

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

Plant Abstract

Element Code: PDPRI080H0

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE



ME: *Primula specuicola*

COMMON NAME: Grand Canyon primrose, cave primrose, cave-dwelling primrose, cavedwelling primrose, Easterflower, alcove primrose

SYNONYMS: *Primula hunnewellii* Fernald

FAMILY: Primulaceae

AUTHOR, PLACE OF PUBLICATION: Rydberg, Bull. Torrey Bot. Club 40: 461, 1913.

TYPE LOCALITY: Along the San Juan River near Bluffs, Alt. 1200-1500 m, Utah, United States of America.

TYPE SPECIMEN: HT: NY. P.A. Rydberg 9882 with A.O. Garrett, 25 Aug 1911-29 Aug 1911.
IT: US.

TAXONOMIC UNIQUENESS: The species *specuicola* is 1 of 26 in the genus *Primula*.
Primula hunnewellii has been combined within the species *P. specuicola*.

DESCRIPTION: Herbaceous perennial, 6-28 cm (2.4-11.0 in.) tall, with stout, short prostrate stems on or below the ground, which root at the nodes and produces shoots. Leaves bicolor, 2-20 cm (0.8-8.0 in.) long, 3-33 mm wide; petioles about the same length as leaf blades, winged. Leaf blades are spatulate to oblanceolate or elliptic, mealy-white below (at least when young), and green above. Often the old withered leaves remain attached to the base of the stem. Numerous bracts are 4-8 mm long, lance-attenuate, swollen at the base, more or less mealy. The leaf margins are sinuate-dentate but not glandular. Flowers in loose umbels, 5-40 flowered, the pedicels 8-34 mm long and ascending. Flowers are purple or dark violet to pink, with a yellow center. Calyx 5.0-8.5 mm long, mealy-white in color, lobes 2-4 mm long, diverging. Corolla tube 8-10 mm long, the lobes 3-8 mm long. The Stamens are attached to the inside of the petals. Elliptical capsules are shorter than the calyx, 3-5 mm long and 3 mm wide; seeds reticulate (roughened) and 5 mm long.

AIDS TO IDENTIFICATION: “*Primula specuicola* is a distinctive species with large corollas, long pedicels, and long, sharply dentate, farinose leaves. A few specimens with short pedicels superficially resemble *P. incana* but the latter is distinguished by its smaller, homostylous flowers and longer capsules as well as its higher chromosome number.” (Kelso, 1991).

ILLUSTRATIONS: Color photo of Holotype collection (NYBG, accessed from http://scisun.nybg.org:8890/searchdb/owa/wwwcatalogrenz.detail_list)
Color photo of Isotype collection (USNH, accessed from <http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>)
Line drawing (Berniece A. Andersen, in *Desert Plants of Utah*, 1996)
Color photo (in *Southwest Colorado Wildflowers*, <http://www.swcoloradowildflowers.com>)
Color photos (<http://www.desertusa.com/mag00/jan/papr/plant.html>)
Color photos (Jay Lunn 2000, in <http://members.shaw.ca/primulaworld2/gallery/pw2/specuicolaJL2.htm>)
Line drawing (in N. Brian, 2000)
Color photo (N. Brian, 2000)
Color photos of plant and habitat (K. Warren, in N. Brian 2000)
Line drawing (Kelso, 1991: f. 3, p. 88)

TOTAL RANGE: An endemic of the canyons of the Colorado in northern Arizona and southern Utah.

RANGE WITHIN ARIZONA: Endemic to the canyons of the Colorado River in Coconino and Mohave counties, including the Grand Canyon.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial herb.

PHENOLOGY: Flowers from March to May (buds as early as January), with fruiting to August. The coincidence of flowering time with Easter, in most years, accounts for the common name applied in southeastern Utah (Welsh et al. 1993).

BIOLOGY: Most primroses have a slightly offensive odor, sometimes reminiscent of skunks or carrion. This odor attracts flying insects to the flower such as muscid flies, which resemble the common house fly. As they fly about to other primrose, they complete the process of pollination.

HABITAT: Grows in moist sites from hanging gardens or alcoves from 3500-5200 feet in elevation in Utah, and 1250 to 7600 feet in Arizona. In the hanging gardens, the plants either grow within tiny exfoliations of the overhanging wall or in sandy accumulations at the base of the wall. Commonly in association with seeps and springs in canyons with limestone cliffs.

ELEVATION: 1,250 - 7,600 feet (380-2320 m).

EXPOSURE: Variable; slope 0-100%.

SUBSTRATE: Kaibab, Muav, and Redwall limestone cliffs. Sandy alcove faces, colluvial slopes, and less commonly sandy drainages.

PLANT COMMUNITY: Hanging garden communities. Dominant associated plants include: *Adiantum capillus-veneris* (southern maidenhair-fern), *Carex* sp. (sedge), *Cirsium rydbergii* (Rydberg's thistle), and *Mimulus eastwoodiae* (Eastwood monkeyflower). (Welsh 1979).

POPULATION TRENDS: In 1979 (Welsh et al.), there were 10 estimated populations, with few to several hundred per population, which appeared to be stable.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 under *P. hunnewellii*, USDI, FWS 1993]
[C2, under *P. hunnewellii*, USDI, FWS 1992]
[C2 under *P. hunnewellii*, USDI, FWS 1990]
[Category 3C, 1985 Notice of Review]
[Category 3C, 1980 Notice of Review]
[PE, 1975 Notice of Review]

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: Threats unknown, but probably low due to habitat and remoteness. Recreation may be threat, but not confirmed.

CONSERVATION MEASURES TAKEN: Protected within Grand Canyon National Park, and Arches National Park.

SUGGESTED PROJECTS: Surveys to determine current population status and range.

LAND MANAGEMENT/OWNERSHIP: BLM – Arizona Strip Field Office; NPS – Arches and Grand Canyon National Parks.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

Primula hunnewellii appears to be a smaller version of *P. specuicola* (but only smaller by millimeters), and is considered a synonym by many.

“*Primula*”, Latin for “first” refers to the plant’s early blooming time, and “*specuicola*” is Latin for “cave” “inhabiting”.

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