

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

Plant Abstract

Element Code: PDLAM1S020

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Salvia amissa* Epling.
COMMON NAME: Aravaipa Sage; Galiuro Sage
SYNONYMS: *Salvia albiflora* var. *pringlei*
FAMILY: Labiatae

AUTHOR, PLACE OF PUBLICATION: Epling. 1939. Rep. Spec. Nov. Beih. 110:187.

TYPE LOCALITY: Arizona: Santa Catalina Mountains.

TYPE SPECIMEN: Pringle. 1881.

TAXONOMIC UNIQUENESS: One of 15 members of the genus in Arizona (Kearney and Peebles 1960).

DESCRIPTION: A perennial herb to 1.0 m (3.3 ft) tall; leaves canescent (heavily haired on both sides of leaf) giving grayish appearance, simple, opposite, deltoid-ovate, with toothed margins; flowers 3 or more per verticil (whorl); pale lavender to purple, corolla tube 6.0-7.0 mm (0.24-0.28 in.) long, surpassing the calyx (Malusa et al. 1993). Square stem.

AIDS TO IDENTIFICATION: "Flowers have an unusual tooth on the stamen connective" (Malusa et al. 1993). To observe this, need dissecting microscope. Leaf shape, hairs, elevation, and pale flowers exerted beyond calyx, distinguishes *Salvia amissa* from other *Salvias* in the area. For example, *S. incisa* has oblong leaves, and *S. arizonica* which occurs at higher elevations has glabrous, not canescent leaves. *S. amissa* could be confused with *S. subincense* which has no hairs.

ILLUSTRATIONS:

TOTAL RANGE: South-central Arizona.

RANGE WITHIN ARIZONA: Galiuro Mountains: Aravaipa, Bass, Double R, Keilberg, Oak Grove, Rattlesnake, Redfield, Sycamore and Turkey Creek canyons; Superstition Mountains: Fish Creek. Historically in the Santa Catalina Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowering July to October (Malusa et al. 1993; D. Gori, pers obs); fruits August to November. Kearney and Peebles 1960, report it flowering as early as May, but apparently no evidence or observations exist to support this early date.

BIOLOGY: Unknown

HABITAT: Upper floodplain terraces in shady canyon bottoms near streams in understory of mature sycamore, ash, walnut and mesquite (Gori 1999). "Alluvial benches in understory of sycamore walnut and cottonwood, not far from permanent water" Malusa et al. 1993. Distribution puzzling according to Warren; habitat looks good but plant not found. "Intermittent stream with good overstory and steep canyon walls. Spread across flood plain mid-level and higher terraces and pediment of canyon walls" (Gori 1994).

ELEVATION: 1,500 - 5,000 ft. (458 - 1,525 m). Based on records in the Heritage Data Management System (HDMS), elevation ranges from 3,120-5,000 ft (952-1525 m) (AGFD, unpublished data accessed 2002).

EXPOSURE: Shady canyons.

SUBSTRATE: Alluvium; floodplain. Gravel, sand and silt substrates.

PLANT COMMUNITY: Oak woodland; deciduous riparian woodland. Found where sycamore, ashes and willows grow. Gori (1999) reports that it is found "in understory of mature sycamore, ash, walnut and mesquite."

POPULATION TRENDS: Unknown; locally abundant in Turkey Creek at east end of Aravaipa Creek. More abundant than thought. About 4,000 plants in Bass Canyon; 3,000 in Aravaipa.

Surveys in Santa Catalina Mountains in 1992 failed to locate plants although the historic (type) locality is recorded only as Santa Catalina Mountains; also unknown whether species still occurs in Superstition Mountains (Gori 1999).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1993]

STATE STATUS: None

OTHER STATUS:

Forest Service Sensitive (USDA, FS Region 3 2007)
[Forest Service Sensitive (USDA, FS Region 3 1999)]
Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005, 2008, 2010)

MANAGEMENT FACTORS: Riparian canyon bottom habitat is potentially vulnerable to numerous impacts: grazing, camping, off-road vehicles, etc. Threats are: heavy cattle grazing (light grazing acceptable); possibly recreation/hiking; also poor watershed conditions. Accept intermediate amount of disturbance. Needs some light but also fair amount of shade.

PROTECTIVE MEASURES:

SUGGESTED PROJECTS: Survey for possible populations. Abundant where found but restricted to the Galiuros and Superstition mountains. Monitor known populations to determine trends and potential impacts.

LAND MANAGEMENT/OWNERSHIP: BLM - Safford Field Office; USFS - Coronado and Tonto National Forests; State Land Department; TNC - Aravaipa Canyon and Muleshoe Ranch Preserves.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

- Gori, D. 1999. *Salvia amissa* Epling (Galiuro Sage), Labiatae. Draft abstract from Arizona Rare Plant Book, in prep.
- Kearney, T.H., R.H. Peebles with collaborators. 1960. Arizona flora. Second edition with supplement by J.T. Howell, E. McClintock and collaborators. University of California Press. Berkeley. p.743.
- Lehr, J.H. 1978. A catalogue of the flora of Arizona. Desert Botanical Garden, Phoenix, Arizona. p.134.
- Malusa, J., P. Warren and D. Gori (TNC). 1993. Population studies of sensitive plants of the Coronado National Forest, Arizona. Cost-share agreement between the Coronado National Forest and The Nature Conservancy.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
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- USDI, Fish and Wildlife Service. 1993. Plant Taxa for Listing as Endangered or Threatened Species; Notice of Review. Federal Register 58(188):51184.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants: Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40):7596-7613.
- Warren, P.L. 1994. Bureau of Land Management, Safford District, Rare Plant Workshop. November 14-16. Tucson, Arizona.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

- Dave Gori - The Nature Conservancy, Tucson, Arizona.
- Jim Malusa - The Nature Conservancy, Tucson, Arizona.

ADDITIONAL INFORMATION:

Type locality, Catalina Mountains, never relocated.

According to Malusa et al. (1993), "... the range of variation in *S. amissa* is greater than previously believed with corolla color ranging to include purple; plants often up to a meter in height; and the density of flowers (verticels) varying greatly from plant to plant within a single population."

"The Sycamore Canyon population is an anomaly, growing at 5000 feet on a slope well above the canyon bottom" Malusa et al. (1993).

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