



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

Plant Abstract

Element Code: PDAP009012

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Cycladenia humilis* Benth. var. *jonesii* (Eastw.) Welsh & Atwood

COMMON NAME: Jones cycladenia, Jones waxy dogbane, Jones' waxydogbane

SYNONYMS: *Cycladenia jonesii* Eastwood

FAMILY: Apocynaceae

AUTHOR, PLACE OF PUBLICATION: *Cycladenia humilis* Benth. var. *jonesii* (Eastwood)

S.L. Welsh & N.D. Atwood, Great Basin Naturalist 35(4): 333. 1975 [1976]. *Cycladenia jonesii* A. Eastwood, Leaflets of Western Botany 3(7): 159-160. 1942.

TYPE LOCALITY: San Rafael Swell, Emery County, Utah, USA.

TYPE SPECIMEN: HT: CAS-154331. M.E. Jones s.n., 19 May 1914. IT: CAS, NY, US.

TAXONOMIC UNIQUENESS: *Cycladenia humilis* var. *jonesii* is the only member of its genus in the Intermountain West. This genus consists of only one species with 3 varieties, with the rest of its varieties restricted to California.

DESCRIPTION: A perennial herb from subterranean woody rhizomes; erect stems 10-40 cm (4-16 in.) tall, glaucous. Main foliage leaves are pale green, 3.5-9.5 cm (1.4-4.0 in) long and 2.0-6.5 cm (1-3 in) wide, glabrous and glaucous, opposite, orbicular, wide-oval or elliptical. They have palmate venation, with short clasping petioles; lowermost leaves reduced to subamplexicaul bracts, enlarging upwards. Flowers pink to rose purple, funnel shaped, with 5 petals, 2-6 clustered on smooth leafless pedicels, 8-28 mm long; pedicels 5-25 mm long. Calyx hairy, lobes unequal, lanceolate, obtuse, 5-10 mm long and 15 mm wide; lobes oblong at apex. Filament hairy, 3 mm above tube. UNPS (2003-2005) reports "Corolla rose purple, dimorphic, either 23-28 mm long and 19-31 mm wide, or 18-21 mm long and 13-19 mm wide." Fruit follicle 6 cm (2.4 in) long and 1 cm wide, smooth, splitting along a seam; seeds have fluffy tuft of hair. (Welsh 1978, ADA 1994, Falk & Jenkins et al. 2001, UNPS 2003-2005).

AIDS TO IDENTIFICATION: Ascending attractive pink to rose purple flowers; stems slim and usually leafless; leaves mostly basal, broad pale green with short broad clasping petioles. In flower it is unmistakable, but its leaves can resemble those of *Asclepias cryptoceras* (Humboldt milkweed) or *Astragalus asclepiadoides* (bird milk-vetch) (UNPS 2003-2005).

ILLUSTRATIONS: Line drawing of species (Cronquist et al. 1984: 31)
Line drawing (Welsh 1970)
Line drawing (Welsh and Thorne, 1979)
Line drawing (USFWS 1992)
Line drawing (Kaye Thorne, *in* Kelly and McGinnis, 1994)
Color photo (USFWS, *in* Kelly and McGinnis, 1994)
Color photo (Hughes 1997)
Color photo (Franklin *in* Utah Division of Wildlife Resources
<http://www.utahcdc.usu.edu/rsgis2/Search/Display.asp?F1Nm=cycljone>)
Color photo (*In* Center for Plant Conservation
http://ridgwaydb.mobot.org/cpcweb/CPC_ViewProfile.asp?CPCNum=1204)
Color photo and line drawing (Falk & Jenkins et al., 2001)
Color photo of plant and habitat
(<http://www.castlerockcollaboration.org/image052.html>)
Line drawing (Utah Native Plant Society 2003-2005, *in*
<http://utahrareplants.org>)
Color photos of plant and habitat (C. Delmatier, *in* Utah Native Plant
Society 2003-2005, <http://utahrareplants.org>)
Color photo (T. Clark, *in* Utah Native Plant Society 2003-2005,
<http://utahrareplants.org>)
Color photo of Isotype (US-1369405, USNH *in*
<http://ravenel.si.edu/botany/types/fullRecords.cfm?myFamily=>)
Color photo of Isotype (NY-298028, NYBG *in*
<http://207.156.243.8/emu/vh/specimen.php?irn=434579>)

TOTAL RANGE: Known from a few areas in and around the Canyonlands region of southeastern Utah and in northern Arizona, including Emery, Garfield, Grand, and Kane counties in Utah, and Coconino County in Arizona. Some sites are separated by over 160 km. Historically from Pipe Springs, Mohave County, Arizona.

RANGE WITHIN ARIZONA: Vermillion Cliffs and Moccasin Mountains, Coconino County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowering April - June. Fruiting May-June.

BIOLOGY: This plant is a perennial of unknown longevity that appears to persist mostly by the spreading of rhizomes. During recent studies on this taxon over four years in Utah, low amounts of sexual reproduction occurred and few seedlings were observed. A paucity of pollinators was noted as a possible reason for low fruit production. The frequent

abortion of fruit, and a decrease in fruit set over the flowering season suggest the possibility of limited resources being responsible for low fruit production. Water emendation did not increase fruit production in this study. The soil that this taxon is found on is poor in nutrients, and may be a limiting factor. Jones' *Cycladenia* may also have a low ability to colonize nearby suitable habitat, as populations sometimes inhabit only a small area within seemingly extensive habitat with the same geologic members and similar soil, aspect, slope, and vegetation (Sipes and Tepedino 1996).

HABITAT: Gypsiferous, sandy silty soil on clay hills that form the steep side slopes and bases of mesas in canyons; within Great Basin Desertscrub or Juniper-Pinyon Woodland communities.

ELEVATION: 4,390 – 6,000 ft. (1340 - 1830 m)

EXPOSURE: All aspects and a variety of slopes, including the tops of mesas.

SUBSTRATE: Gypsiferous, sandy, silty, saline clay soils within the Cutler, Chinle, Moenkopi, and Summerville Formations. On the Chinle Formation in Arizona.

PLANT COMMUNITY: Great Basin Desertscrub and Juniper-Pinyon Woodland communities. Associated species include: *Amelanchier utahensis* (Utah serviceberry), *Atriplex* sp. (saltbush), *Brickellia oblongifolia* (narrow-leaf Brickell-bush), *Chrysothamnus* sp. (rabbit-bush), *Coleogyne ramosissima* (blackbush), *Cryptantha* sp. (cat's-eye), *Enceliopsis nudicaulis* (panamint sunray), *Ephedra torreyana* (Torrey's Mormon-tea), *Eriogonum corymbosum* (crispleaf wild-buckwheat), *Chamaesyce fendleri* (Fendler's broomspurge), *Gaillardia spathulata* (western blanket-flower), *Pleuraphis jamesii* (James' galleta), *Juniperus osteosperma* (Utah juniper), *Oryzopsis asperifolia* (white-grained mountain-ricegrass), *Pinus edulis* (two-needle pinyon pine), *Purshia stansburiana* (Stansbury cliffrose), and *Wyethia scabra* (rough mule's ears).

POPULATION TRENDS: Stable or slightly declining

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LT (USDI, FWS 1986)
[PE USDI, FWS 1976]

STATE STATUS: Highly Safeguarded (ARS, ANPL 1999)
[Highly Safeguarded (ADA, ANPL 1993)]

OTHER STATUS: None

MANAGEMENT FACTORS: Due to the arid climate and harsh soils, the ecosystem where this taxon is found is a fragile one that recovers very slowly from surface disturbance. This species is vulnerable due to its rarity. Threats include oil and gas leases, mining claims,

mineral exploration (especially Uranium), and possible future development. Degradation of habitat by bicycles and off-road vehicles is currently the main threat to this taxon (FWS 1986, Sipes et al. 1994).

CONSERVATION MEASURES TAKEN: Monitoring plots have been established for most, if not all, of the populations of this plant. Utah State University has been conducting pollination, reproductive ecology, and genetics research on some of the populations of this taxon in Utah.

SUGGESTED PROJECTS: Yearly monitoring efforts should continue, as well as the search for new populations in suitable habitat. Traffic in areas of known habitat should be limited to existing roads, while some areas may need to be fenced to control off-road vehicle activities. Energy resource and mining activities should not occur in areas where known populations exist.

LAND MANAGEMENT/OWNERSHIP: BLM - Arizona Strip Field Office; NPS - Glen Canyon National Recreation Area; Private. In Utah: BIA – Ute Tribal Lands; BLM – Moab and Price Field Offices, and Grand Staircase Escalante National Monument; NPS – Glen Canyon NRA and Capital Reef National Park; State Lands.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

In all, there are eight known populations of this taxon. Because the Jones' *Cycladenia* has a disjunct distribution pattern and its nearest known relatives are found in California, it is believed to be a Tertiary relict. If this is true, this plant may be poorly adapted for the present climatic regime of the Intermountain West. It is also possible that this taxon has lost its original pollinator, causing fruit production to be episodic (FWS 1986, Sipes and Tepedino 1996).

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