

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDPRI09040

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Samolus vagans*
COMMON NAME: Chiricahua Mountain Brookweed
SYNONYMS: *Samolus decumbens* Greene
FAMILY: Primulaceae

AUTHOR, PLACE OF PUBLICATION: Greene, Edward Lee. Repertorium
Specierum Novarum Regni Vegetabilis 7(13/15): 196. 1909.

TYPE LOCALITY: Chiricahua Mountains, Reed's Ranch, Cave Creek. Elevation 1676m.

TYPE SPECIMEN:

US 561759. J.C. Blumer (SN). 1907.

CAS 8646 (California Academy of Sciences). J.C. Blumer (#1546). June 28, 1907. (Isotype).

TAXONOMIC UNIQUENESS: The genus has worldwide distribution of 10-15 species. There are three species of *Samolus* in the U.S., and two species, *S. vagans* and *S. valerandi* are found in Arizona. See Additional Information below regarding recommendation to lump these two species together.

DESCRIPTION: Perennial herb. **Plants** light green, stoloniferous or mat-forming, 0.2-3 dm. **Stems** usually prostrate or arching. **Leaves** often crowded near plant base, petiolate or nearly sessile; blade orbiculate to broadly spatulate, 0.5-6 cm, base decurrent, broadly cuneate (or somewhat rounded), apex obtuse. **Inflorescences** terminal and axillary in distal leaves, racemose, sessile or short-pedunculate; peduncle to 1.5 cm, shorter than to equaling stem. **Pedicels** usually spreading, bracteate, 1.4-10 mm, glabrous; bract proximal to midlength. **Flowers:** calyx 1-2 mm, lobes triangular-ovate, equaling or longer than tube, apex acute, not glandular; corolla white, 1-3 mm, lobes oblong, longer than tube, base glabrous, apex rounded or slightly emarginate; staminodes 5. **Capsules** 2-3 mm.

AIDS TO IDENTIFICATION: A perennial herb with lax, spreading stems. Tiny white or pinkish flowers bloom in summer.

The most similar species is the widespread *Samolus parviflorus*. There are several key characteristics that distinguish *Samolus vagans* from this species. The stems of *S. vagans* are prostrate, arching, stoloniferous, or mat-forming. The stems of *S. parviflorus* are erect or nearly so and are never stoloniferous. The circular to obovate leaves of *S. vagans* are widely

spaced and few in number. The elliptic to obovate leaves of *S. parviflorus* are numerous and generally crowded or even overlapping. The inflorescences of *S. vagans* contain few flowers, rarely more than 10. The inflorescences of *S. parviflorus* contain several flowers, rarely less than 10 (Cholewa 1992, Kearney and Peebles 1960).

ILLUSTRATIONS:

Photos and Herbarium Mounts:

http://swbiodiversity.org/seinet/taxa/index.php?taxon=Samolus_vagans.

TOTAL RANGE: SE Arizona and Mexico (western Chihuahua and eastern Sonora south to Durango).

RANGE WITHIN ARIZONA: Pima, Santa Cruz and Cochise Counties. Rincon Mountains E of Tucson, Santa Rita Mountains SW to Pajarita Mountains, Huachuca and Chiricahua Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial deciduous forb; rhizome geophyte (Bennett et al 1996).

PHENOLOGY: Literature reports flowering from spring-fall . Flowers have been reported from Arizona collections from May through August, and fruits have been noted from August to October.

BIOLOGY: This species is confined to areas with permanent water.

HABITAT: Moist to wet sandy places near stream-sides and brooks, and wet meadows, springs and seeps.

ELEVATION: Literature: 3510 – 6000 feet (1070-1830m). In Arizona, collections have been made from 3700 – 7740 feet (1130-2540m).

EXPOSURE: Not specified.

SUBSTRATE: Wet sandy soils, muddy areas near springs.

PLANT COMMUNITY: Madrean Evergreen Woodland (primarily) and Madrean Montane Conifer Forest. Generally riparian communities from mesquite, willow, oak and pine up to Douglas Fir. Specific species identified with Arizona collections include: *Myosurus minimus*, *Juncus bufonius* and *J. saximontanus*, *Prosopis veluntina*, *Pteridium*, *Dactylis*, *Robinia*, *Fraxinus veluntina*, *Juglans*, *Plantanus*, *Carex*, *Salix*, *Lythrum*, *Rhus trilobata*, *Mimulus guttatus*, *Pseudotsuga menziesii*, *Piptochaetium fimbriatum*, *Rorippa nasturtium-aquaticum*,

Hydrocotyle ranunculoides, *Centaurium*, *Aquilegia*, *Geranium*, *Muhlenbergia rigens*, *Agrostis semiverticillata*.

POPULATION HISTORY AND TRENDS: Not known for Arizona. *S. vagans* has been collected in the State from 1884 to the present. Including historical records, there have been a total of 23 collection sites, mostly from the Huachuca and Chiricahua Mountains. Although some sites noted the plant as infrequent or uncommon, several others noted the plant was common.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.
STATE STATUS: None.
OTHER STATUS: Forest Service Sensitive (USDA FS Region 3 1999, 2007 and 2013).

MANAGEMENT FACTORS: Protect riparian communities in Madrean Evergreen Woodlands and Madrean Montane Conifer Forests.

PROTECTIVE MEASURES TAKEN: None specified.

SUGGESTED PROJECTS: Revisit selected collection sites to ascertain overall population trend. An extensive survey of riparian communities in southeastern Arizona's sky islands should be done to ascertain distribution, abundance, and threats to this taxon. Further floristic surveys in Sinaloa should be done to increase our knowledge of this taxon's distribution. Genetic analysis of this species should be done to verify that is distinct from *Samolus parviflorus*.

LAND MANAGEMENT/OWNERSHIP: The majority of known locations for *S. vagans* are on USFS lands in Coronado National Forest (especially Huachuca and Chiricahua Mountains). Other collections were made on Dept. of Defense lands (Ft. Huachuca), US National Park Service (Sahuaro NM), State Lands (Sonoita Creek NA) and on one private holding.

SOURCES OF FURTHER INFORMATION

REFERENCES:

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- USDA, Forest Service Region 3. 2013. Regional Forester's Sensitive Species List.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION: A recent molecular study of this species and others closely related to it suggest that it should not be treated a separate species, and that it should be part of the *Samolus valerandi* complex. The taxonomic status of this taxon is uncertain (Jones et al. 2012). *S. valerandi* is a cosmopolitan species, and Jones et al. (2012) lump another North American *Samolus*, *S. parviflorus*, into *S. valerandi* as well.

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