

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

**Plant Abstract**

**Element Code:** PDVIO042E0

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Viola umbraticola* Kunth  
**COMMON NAME:** Ponderosa violet, Shade violet  
**SYNONYMS:**  
**FAMILY:** Violaceae

**AUTHOR, PLACE OF PUBLICATION:** *Viola umbraticola* Kunth, Nova Genera et Species Plantarum 5: 370-371. 1821 [1823]. *V. umbraticola* var. *glaberrima* W. Becker, Repert Spec. Nov. Regni Veg. 20: 7. 1924.

**TYPE LOCALITY:** Mexico. Specifically "Crescit in sylvis, prope Real del Monte Mexicanorum, alt. 1426 hex. Floret Majo, Humboldt & Bonpland s.n."

**TYPE SPECIMEN:** T: P (Mexico). Humboldt & Bonpland s.n., no date.

**TAXONOMIC UNIQUENESS:** The genus *Viola* has a cosmopolitan distribution and contains approximately 850 species (Smith 1977). There are approximately 80 species of *Viola* in North America (Venning 1984); 10 species of *Viola* occur in Arizona (Lehr 1978). USDA, NRCS (2004) reports 111 species in the genus. The species *V. umbraticola* is comprised of 2 varieties, one (*V. u.* var. *glaberrima*) of which occurs in southern Arizona and Mexico, and one (*V. u.* var. *umbraticola*) in only Mexico. USDA, NRCS (2004) reports only one variety (var. *glaberrima*) in the species *V. umbraticola*.

**DESCRIPTION:** Acaulescent perennial herb without distinct stems, the leaves and flower stalks arising from the rootstock. Herbage glabrous, or obscurely puberulent. Leaves undivided, lance-ovate to ovate-triangular, short-cuneate to subcordate at the base, the margins are crenulate or denticulate. In practice, the leaves are shallowly indented at the base, or not at all (Malusa 2001). Flower stalks not taller than the leaves; the flowers range from white to violet (normally violet) and are 10-15 mm long; spurs are very short; throat white. As for the peduncle length, it scarcely surpasses the leaves, however in practice, the peduncle continues to lengthen as the flowers turn to fruits (Malusa 2001). (Martin et al. 1998, Kearney and Peebles 1951).

**AIDS TO IDENTIFICATION:** Both *Viola umbraticola* and *V. nephrophylla* are distinct from other Arizona species of *Viola* by having the following combination of characters: an acaulescent habit (with the leaves and erect scapes from rootstocks), normally violet corollas, short and rather thick spurs, glabrous or obscurely puberulent herbage, and undivided leaves.

According to the key to *Viola* in Kearney and Peebles (1951), *V. umbraticola* is most likely to be confused with *V. nephrophylla*. Kearney and Peebles (1951) use the following characters to separate these two perennial species:

*V. umbraticola*: peduncles scarcely surpassing the leaves; leaves ovate, short-cuneate to subcordate at base.

*V. nephrophylla*: peduncles usually surpassing the leaves, often considerably; leaves round-reniform.

In practice (Malusa 2001), *V. nephrophylla* has heart-shaped leaves that are deeply indented at the stem, while *V. umbraticola* has leaves that are shallowly indented at the base, or not indented at all. The peduncle usually surpasses the leaves in *V. nephrophylla*, and scarcely surpasses the leaves in *V. umbraticola*, except when it lengthens as the flowers turn to fruits.

**ILLUSTRATIONS:** None (See Arnberger and Janish 1982 for line drawing of the similar *V. nephrophylla*)

**TOTAL RANGE:** Southern Arizona and northern Mexico (Sonora and Chihuahua).

**RANGE WITHIN ARIZONA:** Chiricahua and Huachuca mountains in Cochise County, the Santa Catalina Mountains in Pima County, and the Santa Rita Mountains in Santa Cruz County.

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Herbaceous perennial.

**PHENOLOGY:** Specimens have been collected in bloom from March to September. Rickett et al. (1970) reports flowering from June to July, while Martin et al. (1998) reports flower from March to July.

**BIOLOGY:** Apparently seeds of *Viola* spp. are often dispersed by ants, which feed on the seed appendages (Hickman 1993). However, the seed capsules are often explosively dehiscent and naturally disperse seed. The early flowers of *Viola* spp. are open flowered, while the later flowers are often cleistogamous (Welsh et al. 1993).

**HABITAT:** Shady areas in canyon bottoms, usually within riparian ponderosa pine forest in Arizona, and pine-oak in Mexico. In Arizona, it has also been collected in ponderosa pine-juniper-oak.

**ELEVATION:** Between 5,200 - 7,500 feet (1586-2288 m) in Arizona, and from approximately 4,756 - 6,888 feet (1,450-2,100 m) in Mexico.

**EXPOSURE:** Various, but apparently always in shaded situations. Southwest-facing slope of 40-50% (ARIZ 358285, Malusa 2001 in SEINet). Also observed on a gentle sloping bench of less than 20% in the Santa Catalina Mountains, and a north-facing slope of 40% in the Santa Rita Mountains.

**SUBSTRATE:** Somewhat mesic soils of canyon bottoms where leaf litter builds up; soil rocky; gneiss outcrops and thin soil. Ashy volcanic rocks in Mexico (Eastoe et al. 1987 collection, in SEINet).

**PLANT COMMUNITY:** This species occurs in riparian communities within Madrean evergreen woodland and Madrean montane forest communities, as defined by Brown (1994). Associated species may include *Acer negundo* (box elder), *Acer* sp. (maple), *Berberis* sp. (barberry), *Ceanothus fendleri* (Fendler's whitethorn), *Cupressus arizonica* (Arizona cypress), *Fraxinus velutina* (velvet ash), *Geranium* sp., *Hedeoma hyssopifolium*, *Juglans major* (Arizona black walnut), *Juncus* sp. (rush), *Juniperus deppeana* (Alligator juniper), *Muhlenbergia emersleyi* (bullgrass), *M. virescens* (screwleaf muhly), *Pinus arizonica* (Arizona pine), *P. cembroides* (Mexican pinyon), *P. discolor* (border pinyon), *P. ponderosa* (ponderosa pine), *P. strobiformis* (white pine), *Platanus wrightii* (Wright sycamore), *Potentilla thurberi* (Thurber's cinquefoil), *Pseudotsuga menziesii* (Douglas-fir), *Quercus arizonica* (Arizona oak), *Q. hypoleucoides* (silver-leaf oak), *Q. rugosa* (net-leaf oak), *Rhamnus* (=Frangula) *californica* (California coffeeberry), *Salix bonplandiana* (red willow), and *Samolus* sp. (brookweed).

**POPULATION TRENDS:** Unknown. In 1986, collector David Bertelsen (ARIZ 260786, in SEINet) reported plant abundant in the Santa Rita Mountains; unknown about current abundance. In a 1995 collection by Mark Fishbein (ARIZ 319844), in the Bear Canyon area of the Santa Catalina Mountains, report the species as uncommon.

## **SPECIES PROTECTION AND CONSERVATION**

<b>ENDANGERED SPECIES ACT STATUS:</b>	None
<b>STATE STATUS:</b>	None
<b>OTHER STATUS:</b>	Forest Service Sensitive (USDA, FS Region 3 1999)

**MANAGEMENT FACTORS:** Threats in the Santa Catalina Mountains include road construction, and trampling by recreational use.

**CONSERVATION MEASURES TAKEN:** This species was listed as "Forest Service Sensitive" in 1999.

**SUGGESTED PROJECTS:** Collect information on population biology. Monitor existing populations to some extent. Continue to search areas of suitable habitat for new populations of this species.

**LAND MANAGEMENT/OWNERSHIP:** DOD - Fort Huachuca Military Reservation; USFS - Coronado National Forest.

## **SOURCES OF FURTHER INFORMATION**

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**ADDITIONAL INFORMATION:**

**Revised:** 1992-12-07 (JSP)  
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