

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDHYD0F010

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Tricardia watsonii* Torr. Ex S. Wats.

COMMON NAME: Three hearts, Three-heart

SYNONYMS:

FAMILY: Hydrophyllaceae

AUTHOR, PLACE OF PUBLICATION: Torr. ex S. Watson, United states Geological Exploration [sic] of the Fortieth Parallel. Botany 258, pl. 24. 1871. {Botany Fortieth Parallel}

TYPE LOCALITY: Truckee Pass, Trinity Mountains, Nevada. Alt. 1219.2 m (4000 ft.). Harvard (2001), reports elevation of type as 4500 feet.

TYPE SPECIMEN: HT: NY-337231. S. Watson 887, May 1885? Harvard University Herbaria (HUH) label (GH-93571) states "Type," collected in May 1868 by S. Watson 887.

TAXONOMIC UNIQUENESS: Species *watsonii* is the only species in the genus *Tricardia*.

DESCRIPTION: Low herbaceous desert perennial from a stout woody base, 3-10 cm (1.2-4 in). Stems 10-30 cm (4-12 in) tall, with few leaves; Hickman (1993) reports stem length of 5-40 cm (2-16 in). Leaves are simple, generally in a basal rosette, on petioles 1-3 cm long; blades lance-shaped or oval, (2-)3-5(-9) cm ([0.8]1.2-2[3.5] in) long and 1.0-2.5 cm wide; upper leaves smaller, oval, entire, 1.0-1.5 cm long. Flowers are in loose clusters at the tips of the stems. The calyx is strongly dimorphic with three outer broad heart-shaped pinkish green lobes (5-9 mm long in flower and 9-25 mm long in fruit, scarious and veiny), and two inner narrow lobes (2-4 mm in flower and enlarged in fruit). Corolla bell-shaped to rotate, white or cream, marked with lavender, 5-6 mm x 6-8 mm; stamens included, unequal, attached; ovary chamber 1, style 1, 3-4 mm, tip lobed. Fruit a compressed capsule 7-9 mm long, glabrous; seeds 4-8, oblong, brown, scarious. (Falk et al., 2001; Hickman 1993)

AIDS TO IDENTIFICATION:

ILLUSTRATIONS: Line drawing (Watson. 1871).

Line drawing (*in* Falk et al., 2001)

Line drawing (*in* Anderson 1996: p. 42)

Color photo of Holotype (NY-337231, *in*

<http://207.156.243.8/emu/vh/specimen.php?irn=610667>)

Photo of Isolectotype (US-48054, in <http://ravenel.si.edu/botany/types/fullRecords.cfm?myFamily=>)

Color photo (Gary A. Monroe, 2002, in http://plants.usda.gov/cgi_bin/plant_search.cgi)

Color photo (Gary A. Monroe, 2002, in CalPhotos at http://elib.cs.berkeley.edu/cgi/img_query?)

Color photo (Gerald and Buff Corsi, 1999, in CalPhotos at http://elib.cs.berkeley.edu/cgi/img_query?)

Color photos (James M. Andre, 2004, in CalPhotos at http://elib.cs.berkeley.edu/cgi/img_query?)

TOTAL RANGE: Southwestern Utah, southern Nevada, and northwestern Arizona to southeastern California.

RANGE WITHIN ARIZONA: Beaver Dam, Grand Gulch Wash, near Muav Caves on south side on Grand Canyon, northwestern Mohave County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowering/fruitletting period, April to May. Anderson (1996) reports blooming period from April to June.

BIOLOGY: Monotypic genus, distinguished by its strongly dimorphic calyx. Occasional, but inconspicuous, often growing under shrubs. (Falk et al., 2001).

HABITAT: Dry, rocky canyon and slopes in desert ranges. Generally, on gravelly slopes and sandy loam flats in Joshua tree woodland and creosote bush scrub.

ELEVATION: Observed between 1,400 - 4,600 feet (427-1402 m) in Arizona. Per Hickman (1993), elevation ranges from 328-7,540 ft (100-2300 m).

EXPOSURE: Collected on NW-facing 30% slope.

SUBSTRATE: Sandy loam with gravel mixture, limestone or dolomite outcrops.

PLANT COMMUNITY: Joshua Tree Woodland, Creosote Bush Scrub, and Pinyon-Juniper Woodland communities. Associated species include: *Coleogyne ramosissima* (blackbush), *Ferocactus* (barrel-cactus), *Hilaria belangeri* (common curly-mesquite), *Mortonia utahensis* (Utah Mortonia), *Muhlenbergia* (muhly), *Yucca brevifolia* (Joshua Tree), and *Y. schidigera* (Mojave yucca). (SEINet, accessed 2005).

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: [Bureau of Land Management Sensitive
(USDI, BLM 2000, 2005)]

MANAGEMENT FACTORS:

CONSERVATION MEASURES TAKEN:

SUGGESTED PROJECTS: Survey for additional populations

LAND MANAGEMENT/OWNERSHIP: BLM – Arizona Strip Field Office; NPS – Grand Canyon National Park, and Lake Mead National Recreation Area.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

Revised: 1992-12-09 (JSP)
 1994-09-02 (DBI)
 2002-06-03 (SMS)
 2005-09-01 (SMS)

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