

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Plant Abstract**

**Element Code:** PDFAB0FB70  
**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Astragalus nutriosensis*  
**COMMON NAME:** Nutrioso milk-vetch, Apache milkvetch  
**SYNONYMS:**  
**FAMILY:** Fabaceae (Leguminosae)

**AUTHOR, PLACE OF PUBLICATION:** M.J. Sanderson, Madroño 35(4): 325-329. 1988.

**TYPE LOCALITY:** Apache County, on hillside northeast of intersection of AZ Highway 666 and Apache County Highway 116, about 9.5 km N of Nutrioso. Alt. 2270 m. Sanderson, 25 May 1987.

**TYPE SPECIMEN:** Holotype: ARIZ. M. Sanderson 551, 25 May 1987. IT: NY.

**TAXONOMIC UNIQUENESS:** The genus *Astragalus* contains 1,500 species occurring throughout the subtropical and temperate parts of world; 350 occur in North America. It is the largest genus of flowering plants in Arizona, with over 100 species within the state (Kearney and Peebles 1951).

**DESCRIPTION:** Dwarf, acaulescent (no stems, laying flat on the ground), perennial herb from a short but broad, knotty caudex on a simple taproot; 3.5-7.5 cm (1.4-3.0 in.) tall, 7.0-10.0 cm (2.8-4.0 in.) wide. The herbage (except tops of leaflets) is ash gray and covered with spreading hairs. Leaves are pinnately compound, 3.0-11.0 cm (1.2-4.4 in.) long, petiole half that length. Small leaflets of 5-9 pairs are 4.0-8.0 mm long, glabrescent-green above. Inflorescence does not ascend above the leaves, being nested in the base of the plant, and bears 2-5 flowers that point upward. Petals are white with pink-purple veins or tips. Banner is 2.0-2.3 cm (0.8-0.9 in.) long and 0.6 cm wide and barely recurved. The wings are 1.9-2.2 cm (0.7-0.9 in.) long; keel usually shorter than wings. Pods are 0.8-1.0 cm long, broad, a little incurved, terete in cross-section, bilocular, and papery. Dehiscence by fracture of the pod into two closed, carpel-like halves, the seeds ultimately spilling through the septum walls.

**AIDS TO IDENTIFICATION:** Positive identification of this species requires flowers, fruit and vegetation. *Astragalus nutriosensis* is distinguished from *A. mollisimus* var. *matthewsii* by a much smaller pod, an almost sessile inflorescence with few flowers, and generally paler flowers with barely recurved banners (Falk and Jenkins et al., 2001).

**ILLUSTRATIONS:** Line drawing (Madroño, 1988: 35(4): 326).

Color photo of isotype collection (Sanderson NY 5569, in NYBG web site)

[http://scisun.nybg.org:8890/searchdb/owa/wwwcatalogrenz.detail\\_list](http://scisun.nybg.org:8890/searchdb/owa/wwwcatalogrenz.detail_list))

Line drawing (Falk and Jenkins et al., 2001)

Color photos of flower and habitat (Marc Baker, *in* Falk & Jenkins et al., 2001)

Color photo of plant in flower (USFS, *in* Falk & Jenkins et al., 2001)

Line drawing of plant and flower (*in* Sivinski 1999,  
<http://nmrareplants.unm.edu/drawings/astnut.htm>)

**TOTAL RANGE:** Restricted to eastern Arizona, Apache County, in the Rio Nutrioso Basin, and adjacent New Mexico, in northwestern Catron County.

**RANGE WITHIN ARIZONA:** Eastern Arizona, Apache County. As of 1991 known only from two localities along Nutrioso Creek between Springerville and the town of Nutrioso.

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Herbaceous perennial.

**PHENOLOGY:** Flowers late-April to May; fruits by late-May to June.

**BIOLOGY:** Apparently subject to water stress. Population size appears to be related to spring moisture, at least in part.

**HABITAT:** On basaltic mesa tops in gravelly loam soils in open grassland, sometimes among pinyon and juniper, 7040-7800 ft (2145-2375 m) elevation, and on volcanic silty clay soils in gently sloping hillsides.

**ELEVATION:** 7,040 - 7,780 ft. (2147 - 2373 m).

**EXPOSURE:** Open.

**SUBSTRATE:** Basaltic mesa tops in gravelly loam soils. In New Mexico, found on volcanic silty clay soils (Sivinski 1999).

**PLANT COMMUNITY:** Open grassland, sometimes among pinyon and juniper on slopes. Associated with *Bouteloua gracilis* and *Gutierrezia sarothrae*. Sympatric with *Oxytropis lambertii*, *Astragalus humistratus*, *A. brandegei* and *A. mollissimus* var. *matthewsii* (Sanderson 1988).

**POPULATION TRENDS:** According to Sivinski (1999), *Astragalus nutriosensis* is "A narrow endemic that has apparently evolved from *A. mollissimus* via *A. mollissimus* var. *matthewsii*. Populations within its range appear to be sporadically distributed. Isely (1998) does not record the species from New Mexico."

**SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None (USDI, FWS 1996)  
[C2 USDI, FWS 1993]

**STATE STATUS:** Salvage Restricted (ADA, ANPL 1999)  
[Salvage Restricted (ADA, ANPL 1993)]

**OTHER STATUS:** Not Forest Service Sensitive (USDA, FS  
Region 3, 1999)  
[Forest Service Sensitive, USDA FS Region  
3, 1990]

**MANAGEMENT FACTORS:** Extremely limited distribution. Not palatable to livestock.  
It may be poisonous as is its close relative *A. mollissimus* and could become a target for  
noxious weed eradication programs. Its response to range fire has not been studied.

**CONSERVATION MEASURES TAKEN:** Monitoring plots established by Pat  
Gallagher and USFS in 1990 and 1991.

**SUGGESTED PROJECTS:** Status surveys are needed.

**LAND MANAGEMENT/OWNERSHIP:** USFS - Apache-Sitgreaves National Forest; AGFD  
– Sipe White Mountain Wildlife Area; State Land Department; Private.

**SOURCES OF FURTHER INFORMATION****REFERENCES:**

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Pat Gallagher - Nutrioso, Arizona.  
M.J. Sanderson - New York.

**ADDITIONAL INFORMATION:**

Seasonally strong winds on mesa tops may influence prostrate growth form.

**Revised:** 1990-10-16 (SR)  
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