

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDAP0030E0

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Amsonia peeblesii* Woods.

COMMON NAME: Peebles' blue-star, Peebles blue star, Peebles' bluestar

SYNONYMS:

FAMILY: Apocynaceae

AUTHOR, PLACE OF PUBLICATION: Woodson, Bull. Torrey Bot. Club 63: 35. 1936.

TYPE LOCALITY: Near Leupp, Coconino County, Arizona, USA.

TYPE SPECIMEN: HT: MO. T.H. Kearney and R.H. Peebles 9568, 27 May 1934. IT: US-1624341.

TAXONOMIC UNIQUENESS: One of 16 species of *Amsonia* in a genera of 37. (McLaughlin, 1982; USDA, NRCS 2004); 1 of 6 species of in Arizona. McLaughlin (1993) reports 14 species of *Amsonia* in the U.S. and northern Mexico, and 1 species in Japan.

DESCRIPTION: Robust, glabrous, herbaceous perennial, 40-90 cm (16-35 in) tall, with a milky juice. The stems are much branched below the inflorescence, the latter barely surpassing the foliage. Both upper and lower leaves are 3-7 cm (1.2-2.8 in) long; the upper leaves are linear, 1-2 mm wide, while the lower leaves are oblong-linear, 4-9 mm wide. The calyx lobes of the flower are ovate to linear, 2-7 mm long. The corolla is trumpet shaped, white or light blue, slightly constricted at the throat, broadest at the apex; the tube is 13-19 mm long, and the lobes are 5-10 mm long. The stamens are included in the corolla tube, the anthers not connivent (converging), the ovules numerous. The fruit is terete, 2-10 cm (0.8-4 in) long. Seeds are cylindrical, corky, 8-11 x 1.5-2.5 mm, naked. (McLaughlin 1993; Falk, Jenkins et al., 2001).

AIDS TO IDENTIFICATION: *Amsonia peeblesii* can be confused with the glabrous form of *A. tomentosa* var. *stenopylla*. *A. peeblesii* has much larger flowers than the latter (13-19 mm long vs. 7-12 mm long), and the follicles of *A. peeblesii* are smoothly cylindrical while the follicles of the latter are moderately constricted between the seeds. (Falk, Jenkins et al., 2001).

ILLUSTRATIONS: Line drawing (Falk, Jenkins et al., 2001).

Color photos of flowers and plant in habitat (Falk, Jenkins et al., 2001).

Color photo of plants in habitat (*In*

<http://genome-lab.ucdavis.edu/People/RickTopinka/peeblesii.htm>)

TOTAL RANGE: Except for a collection at Lee's Ferry from 1890, the plant occurs entirely within the Little Colorado River watershed in Coconino, Apache, and Navajo counties, Arizona.

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowers May - July; leaves turn golden color in fall.

BIOLOGY: Pollinators unknown, but possibly hawkmoths (Sphingidae) because of the white color and tubular shape of the corolla.

HABITAT: Sandy desert washes and gravelly hilltops, in grasslands and cold desert scrub.

ELEVATION: 4,000 – 6,000 ft (1220-1830 m).

EXPOSURE:

SUBSTRATE: Ranges from strongly alkaline sedimentary conglomerates to volcanic cinders, along with sandy desert washes, sandstone. Shinarump formation.

PLANT COMMUNITY: Great Basin Desert scrub, Plains Grassland, and Great Basin Shrub-grassland communities. Associated species may include: *Achnatherum hymenoides* (Indian mountain-ricegrass), *Amsonia tomentosa* (woolly slimpod), *Arenaria* sp. (sandwort), *Arenaria eastwoodiae* (Eastwood's sandwort), *Artemisia bigelovii* (flat sagebrush), *A. dracunculus* (Dragon wormwood), *A. nova* (black sagebrush), *A. tridentata* (big sagebrush), *Atriplex canescens* (four-wing saltbush), *A. confertifolia* (shadscale), *Bouteloua curtipendula* (side-oats grama), *B. eriopoda* (black grama), *B. gracilis* (blue grama), *Brickellia* sp. (brickell bush), *Chrysothamnus nauseosus* (rabbit-bush), *Cryptantha* sp. (cat's-eye), *Echinocactus polycephalus* (cotton-top cactus), *Encelia frutescens* (bush brittle-bush), *Ephedra torreyana* (Torrey's mormon-tea), *Eriogonum* sp. (buckwheat), *Euphorbia* sp. (spurge), *Fallugia paradoxa* (Apache-plume), *Forestiera neomexicana* (= *F. pubescens* var. *pubescens*, New Mexico Forestiera), *Gutierrezia sarothrae* (broom snakeweed), *Hilaria belangeri* (common curly-mesquite), *Hymenopappus* sp. (woolly-white), *Lycium andersoni* (red-berried desert-thorn), *Opuntia phaeacantha* var. *major* (Mojave cactus), *Pediocactus* sp. (pincushion or hedge-hog cactus), *Rhus trilobata* (sumac), *Salsola kali* (Russian thistle), *Sclerocactus whipplei* (Whipple's fishhook cactus), *Sphaeralcea* sp. (globemallow), *Sporobolus airoides* (Alkali sacaton), *Tiquilia latior* (matted Tiquilia), *Tridens pulchellus* (= *Erioneuron pulchellum*, fluffgrass), *Yucca angustissima* (fine-leaf yucca), and *Zinnia* sp.

POPULATION HISTORY AND TRENDS: Trends unknown. *A. peeblesii* occurs in numerous, isolated, and relatively small populations from one to several hundred plants in a large area of northern Arizona. Half the population occurs on Wupatki National Monument. (Reichenbacher, 1986).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1980]

STATE STATUS: None

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)
[Not Sensitive (USDA, FS Region 3 1990)]
[Forest Service Sensitive (USDA, FS Region 3 1988)]
Group 4 (NNDFW, NESL 2005)

MANAGEMENT FACTORS: Susceptible to trampling near trails in Wupatki N.M, and on the Navajo Nation by horses and sheep.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Basic biological data for this species is almost completely lacking. Data on pollination biology and demographic data may provide some clues to explain the fact that the species only occurs in small isolated populations. (Reichenbacher, 1986).

LAND MANAGEMENT/OWNERSHIP: BIA – Navajo Nation; BLM – Safford Field Office; NPS – Wupatki National Monument; AZ State Land Department; Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Falk, M., P. Jenkins, et al; Arizona Rare Plant Committee. 2001. Arizona Rare Plant Guide. Published by a collaboration of agencies and organizations. Pages unnumbered.
Integrated Taxonomic Information System (ITIS). Retrieved 7/20/2004 from ITIS, <http://www.itis.usda.gov>.
- McLaughlin, S.P. 1982. A revision of the southwestern species of *Amsonia* (Apocynaceae). Annals of Missouri Botanical Garden, vol. 69 no. 2.
- McLaughlin, S.P. 1993. Apocynaceae A. L. Juss. Dogbane Family. Journal Arizona-Nevada Acad. Sci. Vol. 27, Issue 2. pp. 164-168.
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Amsonia peeblesii*

- Woodson. http://mobot.mobot.org/cgi-bin/search_vast. Accessed: 20 July 2004.
- NatureServe. 2004. NatureServe Explorer: An online encyclopedia of life [web application]. Version 3.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: July 20, 2004).
- Navajo Nation Department of Fish and Wildlife. 2005. Navajo Endangered Species List. The Navajo Nation. Window Rock, Arizona. P. 3.
- Reichenbacher, F.W. 1986. Status Report, *Amsonia peeblesii* R.E. Woodson. F.W. Reichenbacher & Associates, Tucson, AZ. 24pp.
- SEINet. Collections Search Result. Accessed 7/20/2004 at <http://seinet.asu.edu/collections/list.jsp>.
- U.S. National Herbarium Type Specimen Register (US). Accessed: 6/19/2002 from <http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>
- USDA, Forest Service Region 3. 1988. Regional Forester's Sensitive Plant Species List.
- USDA, Forest Service Region 3. 1990. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- USDI, Fish and Wildlife Service. 1980. Endangered and Threatened Wildlife and Plants; Review of Plant Taxa for Listing as Endangered or Threatened Species; Notice of Review. Federal Register 45(242): 82486.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants: Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40): 7596-7613.

MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

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