

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PPOPH01040

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Botrychium dissectum*
COMMON NAME: Cutleaf Grape Fern, Dissected grapefern, Bronze Fern
SYNONYMS: *Sceptridium dissectum*
FAMILY: Ophioglossaceae

AUTHOR, PLACE OF PUBLICATION: Sprengel, Curt Polycarp Joachim. Anleitung zur Kenntniss der Gewächse 3: 172. 1804.

TYPE LOCALITY:

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: According to NatureServe (2016), there are 35 species, two varieties and one named hybrid of *Botrychium* in the United States and Canada. Ten of these species and one of the varieties occur in Arizona.

DESCRIPTION: Trophophore stalk 3--15 cm, 1.5--2.5 times length of trophophore rachis; blade shiny green, often bronze in winter, plane to convex, 3--4-pinnate, to 20 × 30cm, leathery. Pinnae to 10 pairs, approximate to remote, slightly ascending, distance between 1st and 2d pinnae not or slightly more than between 2d and 3d pairs, undivided except in proximal 2/3--3/4. Pinnules usually obliquely angular--trowel-shaped to widely trowel-shaped to obliquely round-lanceolate to ovate and pointed, margins denticulate to lacerate to coarsely cut halfway or wholly into linear-divergent segments in some populations, venation pinnate. Sporophores 2--3-pinnate, 1.5--2.5 times length of trophophore. 2 n =90. Flora of North America 2016.

AIDS TO IDENTIFICATION:

ILLUSTRATIONS:

Photos and Herbarium Mounts: <http://www.tropicos.org/Name/26602173?tab=images>.

Photos: <http://eol.org/pages/597550/media>.

Photos and text: http://www.illinoiswildflowers.info/grasses/plants/cutlf_grpfern.html.

TOTAL RANGE: Eastern North America, from Texas north to Nebraska and northeast to Quebec and Maine, and east to Florida. Also found in the West Indies. Flora of North America does not include Arizona, but NatureServe does, noting it may be extirpated.

RANGE WITHIN ARIZONA: Known from a single collection along Pinal Creek (Gila County) in 1915.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: A perennial fern.

PHENOLOGY: Leaves green over winter, new leaves appearing in late spring.

BIOLOGY: The life cycle of this fern begins during the autumn, when new leaves (both fertile and infertile) are produced as the canopy trees shed their leaves. The infertile leaves remain alive during the entire winter, although they become bronze-colored in response to below-freezing temperatures. These leaves finally wither away during the spring, and the fern persists in a dormant state during the summer, until the same cycle repeats itself beginning in the following autumn (EOL 2016).

HABITAT: In variety of habitats, open grassy areas to deep forest. The preference is partial sun to medium shade, moist to dry-mesic conditions, and soil that contains loam or some rocky material (in Illinois). The root system is partially dependent on mycorrhizal fungi in the soil (EOL 2016).

ELEVATION: Range-wide, elevation is reported from 0 – 4920 feet (0-1500m). The single reported collection from Arizona is at 6500 feet (1980m).

EXPOSURE: Apparently variable: open grassy settings to deep forest shade.

SUBSTRATE: Loam or some rocky material (noted for Illinois).

PLANT COMMUNITY: Open grassy settings to deep forest shade.

POPULATION HISTORY AND TRENDS: Unknown for Arizona. Known only from a single collection made in 1915 (specimen at ASU Herbarium). NatureServe lists the species as possibly extirpated in Arizona. Nationally, its status is secure.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.

STATE STATUS: None.

OTHER STATUS: None.

MANAGEMENT FACTORS: None specified. A report from Illinois notes that the Wild Turkey has been found to eat the fronds of *Botrychium* spp. (Grape Ferns) to a limited extent; the Ruffed Grouse and White-Tailed Deer probably eat the fronds as well. So conceivably, foraging or grazing pressure could be a management factor to consider (EOL 2016).

PROTECTIVE MEASURES TAKEN: None.

SUGGESTED PROJECTS: Although it would be good to know if this species is still extant after 100 years, the site data is too vague to relocate. Furthermore, this occurrence is well beyond the known range, where the plant is considered to be secure.

LAND MANAGEMENT/OWNERSHIP: USDA Forest Service, Tonto National Forest.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Encyclopedia of Life (EOL), accessed 5/25/2016, <http://eol.org/pages/597550/details>.
Flora of North America (eFloras.org), accessed 5/25/2016,
http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=200002874.
Tropicos, accessed 5/25/2016, <http://www.tropicos.org/Name/26602173>.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION: *Botrychium dissectum* is highly variable, even within the same population. In Florida and along the Gulf Coast, the extremely lacerate form is absent, and the blade segments are usually strongly angular, trowel-shaped, and dentate. In eastern Kentucky and central Tennessee in forested valleys, on shale and limestone soils, plants have narrowly linear, somewhat blunt-tipped segments with a more or less whitish gray central line above the veins. This variant, which grows with *B. dissectum*, may deserve recognition as a distinct species. Flora of North America 2016.

Revised: 2011-07-29 (JRK)
2016-05-26 (BDT)

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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.

Abstract