

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

**Plant Abstract**

**Element Code:** PMPOA48220  
**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Muhlenbergia xerophila* C. Goodding  
**COMMON NAME:** Sycamore Canyon Muhly, Weeping Muhly, Sycamore Muhly  
**SYNONYMS:**  
**FAMILY:** Poaceae

**AUTHOR, PLACE OF PUBLICATION:** Goodding, C. 1940. J. Wash. Acad. Sci. 30:19.

**TYPE LOCALITY:** Sycamore Canyon, Santa Cruz County, Arizona.

**TYPE SPECIMEN:** SCS Herbarium (Tucson). L. N. Goodding #M262. 22 September 1937.

**TAXONOMIC UNIQUENESS:** There are approximately 160 species of *Muhlenbergia*, with 44 of these occurring in Arizona (Lehr 1978, Lehr and Pinkava 1980, Lehr and Pinkava 1982). This genus is distributed in North America, South America, and southern Asia (Hickman 1993).

**DESCRIPTION:** Densely tufted perennial. Culms 45-90 cm tall, glabrous or scaberulous; sheaths scaberulous; ligule 2-4 mm long, obtuse; blades involute, 15-50 cm long, 1-1.5 mm wide; panicle open, contracted at maturity, mostly nodding, 15-35 (to 50) cm long, up to 5 cm wide, with capillary, flexuous, spreading branches; usually light brown or tinged with pink; spikelets about 4 mm long; glumes equal or subequal, 2-3 mm long, half as long as lemma, acute or acuminate, scabrous or pubescent; lemma 4 mm long, scabrous, the callus appressed-pilose, the hairs about 1 mm long, the capillary awn 10-35 mm long, delicate (Hitchcock 1971, Bertelsen 1999).

**AIDS TO IDENTIFICATION:** *Muhlenbergia xerophila* is distinguished by its nodding habit, open panicle, and long awns on lemma. *M. pauciflora* has a compressed panicle with appressed or somewhat spreading branches; the awn on the lemma is less than 25 mm long. *M. monticola* has shorter stems, leaves, and panicle, and the leaves are narrower (Bertelsen 1999, 2000, Gould 1951, Hitchcock 1971).

**ILLUSTRATIONS:** Line drawing of panicle, glume, and floret (Hitchcock 1971).

**TOTAL RANGE:** Southern Arizona.

**RANGE WITHIN ARIZONA:** Pima County: Santa Catalina, Rincon, Santa Rita, Tumacacori, and Baboquivari Mountains; Santa Cruz County: Sycamore Canyon of the Pajarito Mountains.

**SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Perennial herbaceous graminoid.

**PHENOLOGY:** August to November.

**BIOLOGY:** Although the name indicates this grass likes dry places, it grows in seeps in Box Canyon (Santa Rita Mountains) and Finger Rock Canyon (Santa Catalina Mountains). It usually grows in seeps in

bedrock, but one clump in Finger Rock Canyon is growing in 4-5 cm of soil atop bedrock in an area subirrigated by a seep (Bertelsen 2000).

**HABITAT:** In seeps or associated with water. Most often growing in crevices of cliffs, bedrock, and other rocks along canyon bottoms, but also known from rocky canyon slopes in oak, pine-oak, and riparian woodlands.

**ELEVATION:** 3,520 - 6,000 ft. (1074 - 1830 m). Based on records in the Heritage Data Management System (HDMS), elevation ranges from 3,500-4,950 ft (1068-1510 m) (AGFD, unpublished data accessed 2001).

**EXPOSURE:** Varies. In full sun in Box Canyon and heavily shaded in Finger Rock Canyon.

**SUBSTRATE:** Most often pockets of soil in crevices of cliffs, rocks, and bedrock; also gravelly loam soil of slopes and wet soil adjacent to bedrock streambeds.

**PLANT COMMUNITY:** This species has been collected in Madrean evergreen woodland communities, riparian woodland within Madrean evergreen woodland communities, and riparian woodland within the transition zone of Arizona upland Sonoran desertscrub and semi-desert grassland communities, as defined by Brown (1994).

**POPULATION TRENDS:** Apparently stable. Originally, one clump was found in Finger Rock Canyon. There are now five clumps, all within an area about one meter square (Bertelsen 2000).

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None  
**STATE STATUS:** None  
**OTHER STATUS:** Forest Service Sensitive (USDA, FS Region 3 1999)

**MANAGEMENT FACTORS:** Some of the known populations are naturally protected from direct grazing because they are growing on cliffs. Others are more accessible, growing along the bottom of canyons.

**CONSERVATION MEASURES TAKEN:** This species was listed as "Forest Service Sensitive" in 1999. One population occurs in The Nature Conservancy's Thomas Canyon Preserve.

**SUGGESTED PROJECTS:** Monitor existing populations to some extent. Search areas of suitable habitat, especially those canyons adjacent to canyons with known populations.

**LAND MANAGEMENT/OWNERSHIP:** BIA - Tohono O'odham Nation; NPS - Saguaro National Park; USFS - Coronado National Forest (Nogales and Santa Catalina Ranger Districts); Private.

## **SOURCES OF FURTHER INFORMATION**

### **LITERATURE CITATIONS:**

- Bertelsen, C. D. 1999. Unpublished abstract prepared for the Arizona rare plant field guide (in prep.). 1 p.  
 Bertelsen, C. D. 2000. Personal communication in review of AGFD, HDMS draft abstract of *Muhlenbergia xerophila*.  
 Brown, D. E. ed. 1994. Biotic communities: southwestern United States and northwestern Mexico. University of Utah Press. Salt Lake City. 342 pp.  
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 Hitchcock, A.S. 1971. Manual of the grasses of the United States, 2nd edition, Vol. 1. Dover Publications, Inc. New York. p. 403-404, 407.

- Lehr, J. H. 1978. A catalogue of the flora of Arizona. Desert Botanical Garden, Phoenix, AZ. p. 18-19.
- Lehr, J. H. and D. J. Pinkava. 1980. A catalogue of the flora of Arizona. Supplement I. Journal of the Arizona-Nevada Academy of Science 15:19.
- Lehr, J. H. and D. J. Pinkava. 1982. A catalogue of the flora of Arizona. Supplement II. Journal of the Arizona-Nevada Academy of Science 17:20.
- Toolin, Van Devender, Kaiser, 1979. J. Ariz. Acad. Sci.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.

**MAJOR KNOWLEDGEABLE INDIVIDUALS:**

- Dave Bertelsen, Tucson, Arizona.
- Charlotte Reeder, Tucson, Arizona.
- John Reeder, Tucson, Arizona.

**ADDITIONAL INFORMATION:**

In December of 1999, the University of Arizona had 24 specimens from the wild, representing about 10 different locations. This species will be in the Arizona Rare Plant Field Guide (in prep.), which will probably be printed in the year 2000. A line drawing and photo of the plant, as well as a habitat photo will be included.

**Revised:** 1991-10-18 (ANHP)  
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