

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

Plant Abstract

Element Code: PDAST6W0A0

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE



ME: *Pectis imberbis* Gray

COMMON NAME: beardless chinch weed, beardless chinchweed, beardless fetid-marigold, Hierba de venado

SYNONYMS:

FAMILY: Compositae

AUTHOR, PLACE OF PUBLICATION: Asa Gray, Smithsonian Contributions to Knowledge 5(6): 70. 1853 [1852].

TYPE LOCALITY: Mexico: Sonora: on the Sonoita, near Deserted Rancho. Harvard Univ. Herb. (2001) reports holotype collected 1851 from “United States of America. New Mexico. Sonora.” According to Phillips et al. (1982), “The land of the Sonoita Valley belonged to the Republic of Mexico prior to the Gadsden Purchase, hence the original locality of Sonora. The land is now part of Santa Cruz County, Arizona.”

TYPE SPECIMEN: HT: GH. Charles Wright 1399, 1851. MOBOT and USNH report date as Sep 1850. IT: F, GH, MO, NY, US.

TAXONOMIC UNIQUENESS: In section *Pectidium*, genus *Pectis* has 75 species in warm and tropical America. *Pectis imberbis* is the only perennial member of the genus in Arizona, and is related to *P. linifolia* of Latin America and Caribbean (Keil 1978). *P. imberbis* is the “rarest species of *Pectis* in the United States” (AZNHP 1982).

DESCRIPTION: Slender perennial herb arising from a woody rootstock, 2-8 mm in diameter, with erect, brittle stems 30-120 cm (12-47 in.) tall. Stems are virgate, green, 6-angled above, becoming terete below, much-branched with ascending branches above, glabrous. Leaves opposite, thick, narrow, one-nerved and gland-dotted, 1.0-5.0 cm (0.4-2.0 in.) long, 1-2 mm wide. Heads are solitary or in open cymose clusters at the tips of the branches. Numerous small flowers, dotted with glands, composed of yellow ray and disc florets, may change to red or purple upon aging. Ray corollas are 6-11 mm long; disc florets 3.7-6.0 mm long (Keil 1978). Achenes are black, 3.5-5.0 mm long, puberulent with ascending blunt-tipped double hairs. Pappus of ray and disc achenes similar, usually “partly of erect or subulate awns and partly of short squamellae. This characteristic endows the species with its specific epithet, *imberbis*, meaning beardless” (Phillips et al. 1982).

AIDS TO IDENTIFICATION: Very slender, diffuse branching; perennial, woody rootstock; petals and leaves dotted with oil glands. Leaves so narrow and thin, they are

visible only under close examination. *Pectis imberbis* differs from the perennial *P. longipes* by its erect habit, lack of bristles at leaf bases, and pappus of awns and scales rather than bristles (Falk et al., 2001). Easily differentiated from *Stephanomeria tenuifolia* (similar in appearance) by the absence of plumose bristles of pappus. In addition, *P. imberbis* does not have white sap and *S. tenuifolia* does not have glands. Distinguished from *Viguiera multiflora* var. *nevadensis* by smaller flowers, dark involucre and punctate glands on the leaves (Phillips et al. 1982). *P. imberbis* is very difficult to see in field. The leaves look like green sticks, and the glands appear as small red bumps. Crushed leaves emit an odor (Warren 1994), however, Keil (1978 in Phillips et al., 1982), stated his observations have been that the plants from Arizona populations are non-aromatic and he has not seen any mention of odor on herbarium labels.

ILLUSTRATIONS: Line drawing (USFWS).

Color photo of isotype specimen (Wright 1399, in MOBOT
<http://digitalis.mobot.org/mrsid/bin/mosid/mosid.pl>)

Color photo of isotype specimen (In USNH,
<http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>)

Color photo of Isotype specimen (Wright 1399, in NYBG
http://scisun.nybg.org:8890/searchdb/owa/wwwcatalogrenz.detail_list)

Line drawing (In Falk, et al., 2001)

Color photos of plant and habitat (FWS, in Falk et al., 2001)

TOTAL RANGE: Southern Arizona, western Chihuahua and eastern Sonora, Mexico.

RANGE WITHIN ARIZONA: Cochise, Pima and Santa Cruz counties, including the Atascosa Mountains (along Ruby Rd.), Huachuca and Santa Rita mountains, the Canelo Hills, and the Patagonia Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Blooms after summer rains from August to October.

BIOLOGY: Unknown

HABITAT: In open grassland and oak/grassland, 4,000-5,500 ft (1220-1680 m) elevation. Adapted to disturbance; grows along road cuts. This species has an extremely broad range.

ELEVATION: 3,600 to 6,475 feet (1100-1975 m). Falk et al. (2001) reports elevation range in Arizona of 4,000-5,500 ft (1220-1680 m). In Mexico (Martin et al., 1998), found from 2,951-4,492 ft (900-1370 m).

EXPOSURE: South, slope of 95-100% (refers to road cuts).

SUBSTRATE: Eroded granite. Sonoran Desert Section and Mexican Highland Section of the Basin and Range Province.

PLANT COMMUNITY: Surrounding vegetation intergrades from grassland to oak woodland, extremely broad range. Dominant associated species include: *Andropogon barbinodis* (cane bluestem), *Arctostaphylos pungens* (point-leaf manzanita), *Bothriochloa tenuifolia*, *Eragrostis* sp. (lovegrass), *Erythrina flabelliformis* (coral bean), *Fouquieria splendens* (ocotillo), *Prosopis velutina* (velvet mesquite), *Quercus* sp. (oak), and *Viguiera multiflora* var. *nevadensis* (Nevada viguiera).

POPULATION TRENDS: Not much known about this plant, when it comes to trends. Monitoring on the Forest began at four sites in 1995. NatureServe (2003) reports at least 9 occurrences of this species in Cochise and Santa Cruz counties, Arizona, and eastern Sonora and western Chihuahua, Mexico. According to Falk et al. (2001), *Pectis imberbis* is “considered to be the rarest of all U.S. *Pectis*. Several locations on Coronado NF have not been seen since late 1970s. Small population range from 20-30 individuals to maximum of 100.” According to Martin et al. (1998), “This species has not been collected in the region since the 1930s and is a candidate for endangered species in the U.S.”

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[Category 2 USDI, FWS 1983]
[Category 1 USDI, FWS 1980]

STATE STATUS: None

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)
[Forest Service Sensitive (USDA, FS Region 3 1999)]

MANAGEMENT FACTORS: Populations may be susceptible to impacts from grazing and road maintenance activities. Keil (1982 pers. comm. in Phillips et al., 1982), stated that plants do not flower until they are over 0.5 m tall, and under heavy grazing pressure, they probably do not reach that size.

CONSERVATION MEASURES TAKEN:

SUGGESTED PROJECTS: Additional surveys and determination of population status. Any studies concerning the biology, and phenology of this plant are needed. Monitoring began at four sites in 1995.

LAND MANAGEMENT/OWNERSHIP: NPS - Coronado National Memorial; USFS - Coronado National Forest; Audubon Research Ranch. Possibly on DOD – Fort Huachuca Military Reservation.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Arizona Natural Heritage Program. 1982. *Pectis imberbis* (Beardless chinchweed). USFS Contract Report. Tucson, Arizona.
- Falk, M. 1994. Bureau of Land Management, Safford District, Rare Plant Workshop. November 14-16. Tucson, Arizona.
- Falk, M., P. Jenkins, et al; Arizona Rare Plant Committee. 2001 Arizona Rare Plant Guide. Published by a collaboration of agencies and organizations. Pages unnumbered.
- Fernald, M.L. 1897. A systematic study of the United States and Mexican species of *Pectis*. Proc. Amer. Acad. 33: 57-86.
- Harvard University Herbaria. 2001. Index of Botanical Specimens. <http://brimsa.huh.harvard.edu/cms-wb/specimens.jsp>. Accessed: 11/19/2003.
- Integrated Taxonomic Information System (ITIS). Retrieved 11/19/2003 from ITIS, <http://www.itis.usda.gov>.
- Kearney, T.H., R.H. Peebles with collaborators. 1951. Arizona flora. Second edition with supplement by J.T. Howell, E. McClintock and collaborators. 1960. University of California Press. Berkeley. P. 935.
- Keil, D.J. 1978. Revision of *Pectis* section *Pectidium* (Compositae: Tagetaeae). Rhodora 80(821): 135-146.
- Martin, P.S., D. Yetman, M. Fishbein, P. Jenkins, T.R. Van Devender, and R.K. Wilson. 1998. Gentry's Río Mayo Plants, the tropical deciduous forest & environs of northwest Mexico. The Southwest Center Series, The University of Arizona Press. Tucson, Arizona. P. 246.
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Pectis imberbis* A. Gray. http://mobot.mobot.org/cgi-bin/search_vast. Accessed: 19 Nov 2003.
- NatureServe. 2003. NatureServe Explorer: An online encyclopedia of life [web application]. Version 1.8. Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. (Accessed: November 19, 2003).
- Phillips, A.M. III, B.G. Phillips, L.T. Green III, J. Mazzone and N. Brian. 1982. Status report on *Pectis imberbis* Gray. For U. S. Fish and Wildlife Service. Albuquerque, New Mexico. 13 pp.
- Shreve, F. and I.L. Wiggins. 1964. *Pectis imberbis*. Vegetation and flora of the Sonoran Desert. Stanford University Press. Stanford, California. P. 1630.
- The New York Botanical Garden. NYBG Specimens Detailed Results. http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list. Accessed: 11/19/2003.
- U.S. National Herbarium Type Specimen Register (US). Department of Systematic Biology – Botany, Smithsonian Institution. Accessed: 11/19/2003 from <http://rathbun.si.edu/botany/types/fullRecords.cfm?myFamily=>.
- USDA, Forest Service Region 3. 1990. Regional Forester's Sensitive Species List.

- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, NRCS. 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- USDI, Fish and Wildlife Service. 1980. Endangered and Threatened Wildlife and Plants; Review of Plant Taxa for Listing as Endangered or Threatened Species. Federal Register 45(242): 82526.
- USDI, Fish and Wildlife Service. 1983. Endangered and Threatened Wildlife and Plants; Supplement to Review of Plant Taxa for Listing; Proposed Rule. Federal Register 48(229): 53655.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40): 7604.
- Warren, P.L. and F.W. Reichenbacher. 1991. Sensitive plant survey of Fort Huachuca, Arizona. Prepared for the U.S. Army, Fort Huachuca, Arizona. Pp. 25-26.

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ADDITIONAL INFORMATION:

Revised: 1991-11-05 (PLW)
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