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Richard N. Smith,  
Acting Director, Fish and Wildlife Service.  
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## 50 CFR Part 17

RIN 1018-AB38

### Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for *Astragalus cremnophylax* var. *cremnophylax* (sentry milk-vetch)

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule:

**SUMMARY:** The Fish and Wildlife Service (Service) proposes to list *Astragalus cremnophylax* var. *cremnophylax* (sentry milk-vetch), as an endangered species under the authority of the Endangered Species Act of 1973 (Act), as amended. This plant is known from a single site on the South Rim of Grand Canyon National Park. The entire population consists of fewer than 500 plants. Park visitors at the site are trampling plants and degrading the habitat. This proposal, if made final, would implement Federal protection provided by the Act for sentry milk-vetch. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by December 18, 1989. Public hearing requests must be received by December 4, 1989.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Ecological Services Field Office, U.S. Fish and Wildlife Service, 3616 West Thomas Road, Suite 6, Phoenix, Arizona 85019. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Sue Rutman, at the above address (Telephone 602/261-4720 or FTS 261-4720).

#### SUPPLEMENTARY INFORMATION:

##### Background

*Astragalus cremnophylax* var. *cremnophylax* is a dwarf milk-vetch that is endemic to a single viewpoint on the South Rim of Grand Canyon National Park. The plant occurs in crevices and depressions with shallow soils on Kaibab limestone on a broad platform at the rim of the Grand Canyon gorge. This milk-vetch apparently prefers the

unshaded, well drained soils or limestone pavement in an opening in the pinyon-juniper woodland. Dominant species in the surrounding community include *Petrophytum caespitosum* (rock-mat), *Pinus edulis* (pinyon pine), *Juniperus osteosperma* (Utah juniper), *Cercocarpus intricatus* (little-leaf mountain mahogany), *Ephedra viridis* (Mormon tea), *Cowania mexicana* (cliffrose), *Artemesia bigelovii* (sagebrush), *Agropyron smithii* (wheatgrass), and *Poa pratensis* (bluegrass), (Phillips et al. 1982). Sentry milk-vetch and rock-mat are the two dominant species in the dwarf plant community that occurs on this limestone pavement.

*Astragalus cremnophylax* var. *cremnophylax* is usually less than one inch (2.5 cm) high and forms a mat 1-10 inches (2.5-25 cm) in diameter (McDougall 1964). The short, creeping stems have compound leaves less than 0.4 inches (1.0 cm) long composed of 5-9 tiny leaflets. The fruit is obliquely egg-shaped and densely hairy. Whitish or pale purple flowers are 0.2 inches (0.5 cm) long and appear from late April to early May. Seeds are set in late May-June (Phillips et al. 1982). The plants appear to be long-lived and have a thick tap root that penetrates the limestone surface to reach a more constant source of moisture.

A thorough count of all plants in 1988 indicated that the population contained 489 plants. A 1989 inventory of the monitoring plots established in 1988 indicated that the population declined about 10 percent. Data indicate the cause for this decline may be trampling by park visitors. The effects of trampling on both plants and their habitat may have been amplified by the below average rainfall in 1989.

In 1988, the seedling class comprised only 22.2 percent of the population. Given the trampled condition of most mature plants, a likely explanation for the small proportion of seedlings is that they are killed by trampling. Only those seedlings in sites relatively safe from trampling survive. Poor seed dispersal may also affect the number of seedlings.

*Astragalus cremnophylax* was first discovered in 1903 by Marcus E. Jones who reported it as "apparently common at Grand Canyon \* \* \* on sandy ledges." He mistook the plant for *A. humillimus* Gray, of which only Brandegee's imperfect, now flowerless type from Mesa Verde, Colorado, is extant. Both are alike in diminutive stature and similar pubescence but differ in petioles and pods. Barneby and Ripley recollected the species in 1947 at a location west of El Tovar, Grand Canyon National Park. Barneby

described it as a new species in 1948. In 1979, Barneby distinguished a new variety, *A. cremnophylax* var. *myriorrhaphis* after plants were discovered by Ralph Gierisch and associates in 1978 on Buckskin Mountain in Arizona. The typical form then became *A. cremnophylax* var. *cremnophylax*.

On December 15, 1980, the Service published a revised Notice of Review for Native Plants in the Federal Register (45 FR 82480); *A. cremnophylax* was included in that notice as a category 1 species. Category 1 species are those for which the Service presently has sufficient information to support the biological appropriateness of their being listed as endangered or threatened species. The 1985 revision (50 FR 39526) of the 1980 notice included *Astragalus cremnophylax* var. *cremnophylax* in category 1, and moved *Astragalus cremnophylax* var. *myriorrhaphis* to category 3C. Category 3C includes taxa that have proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.

#### Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Astragalus cremnophylax* var. *cremnophylax* Barneby (sentry milk-vetch) are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** The population of sentry milk-vetch occurs at one of the scenic canyon viewpoints along the West Rim Drive at Grand Canyon National Park. During the summer months, a shuttle bus brings visitors to the area where they disembark in the paved parking lot. At other times, visitors may drive their own vehicles to this site. At all times of the year, this area can be reached by walking or hiking. Not all visitors use the paved walkway that transects the sentry milk-vetch's habitat. The area is flat, and many visitors walk from the parking lot directly to the rim, thus trampling any or all of the vegetation. The 1988 survey showed that 65 percent of all plants in the population had experienced some degree of trampling. More than half of

all plants (51.4 percent) experienced severe trampling. Data from 1989 indicates the percent of trampled plants increased, as did the percent of plants showing the effects of severe trampling. The high centers of the mats are the first to show the effects of trampling.

The paved trail and related construction activities probably resulted in the loss of habitat and destruction of plants. Removal of this paved surface and rerouting the trail and visitors around the population may increase and improve the habitat.

Trampling may affect the plants and population stability in a number of ways. Observations indicate that foot traffic has uprooted seedlings and mature plants with decreased vigor. Repeated foot-falls on individual plants may contribute to decreased productivity and decreased flower and fruit production, which may eventually affect recruitment. Degradation of the habitat by foot traffic is evidenced by the informal trails formed by visitors, the smoothness of the limestone caused by the abrasive action of shoes, and the soil loss in the area. If the decline in plant vigor and habitat continues, further declines in population size may occur.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* None known. Because of its rarity, *Astragalus cremnophylax* var. *cremnophylax* is of interest to botanists and other rare plant enthusiasts. Therefore, take is a minor but present threat.

C. *Disease or predation.* None apparent.

D. *The inadequacy of existing regulatory mechanisms.* This species is protected by National Park Service (NPS) regulations, as are all plant species within the park. The NPS constructed fences that alleviate some of the foot traffic. However, park visitors tend to disregard the fences, particularly those fences that separate them from the canyon rim.

Sentry milk-vetch is protected by the Arizona Native Plant Law.

E. *Other natural or manmade factors affecting its continued existence.* The number of seedlings produced per year seems to be small and their mortality is high. Seedling numbers may be less than predicted for a number of reasons. Seed production may be limited by hard frosts and freezes during the flowering/fruiting period, a situation that occurred in 1988. Poor seed dispersal may also affect the number of seedlings. The tiny orange seeds are inconspicuous and probably not an attractive food item for birds and mammals. Continuing the annual inventory of the monitoring plots

may help determine whether or not natural recruitment levels are sufficient to maintain the population.

Any undue publicity directed toward this species could make it susceptible to collection or increased visitation. Many places in the park have signs telling visitors the names and natural history of certain plants; this type of publicity may be detrimental to the survival of this rare endemic.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Astragalus cremnophylax* var. *cremnophylax* as endangered. With the only known population in decline, the species warrants protection under the Act. Endangered status seems appropriate because of the imminent serious threat of trampling facing the population. Critical habitat is not being designated for the reasons discussed below.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent practicable and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. No direct attention should be drawn toward the species or its location. Any type of publicity on this species could make it susceptible to increased visitation or collection, which would be detrimental to the survival of this rare endemic (O'Brien 1984). As discussed under Factors A and B in the Summary of Factors Affecting the Species, *Astragalus cremnophylax* var. *cremnophylax* is threatened by taking, an activity difficult to enforce against and only regulated by the Act with respect to plants in cases of (1) removal and reduction to possession of listed plants from lands under Federal jurisdiction, or their malicious damage or destruction on such lands; and (2) removal, cutting, digging up, or damaging or destroying in knowing violation of any State law or regulation, including State criminal trespass law. Such provisions are difficult to enforce, and publication of the critical habitat description and map would make *A. cremnophylax* var. *cremnophylax* more vulnerable and increase enforcement problems. The NPS has been notified of the location and importance of protecting this species' habitat, and has already initiated recovery actions. Protection of this species' habitat will be

addressed through the recovery process and through the Section 7 jeopardy standard. Therefore, it would not now be prudent to determine critical habitat for *A. cremnophylax* var. *cremnophylax*.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies 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 being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service 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. If a species is listed subsequently, section 7(a)(2) 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 must enter into formal consultation with the Service.

The NPS has jurisdiction over the only known habitat for this species. Federal activities that could impact *Astragalus cremnophylax* var. *cremnophylax* include, but are not limited to, keeping the viewpoint parking lot open to vehicular traffic, which allows large numbers of visitors to trample the population, and possible future trail improvement or construction at the viewpoint.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that

apply to all endangered plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale this species in interstate or foreign commerce, or to remove and reduce to possession the species from areas under Federal jurisdiction. In addition, for listed plants, the 1988 amendments (Pub. L. 100-478) to the Act prohibit the malicious damage or destruction on Federal lands and the removal, cutting, digging up, or damaging or destroying of listed plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances.

It is anticipated that few trade permits would ever be sought or issued because the species is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, P.O. Box 3507, Arlington, VA 22201 (703/358-2104).

**Public Comments Solicited**

The Service intends 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) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;
- (2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;
- (3) Additional information concerning the range, distribution, and population size of this species; and
- (4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor (See ADDRESSES).

**National Environmental Policy Act**

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to Section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 24, 1983 (48 FR 49244).

**Reference Cited**

McDougall, W.B. 1964. Grand Canyon wildflowers. The Museum of Northern Arizona, Flagstaff.  
 O'Brien, S. 1984. Status of *Astragalus cremnophylax* and recommendations to protect it. Unpubl. report to Grand Canyon National Park. 6 pp.  
 Phillips, A.M., III, B.G. Phillips, N. Brian, L.T. Green III, and J. Mazzoni. 1982. Status report, *Astragalus cremnophylax* Barneby. U.S. Fish and Wildlife Service, Albuquerque, NM. 16 pp.

**Author(s)**

The primary authors of this proposed rule are Sonja Jahrsdoerfer, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972) and Sue Rutman (See ADDRESSES).

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Fish, Marine mammals, Plants (agriculture).

**Proposed Regulation Promulgation**

**PART 17—[AMENDED]**

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below.

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

**Authority:** 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1543; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under the family Fabaceae, to the List of Endangered and Threatened Plants:

**§ 17.12 Endangered and threatened plants.**

\* \* \* \* \*  
 (h) \* \* \*

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Fabaceae—Pea family:						
<i>Astragalus cremnophylax</i> var. <i>cremnophylax</i>	Sentry milk-vetch	U.S.A. (AZ)	E		NA	NA

Dated: September 25, 1989.  
 Richard N. Smith,  
 Acting Director, Fish and Wildlife Service.  
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