ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDROS1J153
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Rosa stellata* ssp. *abyssa* A. Phillips
COMMON NAME: Grand Canyon rose, desert rose
SYNONYMS: *Rosa stellata* var. *abyssa* (A. Phillips) N.H. Holmgren
FAMILY: Rosaceae

AUTHOR, PLACE OF PUBLICATION: A.M. Phillips III, Madroño 39(1): 31-35, f. 1. 1992.

TYPE LOCALITY: Twin Point, Shivwits Plateau, Mohave County, Arizona, USA, 1823 m.

TYPE SPECIMEN: HT: ARIZ. A.M. Phillips, III #80-103, 15 June 1980. IT: ASC, ASU, DES, MNA, MO, NY, UNLV, UNM, US.

TAXONOMIC UNIQUENESS: The subspecies *abyssa* is 1 of 3 in the species *Rosa stellata*; there are 56 species in the genus. "The most apparent morphological difference between *R. s.* ssp. *abyssa* and all other taxa of *R. stellata* is the consistent presence of very robust, dense prickles on the hypanthium of the Arizona specimens. Although the hypanthium prickles are somewhat variable in the specimens from New Mexico and Texas, they are not as dense as in Arizona specimens." (Phillips 1992).

DESCRIPTION: Low-growing clonal, woody shrub with numerous stiff upright stems 2.5-15 dm (10-60 in.) long, and armed with numerous long straight white to straw-colored paired infrastipular thorns, and with or without scattered internodal bristles and prickles. Stems brown, densely pubescent with short stipitate glands, these often encircled by stiff, white, stellately arranged basal pubescence. Leaves with 3-5 wedge shaped leaflets, rounded at broad apex, 5-12 mm long and 3-9 mm wide, sometimes with a few bristles, without glands except immediately below flowers, with 4-8 teeth above the middle; stipules attached to the petiole for half or more of their length; leaves turn bright red in the fall. Flowers solitary at the ends of the stems, about 5 cm (2 in) across; sepals oval, broad at base, to 2.5 cm (1.0 in) long with 2 or more lobes and with free tips; petals dark pink, obovate, 1.5-2.0 cm (0.6-0.8 in.) wide and slightly longer. Hypanthium densely bristly with long, stout, straight prickles, some gland-tipped. Fruit is very spiny, roundish, enclosed by the sepals, 1.0-1.8 cm in diameter; seeds brown, smooth, about 4.0 mm long.

AIDS TO IDENTIFICATION: Three leaflets, length equals width; white straight thorns; densely bristly hypanthium. Leaves turn bright red in the fall and contrast with the white thorns. The Arizona rose (*Rosa woodsii*) has brown curved spines, lacks stellate pubescence, has fruits without prickles, and is generally found at higher elevations in more mesic habitats (Phillips 1999).

ILLUSTRATIONS:
Line drawing (Holland et al. 1980 Plate 9)
Line drawing (Phillips 1992).
Line drawing (USFWS).
Color photo of Isotype (MO-4031664)
Color photo of Isotype (NY-429907)
Color photo of Isotype (US-3232490)
Color photos at http://swbiodiversity.org/seinet/taxa/index.php?taxon=11808

TOTAL RANGE: Arizona Strip, rims (mainly north rims) of the Grand Canyon, Kanab Canyon, and junction of Little Colorado River and Big Canyon in northern Arizona.

RANGE WITHIN ARIZONA: Coconino and Mohave counties. See "**Total Range**."

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Woody perennial shrub.

PHENOLOGY: Flowering May-June; fruiting September.

BIOLOGY: Most observed young plants come from underground vegetative parts and not from rose fruits.

HABITAT: For the most part, all known populations are on or near canyon rims or the tops of cliffs at the edges of mesas or plateaus, along low ledges at depressions caused by breccia pipes. Kanab Canyon: rim on low limestone breaks and in small, shallow drainages. Twin Point: on deeper soils along west edge, Kaibab limestone bedrock outcropping in places. Cave Canyon: along canyon bottom, on terrace (Embrey 2015).

ELEVATION: 4,500 - 7,540 ft. (1373 - 2300 m).

EXPOSURE: Open

SUBSTRATE: Limestone-red clay soils. Gravelly soils derived from Tinoweap Kaibab limestone (Phillips 1999).

PLANT COMMUNITY: Great Basin Conifer Woodland, and Great Basin Desertscrub. Associated species include: *Agave utahensis* (Utah agave), *Amelanchier utahensis* (Utah serviceberry), *Artemisia tridentata* (Big sagebrush), *Astragalus newberryi* (Newberry's milk-vetch), *Coleogyne ramosissima* (Blackbush), *Ephedra viridis* (Green Mormon-tea), *Eriogonum* (buckwheat), *Fallugia paradoxa* (Apache-plume), *Fendlera rupicola* (Cliff fendler-bush), *Gutierrezia* (snakeweed), *Juniperus osteosperma* (Utah juniper), *Pinus monophylla* (Single-leaf pine), *Purshia mexicana* (Mexican cliffrose), *P. stansburiana*

(Stansbury cliffrose), *Shepherdia rotundifolia* (Roundleaf buffaloberry), and *Yucca baccata* (Fleshy-fruit Yucca). (From collections in SEINet, accessed 2005).

POPULATION TRENDS: Kanab Canyon population decreasing; trends at Twin Point unknown. A SEINet search reveals that this plant is probably more common than previously thought, as it has now been collected at numerous points in the Grand Canyon region (SEINet 2020).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[Category 2 (USDI, FWS 1990)]

STATE STATUS: Salvage Restricted (ARS, ANPL accessed 2011)
[Salvage Restricted (ARS, ANPL 1993)]

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 2013)
[Forest Service Sensitive (USDA, FS Region 3 1990, 1999, 2007)]
Bureau of Land Management Sensitive (USDI, BLM AZ 2017)
[Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005, 2008, 2010)]

MANAGEMENT FACTORS: Wildlife may browse on this plant, especially rabbits; grows in breccia pipes where uranium prospects have been concentrated. Due to remoteness, threats are low (NatureServe 2020).

CONSERVATION MEASURES TAKEN: BLM established a monitoring plot at Clear Water Point.

SUGGESTED PROJECTS: Search other potential sites between Kaibab and Shivwits Plateaus. Potential habitat on the Kaibab National Forest is between Jumpup Point and Snake Gulch. Surveys in proper habitat. Continued monitoring and mapping of known sites to establish trends.

LAND MANAGEMENT/OWNERSHIP: BIA - Navajo Nation; BLM - Arizona Strip Field Office; NPS - Grand Canyon National Park and Grand Canyon Parashant National Monument.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

R.C. Barneby - New York Botanical Gardens, Bronx.
Art Phillips - Private consultant, Colorado.

ADDITIONAL INFORMATION:

Phillips (1992): The Arizona localities of *Rosa stellata* are disjunct by at least 750 km (465 miles) from the nearest localities of the species in New Mexico. Lewis (1965) did not include Arizona specimens in his monograph of the group, although the species has been known from the rims of the Grand Canyon since 1908. Except for two localities west of Grand Canyon Village (Cave Canyon and Cataract Canyon), the plants are north of the Grand Canyon at the rims of canyons and points. A third locality (Eremita Mesa) on the South Rim has apparently been lost (Brian 2000). Increasingly, areas on public lands are undergoing development for uranium mining. The populations are local, consisting of a few to a few hundred plants in an area up to a few acres in size, and the few known localities are widely separated.

R.C. Barneby (Summer, 1979): saw plants in great abundance on Kaibab Plateau--probably less rare than overlooked.

The genus name, *Rosa*, is the ancient Latin name. The species name, *stellata*, refers to the stellate trichomes. (Vines, reprint 1994).

Revised: 1991-12-05 (JSP)
1992-05-21 (BGP)
1992-09-14 (BKP)
2002-01-04 (SMS)
2005-08-18 (SMS)
2020-07-24 (TME)

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