

ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

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**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Astragalus xiphoides* (Barneby) Barneby  
**COMMON NAME:** Gladiator milkvetch, Sword milkvetch  
**SYNONYMS:** *Astragalus convallarioides* var. *xiphoides* Barneby  
**FAMILY:** Leguminosae

**AUTHOR, PLACE OF PUBLICATION:** *Astragalus xiphoides* (Barneby) Barneby, Amer. Midl. Nat. 55(2): 477. 1956. *Astragalus convallarius* var. *xiphoides* Barneby, Leaflets of Western Botany 5(2): 30. 1947.

**TYPE LOCALITY:** "Arizona: on detrital clay banks 5 miles northeast of Holbrook, Navaho Co., alt. 5200 ft., ..." Ripley & Barneby 5246.

**TYPE SPECIMEN:** HT: CAS-324951. Ripley & Barneby 5246, 15 May 1943. IT: GH, 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:** Herbaceous perennial with 30-45 cm (12-18 in) tall stems. Leaves few, often absent, 2-13 cm (0.8-5 in.) long when present, with 1 to 2 pairs of leaflets (often completely lacking). Leaflets linear, 3-17 mm long. Inflorescence a loosely flowered raceme, with 7 to 17 yellowish-white flowers (straw-colored), 9 mm long. Pods straight, 2.5-4.0 cm (1.0-1.6 in.) long, 4-6 mm wide.

**AIDS TO IDENTIFICATION:** *Astragalus ceramicus* has an extensive network of pallid, creeping rhizomes; mostly pink-tinged or pink-veined flowers; and a highly mottled, inflated pod. *A. lonchocarpus* differs in its most abundant leaflets; larger, yellow to cream colored flowers, 13.5-19.5 mm long vs. up to 9 mm; stipitate pod compressed contrary to the sutures. (Falk and Jenkins et al., 2001).

**ILLUSTRATIONS:** Line drawing (USDI, FWS)  
Color photos (M.F. Wojciechowski, in  
<http://ginger.ucdavis.edu/astragalus/images/>)  
Line drawing (M.S., in Falk and Jenkins et al., 2001)

Color photos of plant (Bill Hevron/NNHP, *in* Falk & Jenkins et al., 2001)

Color photo of habitat (Sue Rutman, *in* Falk & Jenkins et al., 2001)

**TOTAL RANGE:** Endemic to Arizona, from the Little Colorado River Valley in the vicinity of Holbrook, Navajo County. Extreme eastern Coconino County near Winslow; Navajo and Apache counties surrounding and within Petrified Forest NP, north to near Greasewood in the Navajo Reservation.

**RANGE WITHIN ARIZONA:** See "Total Range."

### **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Herbaceous perennial.

**PHENOLOGY:** Flowers late April to early June; can flower a second time in August.

#### **BIOLOGY:**

**HABITAT:** Grasslands and alluvial plains from 5,000-6,000 ft (1525-1830 m) elevation. Known to grow on Chinle and Moenkopi formations, and is generally associated with badlands of broken sandstone and clay bluffs, in washes, floodplains, or complexes of small arroyos.

**ELEVATION:** 4,950 – 6,000 ft. (1510 - 1830 m).

**EXPOSURE:** Various. Collected on SE and NE exposure.

**SUBSTRATE:** Clay loam, derived from shale with a gypsiferous component. Collected on gravelly clay loam developed on Chinle shale outcrop

**PLANT COMMUNITY:** Plains Grassland and Great Basin Desertshrub. Dominant plants include: *Eriogonum* (buckwheat), *Atriplex confertifolia* (shadscale), and *Hilaria jamesii* (=Pleuraphis jamesii, James' galleta). Associated species include: *Artemisia* sp. (sagebrush), *Artemisia bigelovii* (flat sagebrush), *Atriplex* sp. (saltbush), *Atriplex canescens* (four-wing saltbush), *Astragalus ceramicus* (painted milkvetch), *A. lonchocarpus* (rushy milkvetch), *Bouteloua gracilis* (blue gramma), *Ceratoides lanata* (=Krascheninnikovia lanata, winter-fat), *Chrysothamnus nauseosus* (=Ericameria nauseosa, rabbit-bush), *Ephedra torreyana* (Torrey's Mormon-tea), *E. viridis* (green Mormon-tea), *Gutierrezia* sp. (snakeweed), *Hilaria* sp. (curly-mesquite), *Hymenoxys* sp. (butterweed), *Juniperus* sp. (juniper), *Leucelene ericoides* (=Chaetopappa ericoides, rose-heath), *Muhlenbergia* sp. (muhly), *Opuntia* sp., *Parryella filifolia* (narrowleaf dunebroom), *Sporobolus* sp. (dropseed), *Stipa* sp. (needlegrass), *Yucca* sp., and *Yucca angustissima* (fine-leaf yucca). (SEINet accessed 2005).

**POPULATION TRENDS:** Unknown.

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None (USDI, FWS 1999)  
[C2 (USDI, FWS 1993)]  
[C1 (USDI, FWS 1990)]  
[C1 USDI, FWS 1985]

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

**OTHER STATUS:** None

**MANAGEMENT FACTORS:** May include trampling due to construction, buried cable corridor and other human activities.

**PROTECTIVE MEASURES:**

**SUGGESTED PROJECTS:**

**LAND MANAGEMENT/OWNERSHIP:** BIA – Navajo Nation and Navajo Hopi Joint Use Area; BLM – Safford Field Office; NPS – Petrified Forest National Park; State Land Department; Private.

## **SOURCES OF FURTHER INFORMATION**

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- Carl Bowman - Petrified Forest National Park, AZ.  
Tom Van Devender - Arizona-Sonoran Desert Museum, Tucson, AZ.  
J. Rominger - Retired, Northern Arizona University, Flagstaff, AZ.  
Art Phillips - Private consultant, Flagstaff, AZ.  
Sue Rutman - National Park Service, Organ Pipe National Monument, AZ.

**ADDITIONAL INFORMATION:**

Van Devender and Butterwick: searched for *A. xiphoides* at Rominger's 1976 locality (5 miles west of Winslow, north of I-40). Presumed extirpated due to construction of roads and livestock operations.

**Revised:** 1990-10-15 (SR)  
1991-10-20 (BKP)  
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