

SPECIES FACT SHEET

Fabaceae (Legume family)

Sentry Milkvetch*Astragalus cremnophylax* var. *cremnophylax***Habitat and ecology**

Sentry milkvetch (*Astragalus cremnophylax* var. *cremnophylax*) is known from three populations on the South Rim of Grand Canyon National Park. One of the populations was at a popular overlook site where it was trampled by visitors trampled. In 1990, the park built fences around the plants, which protected them from most trampling. In 2008, the park removed the parking lot at the overlook site and restored it to create more habitat for the sentry milkvetch. The park plans to introduce greenhouse-grown seeds and plants to this expanded area, but growing the plants outside of their natural habitat has been difficult because of their very specific habitat requirements. Sentry milkvetch occurs in shallow soil pockets in the pure white, highly porous sections of Kaibab limestone. It grows on large platforms of limestone within the pinyon-juniper forests on canyon rim. The soil, hydrology, and chemical composition of the bedrock where sentry milkvetch grows may be unique. As of 2008, an estimated 725 plants were known to exist in the wild.

Description

Sentry milkvetch is a perennial that forms mats from one



Counties where Sentry milkvetch occurs (from <http://www.fws.gov/species/>).

RARE PLANT

Sentry milkvetch is hard to grow in a greenhouse because of its specific habitat requirements.

to ten inches in diameter. Its stems are short, creeping, and covered with silvery hairs. The leaves, which are 0.1 to 0.5 inches long, are divided into five to nine minute leaflets. During March through April and September through November, pale purple flowers with white-tipped wings form. The fruits are densely hairy, egg-shaped pods that can remain attached to the plant for months. Seedlings tend to germinate near the parent plant.

Conservation status and threats

The U.S. Fish and Wildlife Service has listed sentry milkvetch as an endangered species since December 5, 1985. Arizona lists it as critically imperiled.

The major threat to this species has been trampling by visitors. By fencing one of the populations and removing the adjacent overlook parking lot, the park has removed that threat, but sentry milkvetch populations remain vulnerable. Because so few plants exist, the populations are suffering from inbreeding, which is causing seed embryos to abort before seeds can develop. The genetic similarity among the



plants, in addition to their specific habitat requirements, also means that the populations may not be able to adapt to future changes, like climate change. Monitoring of the plants since 1988 has shown that many plants die during dry years, partially because of drought stress, but also because rock squirrels dig up the roots.

Related species

Sentry milkvetch is one of three varieties of the species *Astragalus cremnophylax*. The other two varieties, Marble Canyon milkvetch (var. *hevronii*) and cliff milkvetch (var. *myriorrhaphis*), occur at other locations in northern Arizona and are larger than sentry milkvetch.

References

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