

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

Plant Abstract

Element Code: PDROS1R022

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Vauquelinia californica* ssp. *pauciflora* (Standl.) Hess & Henrickson
COMMON NAME: Limestone Arizona Rosewood, Arizona Limestone Rosewood, Arizona Rosewood, Guadalupe Canyon Rosewood, Few-flowered Arizona rosewood, fewflower vauquelinia
SYNONYMS: *Vauquelinia pauciflora* Standl.
FAMILY: Rosaceae

AUTHOR, PLACE OF PUBLICATION: (Standl.) W.J. Hess & J. Henrickson, Sida 12(1): 135. 1987. *Vauquelinia pauciflora* Standley, Proc. Biol. Soc. Wash. 31: 132. 1918.

TYPE LOCALITY: Guadalupe Canyon, Sonora, Mexico. 1380 m.

TYPE SPECIMEN: HT: US-234626. E.A. Mearns 2535, 3 October 1893.

TAXONOMIC UNIQUENESS: “The genus *Vauquelinia* is comprised of eleven taxa of evergreen, sclerophyllous, shrubs to small trees native to the arid, and semi-arid lands of Mexico and adjacent United States. The genus is here treated as composed of three species, one species having four subspecies, another with six subspecies, and the third without intraspecific divisions” (Hess and Henrickson 1987). Three species of *Vauquelinia* occur in the United States; *V. pauciflora* has been reduced to a subspecies of *V. californica*, and is 1 of 3 subspecies in *V. californica*.

DESCRIPTION: Evergreen, slow growing, arborescent shrub or small tree, 2.0-4.0 m (6.6-13.2 ft.) tall with grayish bark, and branchlets finely and loosely tomentose. Petioles 3.0-6.0 mm long. Leaves are alternate, **small and somewhat thickened**, oblong or somewhat lance-shaped (with parallel sides), shiny dark green on both sides, usually 3.0-7.5 cm (1.3-3.0 in.) long and 8.0-14.0 mm wide, narrowed at the tip, with fine teeth on margins (young leaves very serrate at margins, less serrated with age). Small white flowers 6-10 per cluster, with 5 elliptic petals, about 3.0 mm long; the sepals are green. The flowers first open from the outside then toward the center. Terminal clusters are dense, flat-topped. Hard, brown, woody seed capsules are densely covered with short hairs, each about 6 mm long, splitting into 5 partially-united sections; seed pods survive from summer till the winter. Due to the dark foliage and size, this plant can be seen from distance.

AIDS TO IDENTIFICATION: The small and somewhat thickened leaves, small inflorescence, and separate geographic ranges distinguish this subspecies from subspecies

californica and *sonorensis*. In the subsp. *pauciflora*, the leaves are glabrous, while in the subsp. *californica* and subsp. *sonorensis*, the leaves are white-tomentose on the underside, except in central Arizona, where the leaves are typically glabrate beneath. The leaves of subsp. *sonorensis* have larger marginal spines, and have markedly narrower leaves than subsp. *californica* and subsp. *pauciflora*. (Turner, Bowers, and Burgess, 1995).

“The taxon is easily separable from subspecies *sonorensis* and *rethfordii*, as the latter two subspecies at all times have permanently concolorous, more linear, linear-lanceolate leaf blades.” (Hess and Henrickson, 1987).

ILLUSTRATIONS: Line drawings of leaves, stems and inflorescence (Hess and Henrickson 1987: 137).

Line drawing (USFWS)

Color photo of species flower cluster (L.E. Epple, in A.O. Epple 1995: pl. 76)

Color photo of Holotype collection (Standley, in US Herbarium, at <http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>)

Color photos (J.S. Peterson, 2002, in USDA PLANTS Image Gallery at http://plants.usda.gov/cgi_bin/)

Color photos (J.S. Peterson, 2003, in USDA PLANTS Image Gallery at http://plants.usda.gov/cgi_bin/)

Color photos of species (In

http://www.desert-tropicals.com/Plants/Rosaceae/Vauquelinia_californica.html)

Color photos of species (In

<http://weather.nmsu.edu/AbqPlantList/eshrub/arizonarosewood.htm>)

TOTAL RANGE: From Hidalgo County (Peloncillo Mountains), New Mexico, Cochise County, Arizona, and NE Sonora, Chihuahua, Coahuila, Durango, in Mexico.

RANGE WITHIN ARIZONA: Peloncillo Mountains in extreme southeastern Cochise County, east of Douglas.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Woody perennial, large shrub or small tree.

PHENOLOGY: Flowers in April and sets fruit by mid-July. For the species, plants flower from May to July.

BIOLOGY: This plant is often used in cultivation as a shrub or small tree, in growth zones 9-13. Plants are hardy to 15° F, and are drought and heat tolerant. As a desert native, this species is well adapted to high temperatures and poor soils and grows well in either partial or full sun. Bees are a known pollinator. Propagates from seed, although in

cultivation, may be cultivated from seed or cuttings. Commonly browsed by Mule deer and rodents, and used for nesting by several birds including Mourning Dove, Roadrunner, and other unidentified species (Bingham 1979, in Phillips et al. 1982).

HABITAT: Found primarily on rather steep slopes of low foothills, and on the more level tops (ridge tops) of those limestone hills.

ELEVATION: In North America, elevation ranges from 4,032-5,900 ft (1230 - 1800 m). Over its entire range, Hess and Henrickson (1987) reported it from 4,593-7,546 ft (1400-2300 m).

EXPOSURE: All aspects with almost level to 45° slopes. Grows well in partial or full sun.

SUBSTRATE: Limestone bedrock, and rhyolite (igneous). Discrepancy in substrate type: Spellenberg has found plant on rhyolite near Guadalupe Canyon (mentioned in USFWS memo to Arizona plant Recovery Team members from Sue Rutman 1990). Wells and Johnson (1964) state plant is found on limestone only (obligate calceophile). Soil texture consists of very cobbly and gravelly loams over limestone with a limestone chip pavement overlay; pH of 8 (Phillips et al. 1982).

PLANT COMMUNITY: Chihuahuan desert scrub. Occurs in upper desert scrub, associated with ocotillo, white thorn, agaves, and grasses. On those hills observed with *Vauquelinia californica* ssp. *pauciflora*, *Fouquieria splendens* (ocotillo) and *V. californica* ssp. *pauciflora* comprised the total overstory vegetation (Phillips et al. 1982).

Dominant associated species include: *Agave palmeri* (Palmer agave), *A. schottii* (agave), *Bouteloua eriopoda* (black grama), *B. curtipendula* (sideoats grama), *B. hirsute* (hairy grama), *Calliandra eriophylla* (fairy duster), *Echinocereus fendleri* (Fendler's hedgehog), *Fouquieria splendens* (ocotillo), *Gutierrezia microcephala* (stocky snakeweed), *Mammillaria gummifera* (cream cactus), *Menodora scabra* (rough menodora), *M. scoparia* (broom twinberry), *Mortonia scabrella* (sandpaper bush), *O. phaeacantha* (prickly pear), *Opuntia spinosior* (cane cholla), *O. violacea* (purple prickly pear), *Panicum hallii* (Hall's panicum), *Polygala macradenia* (shrubby milkwort), and *Zinnia acerosa* (desert zinnia). At higher elevations, *Quercus pungens* (sandpaper oak) and *Rhus choriophylla* (Mearns sumac) can be found. (Phillips et al. 1982).

Has also been reported with *Juniperus monosperma* (one-seeded juniper), *Juniperus* spp. (juniper), *Mimosa biuncifera* (aculeaticarpa, cat's-claw mimosa), *Nolina microcarpa* (Sacahuista bear-grass), *Parthenium incanum* (Mariola fever-few), *Prosopis glandulosa* (honey mesquite), *Purshia mexicana* (Mexican cliff-rose), *Rhus virens* (poison sumac), *Trichostema arizonicum* (Arizona blue-curls), and species of *Berberis* (barberry), *Ephedra* (mormon-tea), and *Yucca*. (Hess and Henrickson, 1987).

POPULATION TRENDS: Unknown, but according to Rutman, young plants seem underrepresented from 1988 through 1991. Bingham (1979) noted the same trend and also noted range condition was “good.” Work by Baker (1994b) indicates a large proportion of small size-class plants, which suggests relatively good reproduction. NatureServe (2003) reports that this plant is known from only 3 occurrences in Arizona, 1 in New Mexico, and from an unknown number in Sonora, Mexico.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[Category 2 USDI, FWS 1985]

STATE STATUS: Salvage Restricted (ARS, ANPL 1999)
[Salvage Restricted (ARS, ANPL 1993)]

OTHER STATUS: Not Forest Service Sensitive (USDA, FS
Region 3 1999)
[Forest Service Sensitive USDA, FS Region
3 1990]

MANAGEMENT FACTORS: In 1993, three monitoring plots established. They indicate that in Arizona, they have a fairly high density. Internode length measured to get knowledge of browsing extent. They found that when lengths were measured, they ended up with short axes. Cattle and/or deer appear to be eating the plants to such an extent that the plants are malformed. However, Baker (1994b) concluded that grazing impacts do not appear to be detrimental to long-term stability of the population. Plants seem to be reproducing normally with good overall health. Plants need long-term monitoring, and should be resurveyed in four to five years.

Rutman noted the plants were severely hedged from 1988-1991; Fletcher (1979) noted the same. At present, plant appears dense and healthy, with little management needed other than maintaining the habitat. This species occurs with *Coryphantha robbinsorum*. It should not be a problem with experimentation relative to fire. Because focusing on healthiness of palatable grasses, will also manage for *V. c.* ssp. *pauciflora*.

PROTECTIVE MEASURES: Improved range management.

SUGGESTED PROJECTS: Research to determine if the species is reproducing sufficiently to maintain itself.

LAND MANAGEMENT/OWNERSHIP: BLM - Safford Field Office; State Land Department. Possibly on US Forest Service and privately owned land.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

- Arizona Revised Statutes, Chapter 7. 1993. Arizona Native Plant Law. Appendix A:11.
- Arizona Revised Statutes, Chapter 7. 1999. Arizona Native Plant Law. Appendix A.
- Baker, M. 1994a. Reproductive status of Arizona rosewood (*Vauquelinia californica* var. *pauciflora*). Report to Arizona Department of Agriculture. 64 p.
- Baker, M. 1994b. Bureau of Land Management, Safford District, Rare Plant Workshop. November 14-16. Tucson, Arizona.
- Bingham, S. 1979. *Vauquelinia pauciflora* Standl. Report for the Safford District, Bureau of Land Management.
- Epple, A.O. 1995. A field guide to the plants of Arizona. Falcon. Helena, MT. Pp. 102-103.
- Faucon, P. 1998-2003. Desert Rose, Arizona Rosewood (*Vauquelinia californica*).
http://www.desert-tropicals.com/Plants?rosaceae/Vauquelinia_californica.html.
Accessed: 2/4/2004.
- Fletcher, R. 1979. *Vauquelinia pauciflora*. Report for the U.S. Forest Service. Albuquerque, New Mexico.
- Hess, W.J. and J. Henrickson. 1987. A taxonomic revision of *Vauquelinia* (Rosaceae). Sida 12(1):101-163.
<http://www.igin.com/Database/treelinks/arizonarose.html>. Arizona Rosewood. Accessed: 2/4/2004.
- Integrated Taxonomic Information System (ITIS). Retrieved 2/4/2004 from ITIS,
<http://www.itis.usda.gov>.
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Vauquelinia californica* subsp. *pauciflora* (Standl.) W.J. Hess & Henr. http://mobot.mobot.org/cgi-bin/search_vast. Accessed: 4 Feb 2004.
- Mulrean, E., Ed. 1997. Arizona Rosewood and Palo Blanco. Arid Zone Trees, vol. 4, issue 8.
<http://www.aridzonetrees.com/aztimes/aztimes97/aug97vol4-8.htm>. Accessed: 2/4/2004.
- NatureServe. 2003. NatureServe Explorer: An online encyclopedia of life [web application]. Version 1.8. Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. (Accessed: February 4, 2004).
- Phillips, B.G., N. Brian, J. Mazzoni, and L.T. Green III. 1982. Status report for *Vauquelinia pauciflora* Standley. Prepared for U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 11pp.
- Rutman, S. 1990. Memo to Arizona Plant Recovery Team Members concerning New Mexico Plant Recovery Team Meeting Information. USDI, Fish and Wildlife Service, Ecological Services. Phoenix, Arizona.
- Schalau, J. 2002. Arizona Rosewood. Backyard Gardener, Arizona Cooperative Extension.
<http://cals.arizona.edu/yavapai/anr/hort/byg/archive/arizonarosewood.html>. Accessed: 2/4/2004.
- Spellenberg, R. 1979. A report on the survey for threatened and endangered plant species in Guadalupe Canyon and vicinity, Hidalgo Co., New Mexico. Prepared for the Heritage Program, N.M. Dept. Natural Resources, Santa Fe, New Mexico.
- Standley, P.C. 1918. Six new species of trees and shrubs from Mexico. In Proceedings of the

- Biological Society of Washington 31: 132-133.
- The Arboretum at Arizona State University. *Vauquelinia californica*, web abstract. Accessed: 2/4/2004 from <http://www.asu.edu/fm/plantlist/arizonarose>.
- Turner, R.M., J.E. Bowers, and T.L. Burgess. 1995. Sonoran Desert Plants, an ecological atlas. The University of Arizona Press. Tucson, Arizona. Pp. 395-396.
- U.S. National Herbarium Type Specimen Register (US). Accessed: 2/4/2004 from <http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>
- USDA, Forest Service Region 3. 1990. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, NRCS. 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- USDI, Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants; Review of Plant Taxa for Listing as Endangered or Threatened Species. Notice of Review. Federal Register 50(188): 00056.
- USDI, Fish and Wildlife Service. 1990. Endangered and Threatened Wildlife and Plants; Review of Plant Taxa for Listing as Endangered or Threatened Species; Notice of Review. Federal Register 55(35): 6229.
- USDI, Fish and Wildlife Service. 1993. Plant Taxa for Listing as Endangered or Threatened Species; Notice of Review. Federal Register 58(188): 51189.
- 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): 7604.
- Wells, P.V. and R.R. Johnson. 1964. *Vauquelinia pauciflora* (Rosaceae,) from Guadalupe Canyon, Arizona: A species of trees newly reported for the United States. The Southwestern Naturalist 9(3): 151-154.

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 Marc Baker – Private Consultant, Camp Verde, Arizona.

ADDITIONAL INFORMATION:

The genus name *Vauquelinia* is for the French chemist Louis Nicolas Vauquelin (1763-1829). The species name *californica* is for the state of California, while the subspecies name *pauciflora* means few-flower.

Revised: 1980-xx-xx (ANHP)
 1991-11-11 (SR)
 1994-10-17 (PLW)
 1994-12-12 (DBI)
 1998-01-12 (SSS)
 2004-03-05 (SMS)

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