

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

Plant Abstract

Element Code: PDHYD0C220

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Phacelia howelliana*

COMMON NAME: Howell phacelia, Harlequin phacelia, Howell scorpion-weed

SYNONYMS:

FAMILY: Hydrophyllaceae

AUTHOR, PLACE OF PUBLICATION: N.D. Atwood, Rhodora 74(800): 456-462. 1972.

TYPE LOCALITY: 0.4 miles N of Bluff on Hwy 163, San Juan County, Utah, United States of America.

TYPE SPECIMEN: HT: BRY? N.D. Atwood 2454, 13 May 1970. IT: ARIZ, GH, NYBG, US.

TAXONOMIC UNIQUENESS: A distinct species in a polymorphic American genus of about 200 species, mostly of the western U.S. and adjacent Mexico. USDA, NRCS (2004) reports the species *howelliana* is 1 of 158 in the genus *Phacelia*.

DESCRIPTION: Herbaceous annual from 9.0-23.0 cm (3.5-9 in) tall, with glandular and hirsute stems that are mostly branched and leafy at the base. The leaves are oblong to oval, 2-6 cm long and 1-2.5 cm wide, irregularly crenate to lobed, and strigose and slightly glandular; the petiole to 5 cm long. The inflorescence consists of branched scorpioid cymes; pedicels to 2 mm long. Sepals are linear to narrowly oblanceolate, 3.5-4.5 mm long and 1-1.2 mm wide, glandular and hirsute. The corolla is 5-6 mm long and 6-7 mm wide, rotate to funnel form, the lobes pale violet to blue, the tube white, stamens and style exserted 3-4 mm, the style shorter than the stamens, bifid $\frac{3}{4}$ its length, the lower $\frac{1}{4}$ pubescent. Capsules are oblong to subglobose, glandular and hirsutulous, especially near the apex; seeds 4, brown, 3.2-4 mm long and 1.4-1.8 mm wide, elliptic, the margins corrugated, involute to flattened, the ventral surface is pitted, excavated and divided by a prominent ridge, this sometimes curved to one side and barely corrugated. The dorsal surface is reddish brown, smooth and surrounded by a lighter margin.

AIDS TO IDENTIFICATION: Similar to *P. crenulata* and *P. splendens*. Differs from the former by the distinctly bicolored corollas and from the latter by the basally branched stems, strigose and glandular leaves (vs. glabrous), white corolla tubes (vs. yellowish), and seed morphology.

ILLUSTRATIONS: Line Drawing and Color photo (Utah Rare Plant Field Guide *in* http://www.utahrareplants.org/rpg_species.html)

Color photo of Isotype specimen (NYBG in

http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list?this_id=4415011).

TOTAL RANGE: Extreme northern Arizona and Southeastern Utah.

RANGE WITHIN ARIZONA: Extreme northern Arizona.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous annual.

PHENOLOGY: Flowers from April to June.

BIOLOGY:

HABITAT: Clay and basalt hills in salt desert and other desert shrub communities, and in sparse pinyon-juniper communities.

ELEVATION: 3,690-5,003 ft (1,125-1,525 m).

EXPOSURE:

SUBSTRATE: Clay and basalt. Isotype collections report "...on rocky clay soil."

PLANT COMMUNITY: Salt desert and other desert shrub communities, and in sparse pinyon-juniper communities.

POPULATION HISTORY AND TRENDS: This plant is not known to be abundant anywhere in its range. The populations are disjunct.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:

None (USDI, FWS 1996)
[3C (USDI, FWS 1985)]
[C2, USDI, FWS 1980)]

STATE STATUS:

None

OTHER STATUS:

On Utah list of threatened, endangered and sensitive species

MANAGEMENT FACTORS: May be threatened by industrial development and other changes in land use, as well as the rising of the water in Lake Powell.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Surveys to determine the current range and population status should be performed. A monitoring program should be established. Future developments should be excluded from population areas.

LAND MANAGEMENT/OWNERSHIP: BIA - Navajo Nation; BLM; NPS - Glen Canyon National Recreation Area, and Arches and Canyonlands National Park; Utah State; Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Atwood, N.D. 1972. New Species in the *Phacelia Crenulata* group (Hydrophyllaceae). *Rhodora* 74 (800): 451-468.
- Cronquist, A. et al. Date?? Intermountain Flora. The New York Botanical Garden. Bronx, New York. Volume Four. Pp: 188.
- Harvard University Herbaria (HUH). 2001. Index of Botanical Specimens. Accessed: 6/10/2004, from <http://brimsa.huh.harvard.edu/cms-wb/specimens>.
- Integrated Taxonomic Information System (ITIS). Retrieved 6/10/2004 from ITIS, <http://www.itis.usda.gov>.
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Phacelia howelliana* N.D. Atwood. http://mobot.mobot.org/cgi-bin/search_vast. Accessed: 10 Jun 2004.
- NatureServe. 2004. NatureServe Explorer: An online encyclopedia of life [web application]. Version 3.0. NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. (Accessed: April 20, 2004).
- SEINet. Herbarium Collections Search Result. Accessed 6/10/2004 at <http://seinet.asu.edu/collections/list.jsp>.
- The New York Botanical Garden. NYBG Specimens Detailed Results. http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list. Accessed: 4/20/2004.
- U.S. National Herbarium Type Specimen Register (US). Accessed: 6/10/2004 from <http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>
- USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- Utah Rare Plant Field Guide. Available: http://www.utahrareplants.org/rpg_species.html.
- Welsh, S.L. et al. 1993. A Utah Flora. Brigham Young University. Provo, Utah. Pp: 364.
- Welsh, S.L. et al. 1979. Illustrated Manual of Proposed Endangered and Threatened Plants of Utah. Pp: 185.
- Welsh, S.L. 1979. Status Report for the USFWS. *Phacelia howelliana*.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Revised: 2004-04-23 (AMS)
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