

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

Plant Abstract

ElementCode: PDROS1B212

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Potentilla sanguinea* Rydberg

COMMON NAME: Flagstaff cinquefoil, scarlet cinquefoil, Thurber's cinquefoil

SYNONYMS: *Potentilla thurberi* var. *sanguinea*

FAMILY: Rosaceae

AUTHOR, PLACE OF PUBLICATION: Rydberg, North American Flora 22(4): 324, 1908.

TYPE LOCALITY: USA. Arizona. Coconino County. Walnut Canyon.

TYPE SPECIMEN: NY Specimen ID: 436437. D.T. McDougal (331), 1898

TAXONOMIC UNIQUENESS: There are 22 genera in the *Rosaceae* family and 24 species of *Potentilla* found in Arizona.

DESCRIPTION: Perennial, with a thick woody tap-root and a very short caudex; stems 50-60 cm high, light-green, appressed-pubescent, branched above, branches erect; basal leaves pinnately 7-foliolate with closely approximate leaflets; petioles 1-1.5 dm long, with more spreading pubescence; leaflets 2-5 cm long, 1-1.5 cm wide, oblong or oblong-ob lanceolate, serrate, light-green, puberulent on both sides and slightly silky on the veins beneath; lower stem-leaves similar, but more inclined to be digitate, and with shorter petioles; uppermost ones tenate or simple; stipules large, lanceolate, 1-2 cm long; hypanthium silky and puberulent; bractlets linear-lanceolate, about 5 mm long, acute; sepals narrowly lanceolate, acuminate, about 7 mm long; petals red-orange, exceeding the sepals, obovate; stamens about 25.

AIDS TO IDENTIFICATION: Distinguished from other varieties of *P. thurberi* in that the lower pair of leaflets is often offset by a millimeter or two from the other leaflets. Petals are red-orange distally, darker toward center. Leaflets are green and only sparsely hairy on both sides, with the teeth often confined to the upper half of the leaflet, but some are toothed from the apex to the base. Many leaflets of *P. sanguinea* are toothed only in the distal half of the leaf, while *P. thurberi* is always toothed proximally as well. Some *P. thurberi* specimens appear to be more hirsute on the ventral side with hairs primarily on the veins, but others are similar to *P. sanguinea* specimens.

ILLUSTRATIONS:

Color photo of holotype and isotype (NY 436437 in NYBG at <http://sweetgum.nybg.org/common/imagedisplay.php?irn=33045>)

Color photo of isotype (Smithsonian NMNH Barcode 00095580)

Color photo Mark Daniels, Northern Arizona University, Ecological Restoration Institute
Photos and Herbarium Mounts:

<http://swbiodiversity.org/seinet/taxa/index.php?taxon=Potentilla%20sanguinea>.

TOTAL RANGE: Coconino and Navajo Counties, Arizona.

RANGE WITHIN ARIZONA: Bill Williams Mountain, Lake Mary Rd. area in southern Flagstaff east to Walnut Canyon, south to Bar M and Oak Creek Canyons, and southeast along Mogollon Rim to collections north of Payson and south of Heber.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial

PHENOLOGY: Flowers from July – September, possibly as early as June and as late as October.

BIOLOGY: Very little is currently known about the biology of this species.

HABITAT: Natural habitat has not been determined. One population was found in sandy, non-rocky soils in a sunny area of open ponderosa pine forest. Another population was documented in full sun along an interstate highway south of Flagstaff.

ELEVATION: Currently known from approx. 6800-7600 ft, although it may be found at lower elevations south and east of Flagstaff.

EXPOSURE: Not yet known, has been found on a northern exposure at two locations.

SUBSTRATE: Not known. The Flagstaff population is found on cindery road fill. The population near Sandy's Canyon is on fine-textured, sandy soil.

PLANT COMMUNITY: Ponderosa pine forests. Associated species include: *Senecio actinella* (Flagstaff ragwort), *Festuca arizonica* (Arizona fescue), *Koeleria macrantha* (junegrass), *Muhlenbergia montana* (mountain muhly), *Vicia americana* (American vetch), *Achillea millefolium* (common yarrow), *Eriogonum racemosum* (redroot buckwheat), *Antennaria parvifolia* (smalleaf pussytoes), *Potentilla crinita* (bearded cinquefoil), *Astragalus humistratus* (groundcover milkvetch).

POPULATION HISTORY AND TRENDS: Unknown for Arizona, but considered critically imperiled by NatureServe. There are nine known collection sites currently mapped

and two historical collections from Oak Creek and Walnut Canyon (the type locality). Recent collections (2008-2014) have expanded the known range west to Bill Williams Mountain and east to the Heber locality. The majority of collections do not report any population data. However, for the site just south of Flagstaff and situated along the highway right-of-ways, it was noted in 2016 (J. Springer, pers. comm.) that the population was much smaller than 4-5 years ago, probably due to destruction by roadwork.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: Not ranked
OTHER STATUS: None

MANAGEMENT FACTORS: Natural habitat currently unknown. Some of the existing documented populations are subject to roadbuilding and road salting activities, social trails, automobile traffic and overcollecting. Effects of fire and grazing on this species are unknown, but plant may be susceptible to intense wildfire, fire suppression or overgrazing in its natural habitat. Seed production may be poor; thus lack of pollinators may be a factor. Invasive knapweed may also become a threat to at least one population (Springer 2016).

CONSERVATION MEASURES TAKEN: None specified.

SUGGESTED PROJECTS: Additional surveys should be conducted, particularly in Walnut Canyon National Monument and canyons to the east and south of Flagstaff, and Oak Creek Canyon in particular because the species was collected there historically. Plant should also be given ranking status.

LAND MANAGEMENT/OWNERSHIP: City of Flagstaff or Coconino County; USFS - Coconino and Apache-Sitgreaves National Forests. Possibly also NPS - Walnut Canyon National Monument.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Kearney, T.H., R.H. Peebles with collaborators. 1951. Arizona flora. Second edition with supplement by J.T. Howell, E. McClintock and collaborators. 1960. University of California Press. Berkeley, California. 774 pages.
- Rink, Glen. 2016. Personal communication. Emails to S. Tonn, AZGFD, dated 6/6 and 6/16, 2016.
- Rydberg, A. 1908. North American Flora: Rosaceae (pars). Volume 22, Part 4. New York Botanical Garden.
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Southwest Environmental Information Network. 2007. Phoenix, AZ. Available at:
<http://seinet.asu.edu/seinet/index.jsp>. Accessed January 14, 2008.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Barbara Ertter, University of California, Berkeley
James Reveal, Cornell University
Sheila Murray, Arboretum at Flagstaff
Susan Nyoka, Northern Arizona University
Judy Springer, Northern Arizona University
Glen Rink, Northern Arizona University

ADDITIONAL INFORMATION:

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