

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

Plant Abstract

Element Code: PDPGL021A0

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Polygala piliophora*
COMMON NAME: Huachuca Mountain Milkwort
SYNONYMS:
FAMILY: Polygalaceae

AUTHOR, PLACE OF PUBLICATION: Blake, Sidney Fay. North American Flora
25(4): 320-321. 1924.

TYPE LOCALITY: Arizona: near Fort Huachuca.

TYPE SPECIMEN: US National Herbarium, Smithsonian Institution: US 108999 (=213259)
Holotype. T.E. Wilcox (#SN). August 1894.

TAXONOMIC UNIQUENESS: *Polygala* is a large genus with some 500 species of herbs, shrubs and trees worldwide in temperate and tropical regions. NatureServe lists 55 species in the United States with an additional 23 varieties. Arizona has 13 species and one other variety. *P. piliophora* is one of three species that occur only in the State.

DESCRIPTION: Stems several, suffrutescent below, 1-3 dm. high, densely and subcanescently incurved-puberulous; lower leaves oblanceolate, the middle and upper linear-lanceolate or linear-elliptic, 9-17 mm. long, 1.8-2.8 mm. wide, acute to acuminate at each end, densely incurved-puberulous, thickish, 1-nerved, involute; peduncles very short; racemes loose below, dense above, the axis 3.2-5 cm. long; pedicels 1.5-2 mm. long; flowers apparently ochroleucous; sepals ovate, obtuse or acute, 2.2-2.5 mm. long; wings oval to obovate, 4-4.2 mm. long, 2-2.8 mm. wide, obtuse to rounded, cuneate at base, somewhat vesicle-bearing, incurved-puberulous chiefly along costa and towards apex, incurved-ciliolate; keel glabrous, 3.5 m. long; capsule ovate-oval, somewhat narrowed above, emarginated, rounded at base, incurved-puberulous and -ciliolate, 5.8-8.5 mm. long; seed short-pointed at base, pilose, 4.3 mm. long; aril pedicellate by the pointed base of seed, 0.4-0.5 mm. high, 1.3 mm. long dorsally, obtuse-lanceolate as seen from above, nearly horizontal, subentire, the densely pilose umbo about 0.3 mm. high, the anterior portion of the scarious margin subtruncate, vizer-like, the posterior portion shorter, narrower, acutish (Blake 1924).

AIDS TO IDENTIFICATION: There are only two genera in the Polygalaceae family: *Polygala* and *Monnina*. *Polygala* has a 2-celled ovary, a flat, dehiscent capsule and seeds that are usually carunculate (Kearney and Peebles 1960).

P. piliophora is distinguished from the other species found in Arizona by the following characteristics: keel petal not crested or beaked, at most apiculate; flowers not more than 6 mm. long; leaves and capsules not gland dotted; leaves more or less dimorphic, the lower ones broader and shorter than the upper ones; flowers few or somewhat numerous in loose, terminal racemes; plants herbaceous, of very similar appearance; capsules ciliolate; caruncle of the seed with the depth of the entire or denticulate, scarious, marginal portion less than the height of the umbo; capsules persistently more or less pubescent on the sides; middle and upper leaves linear-lanceolate or linear-elliptic, 2-3 mm. wide, the lower leaves oblanceolate (Kearney and Peebles 1960).

ILLUSTRATIONS:

Herbarium Mount: http://media.eol.org/content/2012/04/27/11/81491_orig.jpg.

TOTAL RANGE: Arizona: Cochise and Santa Cruz Counties.

RANGE WITHIN ARIZONA: Known from only two locations. The original 1894 holotype collection was made near Fort Huachuca (Cochise County), and recollected from the SE portion of the Huachucas in 2012. A second location, NW of the Mustang Mountains in Santa Cruz County was made in 1940.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Small, perennial herbaceous plant.

PHENOLOGY: A collection in mid-July noted both flowers and fruits.

BIOLOGY:

HABITAT: Not well described. One collection in a canyon, the other from a grassland.

ELEVATION: 4900 – 5250 feet (1495-1600m) based on two Arizona collections.

EXPOSURE: Not specified.

SUBSTRATE: Not specified.

PLANT COMMUNITY: One of the two Arizona collections specified “grassland, below the Yucca belt.”

POPULATION HISTORY AND TRENDS: Unknown for Arizona. Two collections from the Huachuca Mountains span more than 100 years; with the 2nd locality being

documented midway through this period. Due to the most recent 2012 collection, NatureServe now considers this plant to be critically imperiled.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.
STATE STATUS: None.
OTHER STATUS: None.

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None.

SUGGESTED PROJECTS: Determine if *Polygala piliophora* deserves to remain as a recognized species, or whether it is a form or hybrid of other species (see Additional Information, below).

LAND MANAGEMENT/OWNERSHIP: One of the collections is from a private land holding within Coronado National Forest, the other is also from private land.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Blake, Sidney Fay. 1924. Polygalales. Flora of North America. Vol 25, Part 5. P. 360. New York Botanical Garden.
- Kearney, Thomas H. and Robert H. Peebles. 1960. Arizona Flora, 2nd edition with Supplement. University of California Press, Berkeley. 1085 p.
- JStor|Global Plants, accessed 1/13/2015,
<http://plants.jstor.org/stable/10.5555/al.ap.specimen.us00108999>.
- NatureServe, Online Encyclopedia of Life, accessed 1/07/2015,
<http://explorer.natureserve.org/servlet/NatureServe?searchSciOrCommonName=Polygala&x=8&y=6>.
- Tropicos, accessed 1/13/2015, <http://www.tropicos.org/Name/25900455>.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Tom Wendt, University of Texas Herbarium, Austin Texas.

ADDITIONAL INFORMATION: The species is accepted taxonomically by Kearney and Peebles (1960) and by Kartesz (1995 and 1999), but not by the USFWS (1985 Fed Reg "3b" status, as cited by NatureServe. In correspondence between T Van Devender (Arizona

Natural Heritage Program) and Thomas Wendt (currently with the University of Texas Herbarium in Austin, and who studied the genus *Polygala* for his dissertation) in June 1980, Wendt suggested that *P. piliophora* is a form of, or hybrid between, the common *P. barbeyana* (including *P. longa*, *P. racemosa* and *P. reducta*) and *P. obscura* (including *P. orthotricha*).

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