

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

Plant Abstract

Element Code: PDSAX0U0F0

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Saxifraga debilis*
COMMON NAME: Pygmy Saxifrage
SYNONYMS: *Saxifraga cernua* var. *debilis*, *S. hyperborean* subsp. *debilis*, *S. rivularis* var. *debilis*, *S. rivularis*.
FAMILY: Saxifragaceae

AUTHOR, PLACE OF PUBLICATION: Engelmann, George (ex Asa Gray). Proc. Acad. Nat. Sci. Philadelphia 15(3): 62. 1963[1864].

TYPE LOCALITY: Headwaters of Clear Creek and the alpine ridges lying east of Middle Park.

TYPE SPECIMEN: GH 51442 (Type). C.C. Parry #167. 1861.

TAXONOMIC UNIQUENESS: There are over 100 species, subspecies and varieties of the genus *Saxifraga* in the United States and Canada. There are also differing opinions regarding the taxonomy of the species in Arizona. The more recent treatment is by Elvander 1992. He presents the family Saxifragaceae as represented by four genera: *Parnassia*, *Heuchera*, *Lithophragma*, and *Saxifraga*. The genus *Saxifraga* has six species in the State: *flagellaris*, *caespitosa*, *rivularis*, *odontoloma*, *eriophora*, and *rhomboidea*. Note that *S. debilis* is not included in this treatment. The original treatment for Arizona is Kearney and Peebles 1960. They recognize a total of nine genera for the family, and also six, but somewhat different species of *Saxifraga*: *S. arguta*, *eriophora*, *rhomboidea*, *flagellaris*, *caespitosa*, and *debilis*. (*S. arguta* and *S. debilis* have been replaced with *S. rivularis* and *S. odontoloma*.) The Arizona Heritage Program generally follows the USFWS nomenclature. In this case, this official taxonomy more closely follows the older treatment presented in Kearney and Peebles 1960. Although there are significant differences between these two versions at the species level, there is actually more agreement at the genus level. In a subsequent division of the genera presented in Kearney and Peebles, the herbaceous species were split from the more woody or shrubby species. As a result, the four herbaceous genera, *Parnassia*, *Heuchera*, *Lithophragma*, and *Saxifraga*, remain identical.

S. debilis is considered *S. rivularis* by the more modern authors even if not yet officially recognized by the USFWS.

DESCRIPTION: Plants usually densely tufted, sometimes loosely so, not stoloniferous, not rhizomatous. Leaves basal and cauline, (3-5, proximal similar to basal); petiole ± flattened, 5-

70 mm; blade round or reniform, (3-)5-7-lobed (lobes obtuse), (3-)4.5-6.7(-10.3) mm, slightly fleshy, margins entire, eciliate, surfaces glabrous. Inflorescences 2-3(-5)-flowered, capitate cymes, sometimes solitary flowers, (flowers subsessile), (3-)6.7-9(-19.4) cm, tangled, nonglandular-hairy; bracts petiolate. Flowers (hypanthium V-shaped in longisection, glabrous or sparsely short stipitate-glandular); sepals erect, oblong to ovate, (0.7-1 mm wide), margins eciliate, surfaces abaxially glabrous; petals white to pale purple, not spotted, oblong, (1.7-)3-4.4(-6.2) mm, ± equaling sepals; ovary 1/2 inferior (Flora of N America 2015).

AIDS TO IDENTIFICATION: Foliage leaves not all basal, the stems leafy below the inflorescence; leaves deeply dentate or lobed, not bristly-ciliate, the hairs, if any, soft and slender or glandular; plants not caespitose, bulbiferous at base, glabrous or sparsely pubescent, flowering stems few or solitary, 1- to 3-flowered (Kearney and Peebles 1960).....*S. debilis*

ILLUSTRATIONS:

Photo and Herbarium Mounts: <http://swbiodiversity.org/seinet/taxa/index.php>.

Photo and Herbarium Mounts: <http://eol.org/pages/583340/media>.

TOTAL RANGE: North America including Canada, Greenland to Scandinavia. In the continental U.S.: south-central Montana, north-western Wyoming, central Colorado (along the Rocky Mountains), north-east Utah and other scattered locations, north-central New Mexico and Arizona near Flagstaff.

RANGE WITHIN ARIZONA: Occurs only in the San Francisco Mountain, north of Flagstaff.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial herb.

PHENOLOGY: Flowering in summer. Arizona collections noted flowers between July 16 and August 10, and fruits were observed on September 11.

BIOLOGY:

HABITAT: Alpine meadows, snow beds, open gravel and silt, seepage areas, stream and lake margins, shady taluses, ravines or cliffs (Flora of North America 2015). Arizona collections often mentioned protected rocks and crevices, moist shady areas and wet seeps.

ELEVATION: Range-wide: 8200 – 13120 feet (2500-4000 m) from Flora of North America 2015. Based on actual collections in Arizona: 10060 – 12450 feet (3070-3800m).

EXPOSURE: Probably any. Collections were made from both NE (mesic) and SW (xeric) aspects, and from 30 degree slopes.

SUBSTRATE: Shallow loam and lava boulders were recorded from one site. Moist substrates were also frequently mentioned.

PLANT COMMUNITY: Sub-alpine, alpine tundra and spruce-fir communities. Plant species associated with collections include: *Ribes*, *Solidago*, *Fragaria*, *Botrychium lunaria*, *Heuchera*, *Geum*, *Cystopteris* and *Primula parryi*.

POPULATION HISTORY AND TRENDS: Unknown for Arizona. Although the majority of the collections are historical or from the 1980's, more recent collections were made in 2006, 2009 and 2014. Since the species has been known from this limited area for about 80 years, appears to be well adapted to this sub-alpine or alpine-tundra moist rocky crevice habitat and was not noted as being rare, it can be surmised that there are well entrenched populations and the trend appears to be stable.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.

STATE STATUS: None.

OTHER STATUS: None.

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None. All collections are on national forest lands and the majority are on lands designated as wilderness.

SUGGESTED PROJECTS:

LAND MANAGEMENT/OWNERSHIP: All 10 collection sites are within USFS Coconino National Forest, and seven are with the Kachina Peaks Wilderness Area.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Elvander, Patrick. 1992. Saxifragaceae – Saxifrage Family. Jour. Az-Nev Academy Science 26(1): 36-41.

Flora of North America (eFloras), accessed 04/24/2015,
http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=25009202.

Kearney, Thomas H. and Robert H. Peebles. 1960. Arizona Flora, 2nd ed. with supplement. University of California Press, Berkeley. 1085 p.

JStor| Global Plants, accessed 04/24/2015,

<http://plants.jstor.org/stable/10.5555/al.ap.specimen.gh00051442>.

Tropicos, accessed 04/24/2015, <http://www.tropicos.org/Name/29100585>.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION: *Saxifraga debilis* is known only from the central and southern Rocky Mountains, where it is often called *S. rivularis* (a species not present in the area). Its V-shaped (in longisection), glabrous or sparsely short stipitate-glandular hypanthia, and larger, more-lobed leaves (similar to *S. bracteata* in this) distinguish it from *S. hyperborea*, which is sometimes sympatric (Flora of North America 2015).

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