

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

Plant Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Dalea tentaculoides* Gentry

COMMON NAME: Gentry Indigo Bush

SYNONYMS:

FAMILY: Fabaceae

AUTHOR, PLACE OF PUBLICATION: Gentry, H. S. 1950. Madroño 10:238.

TYPE LOCALITY: Arizona: Santa Cruz County: Pajarito Mountains: Sycamore Canyon.

TYPE SPECIMEN: ARIZ 30239. R.A. Darrow. 09 May 1941.

TAXONOMIC UNIQUENESS: Kearney et al. (1960) list 36 species of *Dalea* in Arizona. However, the taxonomy is unclear. "*Dalea tentaculoides* is a distinctive member of the genus, with no closely related species" (Toolin, 1982).

A distinct, recently described species in a genus of 250-300 species in the warmer parts of the Americas (NatureServe 2001).

DESCRIPTION: Shrubby, erect, perennial shrub (has been referred to as perennial herb), growing from woody root crown, up to 2.0 m (6.6 ft.) high but usually less; up to 1 m (3.28 ft) tall. Numerous hairless stems in older plants, 30.0-50.0 cm (12.0-20.0 in.) tall. Stems branch from near base, covered with pustulate tubercles. Young branches are green, turn brown with age. **Compound leaves 3.0-6.0 cm (1.2-2.4 in.) long with 9-17 pairs of leaflets**, upper leaves smaller with 3-8 pairs of leaflets; **Hairless leaflets, midribs not obvious, notched at tips**, dotted with small punctate glands below (Gori). Flowers sessile 6.0 mm (0.24 in.) long, bracts persistent, 3.0-5.0 mm wide. Inflorescences spiked, **flowers sessile (6 mm), borne in oblong clusters**, petals rose-purple, borne above middle of stamen tube. **Sepals, floral bracts, and branches bear elongate, tentacle-like glands**. Seeds 1.5 mm long.

AIDS TO IDENTIFICATION: Only *Dalea* with elongate, tentacle-like glands on calyx and floral bract. Easily confused with, and misidentified as, *D. versicolor* and *D. greggii*. *D. pulchra* has grey-green hair covered leaflets. Each leaf has 2-4 pairs of leaflets, and inflorescence is sphere. *D. sessilis* and *D. versicolor* (Now [1994] *D. versicolor sessilis*) are spring blooming, 4-9 pairs of curved (smaller than *D. tentaculoides*), leaflets per leaf. *D. versicolor* has blister glands on calyx.

ILLUSTRATIONS:

- Line drawing (Barneby 1977:835)
- Line drawing (USDI, FWS)
- Color drawing (<http://www.pima.gov/cmo/sdcp/>)

TOTAL RANGE: Southern Arizona, and one site in Mexico.

RANGE WITHIN ARIZONA: Santa Cruz County: Sycamore Canyon drainage in Atascosa and Pajarito Mountains; Pima County: Baboquivari Mountains (in the 1930s), 1965 location in Mendoza Canyon.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial shrub.

PHENOLOGY: May be bifloral, flowering April-June, and possibly again in September-October, following winter and summer rains. Flowers smaller at second flowering, looking more like globe.

BIOLOGY: Plants grow back vigorously (resprout) when buried by flooding; multiple stems arising from under ground make it difficult to determine number of individuals. Largest plants in 1991 were found in the lee of obstructions (boulders, trees), protecting plants from severe flooding effects. Largest clumps in Sycamore Canyon on lee side of trees and boulders. Plants survived severe flooding in 1990.

HABITAT: Found along canyon bottom on cobble terraces subject to occasional flooding. Historic collection records indicate possible growth on rocky hillsides. Occurs in disturbance prone environments.

ELEVATION: 3,600 - 4,580 ft. (1,098 - 1,397 m).

EXPOSURE: Full sun to partial shade.

SUBSTRATE: Sandy, gravelly loam of rhyolite parent material.

PLANT COMMUNITY: Oak-juniper woodland and Madrean Evergreen Woodland. Associated species include: *Platanus wrightii*, *Fraxinus velutina*, *Juglans major* and *Quercus* spp.

POPULATION TRENDS: In Sycamore Canyon (1981), only one population of over 100 plants found. In 1989, problems with fence maintenance of Goodding Research Natural Area allowed extensive livestock utilization of Sycamore Canyon population (1990). Fence was repaired and the population improved; between 1990 and 1991, population increased from

1291 to 1389 individuals. Study plot, however, showed higher mortality than recruitment, with population dropping from 148 to 118. Despite drop, mortality very low for larger size classes; significant growth of last year's individuals. Hence, number of large individuals nearly quadrupled. Number of inflorescences produced increased greatly (Malusa et al. 1992). In early 1993, severe flooding occurred. When plot was surveyed in June, 1993, 20-30 individuals observed although many were completely covered by sand (Falk and Warren 1994).

Species not found in Mendoza Canyon (Gori 1994), although 1965 specimen from that location has detailed locality information.

Specimen of *Dalea* from Kitt Peak, Quinlan Mountains (see Toolin 1986) determined **NOT** to be *Dalea tentaculoides* by The Nature Conservancy in 1990.

Population size varies year to year (impacts from trespassing cattle and flooding, 1990). Can rebound rapidly by root sprouting. Plants grows along flood plains along streams, and thus are subject to being "scoured out" by seasonal flooding (DBG 1999).

Current status and trend of population is unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	None (USDI, FWS 1998) [C USDI, FWS 1996, 1997] [C1 USDI, FWS 1990, 1993] [C1 USDI, FWS 1980, 1985]
STATE STATUS:	Highly Safeguarded (ARS, ANPL accessed 2011) [Highly Safeguarded (ARS, ANPL 1993, 1999)]
OTHER STATUS:	Forest Service Sensitive (USDA, FS Region 3, 2007) [Forest Service Sensitive (USDA, FS Region 3 1990, 1999)] Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005, 2008, 2010)
MANAGEMENT FACTORS:	Major threats include seasonal flooding, limited range, habitat degradation due to grazing by livestock, consumption by livestock, and trampling by people and livestock. Fence maintenance needed to be maintained to protect populations.

CONSERVATION MEASURES TAKEN: Goodding Research Natural Area extended to include more of population.

SUGGESTED PROJECTS: Seed collection needed for future reintroduction, along with additional surveys (particularly east side of Baboquivaris) to determine potential habitat. Monitoring of whole drainage (Sycamore Canyon population) needed to better understand plant's adaptation to disturbance.

LAND MANAGEMENT/OWNERSHIP: USFS - Coronado National Forest; BIA - Tohono O'odham Nation.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

Revised: 1992-11-23 (JSP)
 1993-11-09 (DBI)
 1994-10-19 (PLW)
 1997-11-12 (SMS)
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 2001-12-12 (SMS)

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Comparison of *D. tentaculoides*, *D. pulchra* and *D. versicolor* ssp. *sessilis* (All have same growth form)

<i>D. tentaculoides</i>	<i>D. pulchra</i>	<i>D. versicolor</i> ssp. <i>sessilis</i>
Leaves dense up and down stem	Sparse	Sparse
<u>Leaflet number:</u> 9-17	2-4	6-9
<u>Midrib:</u> No	Yes	Slight
<u>Hairs on leaves:</u> None	Yes (dense silver)	Dense but fine
<u>Inflorescence:</u> Long stem	Intermediate	Very short
<u>Calyx:</u> Tentacle glands	None	Blister glands