

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

**Plant Abstract**

**Element Code:** PDFAB0F370

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Astragalus endopterus* (Barneby) Barneby

**COMMON NAME:** Sandbar milk-vetch

**SYNONYMS:** *Astragalus wootonii* Sheldon var. *endopterus* Barneby

**FAMILY:** Fabaceae

**AUTHOR, PLACE OF PUBLICATION:** *Astragalus endopterus* (Barneby) Barneby, Mem. New York Bot. Gard. 13: 879. 1964. *Astragalus wootonii* var. *endopterus* Barneby, Amer. Midl. Naturalist 41: 498. 1949.

**TYPE LOCALITY:** Sandy bed of the Little Colorado River, at Cameron, Coconino County, Arizona, alt. 3700 ft.

**TYPE SPECIMEN:** HT: CAS-337308. Ripley & Barneby 8491, 5 June 1947.

**TAXONOMIC UNIQUENESS:** *Astragalus* is a species-rich genus, with more than 2000 species in the genus currently known worldwide. *Astragalus endopterus* is 1 of 350 species in the genus *Astragalus* in North America. It has been compared with *A. wootonii* and *A. allochrous*, however neither of these has a pod with a funicular flange 2-4 mm wide, bearing 28-30 seeds.

**DESCRIPTION:** **Plants annual or biennial**, coarse, 10-20 cm, strigulose; from slender taproot. **Stems** few, erect or ascending, strigulose, cinereous. **Leaves** 4.5-8.5 cm; stipules distinct, 1-2.5 mm, submembranous; leaflets 7-11, blades lanceolate, oblong, or narrowly oblong-elliptic, 8-16 mm, apex obtuse or truncate, surfaces strigulose abaxially, glabrescent adaxially. **Peduncles** ascending or incurved, 1.5-2 cm. **Racemes** 4-7-flowered, flowers ascending becoming declined; axis 1.5-3 cm in fruit; bracts 1.5 mm; bracteoles 0. **Pedicels** 1-2 mm. **Flowers** 6-6.3 mm; calyx campanulate, 4 mm, strigulose, tube 2.1-2.3 mm, lobes subulate, 1.8-2 mm; corolla whitish faintly lined pink; banner recurved through 80; keel 4.3-4.4 mm, apex bluntly deltate, obscurely beaklike. **Legumes** spreading to declined, pale green and faintly brown-mottled, becoming stramineous, straight, subsymmetrically ovoid or ovoid-ellipsoid, bladderly inflated, slightly obcompressed, 20-27 x 11-15 mm, thin, lustrous, finely strigulose, hairs straight, appressed; seed-bearing flange 3-4 mm wide. **Seeds** 28-30 (modified from Welsh 2023).

**AIDS TO IDENTIFICATION:** Differs from *A. wootoni* var. *typicus*, in that var. *typicus* has leaflet pairs of 6 to 9; peduncles up to 5 cm long, stout, borne in the median and upper axils; and pods that are chartaceous, seldom mottled, the ventral suture filiform or the wing less than

1 mm wide. *A. endopterus* is smaller in all its parts than *A. allochrous*, but otherwise very similar. (Kearney and Peebles, 1951). To this, we can add that *A. endopterus* has more ovules (28-30) than either *A. allochrous* (10-21) or *A. wootonii* (10-21).

**ILLUSTRATIONS:**

Color photo of specimen, New York Botanical Garden Steere Herbarium (NY)

Color photo of specimen, Herbarium of Rancho Santa Ana Botanic Garden and Pomona College (RSA-POM)

Color photos of plants and habitat:

<https://swbiodiversity.org/seinet/taxa/index.php?taxon=4099>

**TOTAL RANGE:** In the valley of the Little Colorado River from 42 kms southeast of Cameron, 20 kms downstream of Cameron, and northwards 37 kms to Willow Springs, Moenave, Coconino County, Arizona.

**RANGE WITHIN ARIZONA:** See “Total Range.”

**SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Annual forb/herb.

**PHENOLOGY:** Flowers from May to June (-Sep.). In 2023, few plants survived the drying of early summer to have a renewed blooming period during late summer/early fall.

**BIOLOGY:** Ants may be among the pollinators.

**HABITAT:** Sands proximal to the Chinle Formation.

**ELEVATION:** 3,900 – 4,780 ft (1190–1457 m).

**EXPOSURE:** any

**SUBSTRATE:** Sands, often poorly sorted, perhaps deposited as sheetwash below (or near) the Chinle Formation. Sometimes on windblown sands. Apparently sometimes washed down to the Little Colorado River and on river banks.

**PLANT COMMUNITY:** Great Basin Desert Scrub; common associates are *Parryella filifolia*, *Oenothera pallida*, *Poliomintha incana*, *Wislizenia refracta*, *Sporobolus* spp., *Mentzelia longiloba*, *Sphaeralcea* spp., *Ipomopsis gunnisonii*, *Isocoma rusbyi*, *Atriplex obovata*.

**POPULATION HISTORY AND TRENDS:** Unknown, extant as of 2023

**SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None  
**STATE STATUS:** None  
**OTHER STATUS:** Not Forest Service Sensitive (USDA, FS Region 3, 2007, 2013)  
[Forest Service Sensitive (USDA, FS Region 3, 1999)]  
Navajo Nation Status: none

**MANAGEMENT FACTORS:** *Astragalus* species are known to produce loco disease in horses, cattle, and sheep (Kearney and Peebles, 1951). Animals do not like it, and usually avoid it except when hungry for green feed.

**PROTECTIVE MEASURES TAKEN:** Seed collection and banking in 2023.

**SUGGESTED PROJECTS:** Surveys for this species should be conducted in the Little Painted Desert northeast of Winslow. In 2021, this plant was reported as extinct (Knapp et al. 2021), however, recent surveys have been conducted (Rink and Embrey 2023) with abundant positive findings, so the extinction hypothesis has been shown to be in error.

**LAND MANAGEMENT/OWNERSHIP:** BIA – Navajo Nation.

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

- Kearney, T.J. and R.H. Peebles. 1951. Arizona Flora. University of California Press, Berkeley, California. 1,085 pages.
- Knapp, W. M., A. Frances, R. Noss, R.F.C. Naczi, A. Weakley, G.D. Gann, B.G. Baldwin, J. Miller, P. McIntyre, B.D. Mishler, G. Moore, R.G. Olmstead, A. Strong, K. Kennedy, B. Heidel, and D. Gluesenkamp. 2021. Vascular plant extinction in the continental United States and Canada. *Conservation Biology* 35(1):360-368.  
<https://doi.org/10.1111/cobi.13621>
- Rink, G.R. and T. Embrey. 2023. Survey for *Astragalus endopterus* (Barneby) Barneby (Fabaceae) Coconino County, Arizona June, 2023. Section 6 Final Report Reference # 2022-2024-09, unpublished report for the US Fish and Wildlife Service.
- USDA, Forest Service Region 3. 1999. Regional Forester's list of sensitive animals - 7/21/1999. U.S. Forest Service. 7 pages.
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[https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3806395.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3806395.pdf) (accessed June 28, 2023).

Welsh SL. 2023. *Astragalus*. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 22+ vols. New York and Oxford. Vol. 11.2.

**MAJOR KNOWLEDGEABLE INDIVIDUALS:**

Glenn Rink, Northern Arizona University, Flagstaff, Arizona.  
Teague Embrey, Ignem Feram LLC, Tucson, Arizona.

**ADDITIONAL INFORMATION:**

This species was originally identified as a variety of *A. wootoni*, which is known to cause loco disease in sheep, horses, and cattle.

**Revised:** 2002-07-30 (MEP)  
2002-08-02 (SMS)  
2004-08-12 (SMS)  
2020-10-30 (TME)  
2023-09-06 (GRR and TME)

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Arizona Game and Fish Department. 20XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.