

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

Plant Abstract

Element Code: PDCAC0D2M0

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Cylindropuntia x kelvinensis*
COMMON NAME: Kelvin cholla; Kelvin pricklypear; Kelvin's pricklypear
SYNONYMS: *Opuntia x kelvinensis*, *Opuntia kelvinensis*;
FAMILY: Cactacea

AUTHOR, PLACE OF PUBLICATION: *Opuntia x kelvinensis* V.E. Grant & K.A. Grant (pro sp.), Evolution 25(1): 155. 1971.

TYPE LOCALITY: United States of America, Arizona, Pima County, just south of Kelvin.

TYPE SPECIMEN: V. Grant 70-29, June 15, 1970, TEX. IT: NY.

TAXONOMIC UNIQUENESS: *Cylindropuntia x kelvinensis* is a hybrid between *Cylindropuntia fulgida* Engelm. and *C. spinosior* (Engelm.) Toumey. See "Additional Information" for comments by Benson (1982). *Kelvinensis* is 1 of ca. 35 species in the genus *Cylindropuntia*. *Cylindropuntia* was formerly treated as a subgenus of *Opuntia* but was separated by Pinkava et al. (2001) due to cylindrical stems and presence of papery epidermal sheaths on the spines.

DESCRIPTION: Succulent shrub with short basal trunk or ± 3 stems, 4 to 7 feet (1.2-2.2 m) high, and intricately branched. The larger terminal joints rather stout, 6-10 cm long (2.4-4 in) and 2.5-3.8 cm (1-1.5 in) in diameter. Tubercles are about twice as long as broad, 12-20 mm long, 6-9 mm broad, protruding 6-9 mm. Pale pink to gray spines are moderately dense on the joint, with (4)5-9 per areole, variable length (longest 1.9-2.5 cm long). The flower is ± 5 cm (2 in) in diameter, with few petaloids, which are usually pink or pale purple; stigma is yellow. Fruit is green or green tinged with yellow, fleshy at maturity, somewhat tuberculate, the umbilicus relatively shallow. Some fruits are proliferous but forming chains of only 2 or 3. Seeds are few, the ovules mostly abortive. (Benson, 1982).

AIDS TO IDENTIFICATION:

ILLUSTRATIONS: Color photo (E.F. Gilman, 2001: <http://www.hortpix.com/pc2944.htm>).
Color photos of plant and parts (Benson, 1982: fig. 301-304).
Color photo of plant and parts (ASU Herbarium Image, http://cochise.asu.edu/collections/vasc_image_library/ViewPhotos.jsp?id=303201).

Color photo of plant (E.F. Gilman, in Horticipia.Inc 2001,
http://www.csd.tamu.edu/FLORA/cgi/b98_map?genus=Opuntia&species=kelvinensis).

TOTAL RANGE: Endemic to Arizona.

RANGE WITHIN ARIZONA: Maricopa County: East Mesa. Pima County: Tucson. Pinal County: South side of Little Gila; SE of Florence; West of Kelvin; Walnut Canyon; and Box O Wash.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial succulent shrub/subshrub.

PHENOLOGY: Magenta flowers appear in May and June.

BIOLOGY:

HABITAT: Hills, ridges, and washes in the desert. Uncommon on rocky slopes and bajadas around southwestern part of Saguaro National Park (SNP).

ELEVATION: 1,312 – 3,033 ft (400-925 m). On the southwestern part of SNP, it has been found at 2,290 & 2,590 ft (700 & 790 m).

EXPOSURE: All.

SUBSTRATE:

PLANT COMMUNITY:

POPULATION HISTORY AND TRENDS:

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:

STATE STATUS: Salvage Restricted (ARS, ANPL 1999)

OTHER STATUS:

MANAGEMENT FACTORS: As with most cacti, this species is subject to horticultural collecting.

PROTECTIVE MEASURES TAKEN:**SUGGESTED PROJECTS:****LAND MANAGEMENT/OWNERSHIP:** NPS – Saguaro National Park.**SOURCES OF FURTHER INFORMATION****REFERENCES:**

- Arizona Revised Statutes. 1999. Arizona Native Plant Law, Appendix A.
- Arizona State University Vascular Plant Herbarium Image Library. Images of *Cylindropuntia x kelvinensis*. Accessed: 11/20/2002 at http://cochise.asu.edu/collections/vasc_image_library/ViewPhotos.jsp?id=303201.
- Baker, M.A. and D.J. Pinkava. 1987. A cytological and morphometric analysis of a triploid apomict, *Opuntia x kelvinensis* (subgenus *Cylindropuntia*, Cactaceae). *Brittonia*. 39(3), pp. 387-401.
- Benson, L. 1982. The Cacti of the United States and Canada. Stanford University Press, Stanford, California. Pp. 322-323, 915.
- Integrated Taxonomic Information System (ITIS). ITIS Standard Report. Retrieved 12/5/2002, <http://www.itis.usda.gov>.
- Hunt, D.R., Taylor, N.P. and Charles, G., 2006. New cactus lexicon. dh books.
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Opuntia x kelvinensis* V.E. Grant & K.A. Grant (pro sp.). <http://mobot.mobot.org/>. Accessed: 4 Dec 2002.
- Pinkava, D.J., Rebman, J.P. and Baker, M.A., 2001. Nomenclatural changes in *Cylindropuntia* and *Opuntia* (Cactaceae) and notes on interspecific hybridization. *Journal of the Arizona-Nevada Academy of Science*, 33(2), pp.150-150.
- Rondeau, R.J. et al. Flora ad vegetation of the Tucson Mountains, Pima County, Arizona. <http://eebweb.arizona.edu/HERB/TUCSONS/tucsonA-C.html>. Accessed: 6/11/2003.
- The New York Botanical Garden. NYBG Specimens Detailed Results. http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list?this_id=2006915. Accessed: 11/20/2002.
- USDA, NRCS. 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

- D.J. Pinkava, Retired (Emeritus), Arizona State University.
- Mark Baker, Camp Verde, Arizona.
- Wendy Hogson, Desert Botanical Garden, Phoenix, Arizona.

ADDITIONAL INFORMATION:

Per Benson (1982), “The characters of these populations are intermediate between those of *P. spinosior* and those of *P. fulgida*, either or both of which may occur intermingled with *P. kelvinensis*. A hybrid origin for the species was suggested by Peebles (1936), who pointed out that the tuberculate fruits and the apical cup or umbilicus of the fruit resembled the characters of *P. spinosior*, whereas the small number of petaloids, the compact crown of the plant, and the stoutness of the branches of some plants are characters similar to those of *P. fulgida* var. *mamillata* (cf. Benson, 1940/50/69).”

Benson (1982) also writes, “The recent extensive studies of V. & K. Grant, “dynamics of Clonal Microspecies in Cholla Cactus” (1971a), indicate several clonal microspecies, each composed of sterile interspecific hybrids maintained chiefly by asexual reproduction but probably with some sexual reproduction. These are derivatives of *P. spinosior* and *P. fulgida*. Two clones are thought to be F₁ hybrids; others appear to have been derived from later generations. ... *P. kelvinensis*, the name for the population series as a species, was applied to the complex of clones as a group. This, of course, raises the question of the status of the species.”

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