

ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDONA030JO

Data Sensitivity: No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Chylismia exilis*

**COMMON NAME:** Slender evening primrose, Cottonwood Springs suncup, slender camissonia

**SYNONYMS:** *Chylismia exilis* (P.H. Raven) W.L. Wagner & Hoch, *Oenothera exilis* P.H. Raven, *Camissonia exilis* (P.H. Raven) P.H. Raven

**FAMILY:** Onagraceae

**AUTHOR, PLACE OF PUBLICATION:** *Camissonia exilis* (P.H. Raven) P.H. Raven, Brittonia 16(3): 283. 1964. *Oenothera exilis* P.H. Raven, University of California Publications in Botany 34: 114. 1962.

**TYPE LOCALITY:** Virgin Mountains, near Cottonwood Springs, Mohave County, Arizona.

**TYPE SPECIMEN:** POM 264,197. P.A. Munz (16779) 12 June 1890.

**TAXONOMIC UNIQUENESS:** Distinct species in a genus of 16 species mostly of subarid habitats in far western U.S. and adjacent Canada and Mexico. Species placed in *Chylismia* from *Camissonia* by W.L. Wagner, P.C. Hoch and P.H. Raven (2007) upon the revised classification of the family *Onagraceae*.

**DESCRIPTION:** Small slender annual with stems simple or more commonly branched from the base; stems are purplish-brown and covered with minute glandular hairs. Leaves are simple, about 3.5 cm (1.4 in) long, 0.7 cm (0.28 in.) wide, upper leaves smaller; leaf margins slightly toothed. **Prominent veins on the underside of the leaf** lined with brownish oil cells. Flowers yellow fading to purplish, tiny (1-1.5 mm), erect and sparse, with 4 stamens subtended by bract; petals 4. Fruit is club-shaped capsule, 4.5-7.0 mm long.

**AIDS TO IDENTIFICATION:** *C. exilis* is a very small plant with small yellow flowers (1-1.5 mm long), petals 4, without the whorl of epipetalous stamens present in other species; stamens are attached to sepals rather than on petals. This species has four stamens whereas all other *Chylismia* have eight.

**ILLUSTRATIONS:** Line drawing (USDI, FWS)  
Line drawing (AGFD 2001)  
Color photo (Phillips 2001)

Color photo (Phillips *in*

[http://www.unps.org/fg/jpg/Camissonia\\_exilis\\_p2.jpg](http://www.unps.org/fg/jpg/Camissonia_exilis_p2.jpg))

Line Drawing (*In* [http://www.unps.org/fg/jpg/Camissonia\\_exilis\\_p1.png](http://www.unps.org/fg/jpg/Camissonia_exilis_p1.png))

Color photo (B. Phillips, *in* Utah Native Plant Society 2003-2005,

<http://www.utahrareplants.org>)

Color photos of plant and habitat (M. Kirkpatrick, *in* Utah Native Plant Society 2003-2005, <http://www.utahrareplants.org>)

Color photo of specimen (ASU-98177, *in* SEINet at

<http://seinet.asu.edu/collections/TaxaDetails.jsp>)

**TOTAL RANGE:** From northern Arizona in Mohave and Coconino counties, and southern Utah in Garfield (south of Canonville) and Kane (just north of AZ-UT border) counties.

**RANGE WITHIN ARIZONA:** Three or four sites in Hungry Valley, on road to North Water Springs at southeast base of Virgin Mountains, Mohave County. Two sites in Coyote Valley, approximately 100 feet south and 100 feet north (Utah) of the Arizona-Utah state line.

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Herbaceous annual.

**PHENOLOGY:** Flowers May – June; late April – May in Utah (UNPS 2003-2005).

**BIOLOGY:** Species appears to be dependent upon winter precipitation for seedling establishment and germination; no germination is likely to occur in drought years. Flowers usually number 1 to 4 per plant with extremes of 0 to 13. Flowers remain open all day. Fruits usually 2 to 34 per plant with extremes of 0 to 139.

**HABITAT:** Warm desert shrub communities restricted to calcium-rich deposits on small islands of sandy-textured saline soil, apparently in association with subsurface seepage.

**ELEVATION:** 3,500 - 5,000 feet (1067-1525 meters). Utah Native Plant Society (2003-2005) reports elevation from 5,000 – 6,900 feet (1525-2105 m).

**EXPOSURE:** Open.

**SUBSTRATE:** Saline soil derived from gypsum-clay outcrops in the Chinle Formation (Coyote Valley) and on travertine-encrusted flats (Hungry Valley).

**PLANT COMMUNITY:** Great Basin Grassland (Coyote Valley) and Mohave Desertscrub (Hungry Valley). Associated species include: *Acacia*, *Artemisia tridentata* (big sagebrush), *Chrysothamnus* (rabbitbrush), *Dalea* (prairie-clover), *Ephedra* (Mormon-tea), *Eriogonum*

(buckwheat), *Gutierrezia* (snakeweed), *Juniperus* (juniper), and *Rhus* (sumac). At the base of the Virgin Mountains, found with *Acacia greggii* (catclaw acacia), *Chrysothamnus*, *Ephedra*, *Eriogonum*, *Stanleya* (prince-plume), and *Yucca baccata* (fleshy-fruit yucca). (SEINet accessed 2005). In Utah, found in sagebrush, galleta, and pinyon-juniper communities (UNPS 2003-2005).

**POPULATION TRENDS:** Precarious, because of extremely limited range and habitat. BLM monitoring in plots in Hungry Valley since 1986, found the population to emerge in May 1990, 1991 and 1992. The population in Coyote Valley has not been known to emerge since 1982.

Phillips (1982) reports a total of 67 plants observed in Coyote Valley in two localities. Total potential habitat in Coyote Valley is approximately 200 square meters. Total plants observed in Hungry Valley were 51, found in two localities. In May 1982, these population exhibited 100% reproduction.

## **SPECIES PROTECTION AND CONSERVATION**

### **ENDANGERED SPECIES ACT STATUS:**

None (USDI, FWS 1996)  
 [Category 2 USDI, FWS 1993]  
 [Category 2 USDI, FWS 1990]  
 [Category 2 USDI, FWS 1985]  
 [Category 1 USDI, FWS 1983]  
 [Category 2 USDI, FWS 1980]  
 [PTN-T USDI, FWS 1975]

### **OTHER STATUS:**

Salvage Restricted (ARS, ANPL 1999)  
 [Salvage Restricted (ARS, ANPL 1993)]  
 Forest Service Sensitive (USDA, FS Region 3 1990)  
 None (USDI, BLM AZ 2005)  
 [Bureau of Land Management Sensitive USDI, BLM AZ 2000)]

**MANAGEMENT FACTORS:** This species is an extreme habitat specialist. Plants do not seem to be palatable to livestock, wildlife or insects to any great degree. However, trampling by cattle and off-road vehicles is common. The Coyote Valley population occurs along a graded roadway and grows in a vehicle pullout area. NatureServe (2005) reports that at some sites, there has been a little ORV use and woodcutting, but neither poses much threat.

### **CONSERVATION MEASURES TAKEN:**

monitored by BLM from 1986 through 1992.

The Hungry Valley population has been

**SUGGESTED PROJECTS:** Close monitoring to determine population status. This will be difficult because the plants are not present every year if insufficient precipitation to germinate. Protection of habitat through fencing, especially in high vehicular use areas. Additional surveys in wet years. Re-visit the Coyote Valley site.

**LAND MANAGEMENT/OWNERSHIP:** Arizona State Land Department (Coyote Valley); BLM - Arizona Strip Field Office (Hungry Valley). In Utah: BLM – Kanab Field Office; NPS – Grand Staircase National Monument; Private.

## **SOURCES OF FURTHER INFORMATION**

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#### **ADDITIONAL INFORMATION:**

Phillips, et al (1982) recommended for federal Threatened status under the Endangered Species Act.

**Revised:** 1991-12-05 (JSP)  
1992-05-21 (DBI)  
1992-05-28 (BGP)  
1992-09-14 (BKP)  
2003-08-29 (AMS)  
2005-09-22 (SMS)  
2020-06-11 (KSL)

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