM, USFWS, and CDFG. The CDFG is involved because ASMAPE is also listed by the State. Some level of coordination with nongovernmental groups (e.g., American Sand Association and Center for Biological Diversity) may be undertaken.

   Estimated Costs—To be determined. Service costs will likely be through consultation under section 7 of the Act and other discussions.

3) Determine the relationship of *Astragalus magdalenae* var. *peirsonii* to putative relatives (*Astragalus magdalenae* var. *magdalenae* and var. *niveus*) and to disjunct populations of ASMAPE in the Gran Desierto, Sonora, Mexico. This will clarify the taxonomic status of Peirson's milkvetch and its range and thereby give a clearer picture of threats due to population isolation. The research staff at Rancho Santa Ana Botanic Garden (RSABG) has been working on these issues with some support through section 6 funds and CDFG. The CDFG may participate through section 6 funding. Field collection of samples and laboratory analysis of material and data will be performed by RSABG staff. This action affects measure 3 and addresses threats under Factor E.

   Service's role—Coordinate with partners and stakeholders.

   - Section 6: Work with the State of California to apply for grants to for field collection and laboratory analysis of material and data.
   - Section 10: Work with RSABG on 10(a)(1)(A) permits, if necessary.

   Partners and stakeholders—BLM, CDFG, and research staff at Rancho Santa Ana Botanic Garden.

   Estimated Costs—An additional $61,000.00 is needed to complete this action. An estimated $20,000 has been encumbered or spent.

4) Investigate levels of genetic diversity within and between occurrences of this self-incompatible species in order to better-manage occurrences for long-term conservation of ASMAPE. This information will be used in the management considerations of larger and smaller occurrences and assessments of the relative value of more isolated occurrences in

the range of ASMAPE. The CDFG may participate through section 6 funding. The research staff at RSABG has the capacity and preliminary data to perform this assessment. This action affects measure 4 and addresses threats under Factor E.

Service's role—Coordinate with partners and stakeholders.

- Section 6: Work with the State of California to apply for grants for field collection and laboratory analysis of material and data.
- Section 10: Work with RSABG on 10(a)(1)(A) permits, if necessary.

Partners and stakeholders—BLM, CDFG, and research staff at Rancho Santa Ana Botanic Garden.

Estimated Costs—An additional $176,000.00 is needed to complete this action. An estimated $15,000 has been encumbered or already spent.

5) Determine if the observed rate of herbivory and seed predation pose significant threats to annual ASMAPE reproductive output or plant survival. This will address the importance of these threats to the survival of the taxon. The USFWS will coordinate with partners to design and implement this study and/or assess available data. The CDFG may participate through section 6 funding. Field surveys will be conducted by RSABG staff and/or staff at the University of California at Davis with assistance of Service staff as needed. This action affects measure 4 and addresses threats under Factor C.

Service's role—Coordinate with BLM, CDFG, and research staff at Rancho Santa Ana Botanic Garden.

- Section 6: Work with the State of California to apply for grants for field collection and laboratory analysis of material and data.
- Section 10: Work with RSABG on 10(a)(1)(A) permits, if necessary.

Partners and stakeholders—BLM, CDFG, and research staff at Rancho Santa Ana Botanic Garden.

Estimated Costs—An additional $50,000.00 is needed to complete this action. An estimated $10,000 has been encumbered or spent.

Additional funding analysis: Additional funds could accelerate the studies outlined above or may be applied to determination of pollen and seed dispersal vectors and habitat characterization for ASMAPE. This will impact measure 4 above and address the survival potential of preserve areas. Funding would be applied to studies carried out by research staff at Rancho Santa Ana Botanic Garden.

FIELD OFFICE APPROVAL:

Lead Field Supervisor, Fish and Wildlife Service

ACTING

Approve _____ *Date* SEP 1 7 2009

Scott A. Sobiech

REGIONAL OFFICE CONCURRENCE:

Assistant Regional Director Ecological Services, Fish and Wildlife Service

Concur _____ *Date* 9/22/09

Table 1. Action Reference Guide. See text for details.

Target	Measure	Action	Status	Duration/ Timeline	Cooperating Parties	Additional funding needed to implement action (monies already encumbered or spent)
Delist	1. Impacts to habitat from OHVs are decreased	1. Ensure that revised RAMP management actions for the ISDRA result in minimization destruction of ASMAPE habitat and individuals by OHV activity. (Factor A and D)	ongoing	Duration: TBD Timeline: TBD	BLM (RAMP); USFWS; CDFG	
	2. Sources identified and population isolation decreased	2. Ensure that large areas of contiguous ASMAPE habitat are protected thereby reducing habitat fragmentation and population isolation. (Factors A and D)	ongoing	Duration: TBD Timeline: TBD	BLM (RAMP); USFWS; CDFG	
	3. Systematic studies are completed	3. Determine relationships among ASMAPE and other varieties of *Astragalus magdalenae* (Factor E) and determine relationship between ASMAPE populations in the U.S. and those in Sonora, Mexico. (Factor E)	ongoing	Duration: 2 yrs Timeline: Winter or spring start	RSABG; BLM, USFWS; CDFG	$61,000 **($20,000)**
	4. Populations are functionally sufficient and biotic threats are negligible	4. Investigate levels of genetic preservation are sufficient in each of the protected areas. (Factor E)	ongoing	Duration: 5 yrs Timeline: Nov. start	RSABG; BLM; USFWS; CDFG; UCD	Up to $176,000 **($15,000)**
		5. Determine potential significance of herbivory and seed predation to populations. (Factor C)	ongoing	Duration: 2 to 3 yrs Timeline: Nov. start	RSABG; BLM; USFWS; CDFG; UCD	$50,000 **($10,000)**