

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PMIRI0B040

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Nemastylis tenuis*
COMMON NAME: Slender Shell Flower
SYNONYMS: *Nemastylis coelestina* var. *tenuis*
FAMILY: Iridaceae

AUTHOR, PLACE OF PUBLICATION: Watson, Sereno. Proceed. American Academy of Arts and Sciences 18: 160. 1883.

TYPE LOCALITY: Mexico: Aguascalientes; in pascuis Aguas Calientes

TYPE SPECIMEN: NY 319400 (Isotype of *Nemastylis coelestina* var. *tenuis*). K.T. Hartweg (#229). 1839.

TAXONOMIC UNIQUENESS: There are four species of *Nemastylis* in the US. *N. tenuis*, and its subspecies *N. tenuis* spp *pringlei* are only found in Arizona and Texas.

DESCRIPTION: **Plant:** perennial herb; bulbs 2-2.5 cm long, ca. 1.5 cm wide; scales dark brown; stems simple, occasionally 1-branched, 12-30 cm high **Leaves:** basal leaves 2-3, 6-28 cm long, 1-2.5 mm wide, linear; cauline leaves 1, 6-15 cm long, 1-2(-3) mm wide **Inflorescence:** usually 1-flowered; bracts unequal, the outer to 2.5 cm long, the inner to 4 cm long; pedicels shorter than bracts **Flowers:** actinomorphic, pale blue; tepals 2-3 cm long, to 9 mm wide, the inner slightly shorter and narrower, oblong-ovate to oblanceolate; stamens with filaments 3-4.5 mm long, united at base for 2-3 mm, the anthers 8-10 mm long; style usually shorter than staminal column, the style arms 3-3.5 mm long **Fruit:** oblong, 15-25 mm long, opening at the apex; **Seeds:** yellow or dark brown, ca. 2 mm long, angular (Mason 2001).

AIDS TO IDENTIFICATION: Perennial herbs with ovoid or globose bulbs, flowering stems circular in cross section, style 3-branched, the branches deeply 2-parted (to distinguish the genus *Nemastylis* from *Iris* and *Sisyrinchium*). Of the four recognized subspecies of *N. tenuis*, only *N. t.* subsp. *pringlei* occurs in Arizona and can be differentiated from the others in having longer filaments that are united for about 2/3s of their length, and tepals that are longer than in any other subspecies (Mason 2001).

ILLUSTRATIONS:

Photo and Herbarium Mounts:

[http://swbiodiversity.org/seinet/taxa/index.php?taxon=Nemastylis tenuis.](http://swbiodiversity.org/seinet/taxa/index.php?taxon=Nemastylis%20tenuis)

TOTAL RANGE: Arizona and Texas, south into Mexico to Guatemala. The presence in Arizona and Texas marks the extreme northern end of the distribution.

RANGE WITHIN ARIZONA: The nine collections in Arizona center on the western side of the Huachuca Mountains and foothills to Parker Canyon Lake in Cochise County. There is a single collection about 25 miles east in the western Mule Mountains. The range also extends 8.5 and 21 miles NW of the Huachucas into Santa Cruz County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial herb, with bulb.

PHENOLOGY: Range-wide the plant is reported to flower from July to September. In Arizona collections, flowers have been noted in July and August.

BIOLOGY:

HABITAT: Open oak, juniper and pine woodlands to savanna grasslands; also bog or pond periphery (moist) habitats.

ELEVATION: Range-wide elevations are reported from 5250 – 6200 feet (1600-1900m). Arizona collections extend these ranges from 4700 – 6600 feet (1430-2010m).

EXPOSURE: Not specified.

SUBSTRATE: Not specified, but one collection noted gravelly, flat limestone, and two others were in moist to saturated soil environments.

PLANT COMMUNITY: Open oak, juniper and pine woodlands to savanna grasslands. Associated species noted in collections include: *Juniperus deppeana*, *Pinus cembroides* and *P. ponderosa*, *Quercus arizonica* and *Q. emoryi*, *Lobelia fenestralis*, *Mimosa biuncifera*, *Piptochaetium fimbriatum* and *Rhus trilobata*. The collection made on the periphery of small ponds noted the presence of *Eleocharis*.

POPULATION HISTORY AND TRENDS: Not known. *N. tenuis* has been collected in Arizona since the 1930s, and there are a total of nine known collection sites. Five of these were known at the time NatureServe assigned a critically impaired ranking to the species. The facts that the plant can occupy a variety of wide ranging woodland habitats, and semi-wetland types, and that outlying populations have been found more than 20 miles from the majority of collections centered near the Huachuca Mountains, bode well for the sustainability of the species in Arizona. Moreover, at least three of the collections noted the plant was at least common to abundant, including one site visited in 1933, 1974 and 2003. It appears that

within the somewhat limited known distribution of *Nemastylis tenuis* in Arizona, that there are a number of well established and stable populations.

SPECIES PROTECTION AND CONSERVATION

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

MANAGEMENT FACTORS: None known.

PROTECTIVE MEASURES TAKEN: None known.

SUGGESTED PROJECTS: Expand surveys to at least a 25 mile radius from the Huachuca Mountains in open woodland habitat between 4700 to 6600 feet to determine if additional populations can be identified. For any new populations, or revisited sites, provide a better estimate of actual populations so that trends can be more accurately monitored.

LAND MANAGEMENT/OWNERSHIP: More than half (5) of the known populations are situated on USFS Coronado National Forest lands. Two other sites are on USDI BLM lands, one is on the DOD Fort Huachuca Military Reservation and the remaining population is on private property near the Elgin Research Ranch.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- JStor| Global Plants, accessed 6/11/2014, <http://plants.jstor.org/specimen/ny00319400?s=t>.
Mason, Charles T., Jr. 2001. Iridaceae. Part Two. *Iris and Nemastylis*. J. Ariz. – Nev. Acad. Sci. Volume 33(1): 35-37.
NatureServe Explorer: an Online Encyclopedia of Life, accessed 6/11/2014, <http://explorer.natureserve.org/servlet/NatureServe?searchSciOrCommonName=Nemastylis&x=13&y=13>
Tropicos, accessed 6/11/2014, <http://www.tropicos.org/Name/50003217>.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Revised: 2014-06-12 BDT

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