

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

Plant Abstract

Element Code: PDAST6W0A0

Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Pectis imberbis* Gray

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

SYNONYMS:

FAMILY: Asteraceae

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
University Herbarium (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. Tropicos 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. Although another perennial *Pectis* occurs in southern Arizona, *Pectis*
longipes, the two species are easily told apart. *Pectis imberbis* 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, and
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 the 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).

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

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

Color photos of plant and habitat (SEINet, 2020)

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 historically the Patagonia Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial. Individual plants may live between 5-10 years (FWS 2018).

PHENOLOGY: Blooms after summer rains from August to October. There have been no studies on the phenology of this species, and we do not know how long flowers remain open, or whether plants are able to pollinate themselves or require the pollen of another plant (USFWS 2018).

BIOLOGY: Within some populations, plants ranging from larger to smaller plants have been found, and it is thought the smaller plants are juveniles. The specific pollinators of *P. imberbis* are unknown, although bees and flies purportedly pollinate other members within this genus (USFWS 2018).

HABITAT: In sunny to partly shaded 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, spanning both the Chihuahuan and Sonoran Deserts. It tends to grow in openings where it has little competition from other plants and where the native landscape is intact. Has been found in plains, great basin, semi-desert grasslands, oak savanna, and Madrean evergreen woodland, and along disturbed roads, trails, and mining sites within these vegetation communities (USDI, FWS 2021). At a majority of the historical localities that no longer support *P. imberbis*, nonnative grasses dominate the vegetation (USDI, FWS 2018).

ELEVATION: 3,600 to 5,700 feet (1100-1737 m). According to Falk et al. (2001), elevation range in Arizona is 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: Steep, south-facing slopes, often found on road cuts (USDI, FWS 2021).

SUBSTRATE: Eroding granite or limestone soils or rock outcrops. Sonoran Desert Section and Mexican Highland Section of the Basin and Range Province.

PLANT COMMUNITY: Surrounding vegetation intergrades from grassland to oak savannas 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: Long-term population trends are relatively unknown, due to a lack of consistent surveying. The general trend appears to be a decline. A total of 21 separate populations across the range of the species are known. Of these, nine populations have been extirpated, six populations in southern Arizona are extant, and the status of six populations in Mexico are unknown. Several of the extant populations in Arizona have declined in number from historical population counts. Some populations have persisted for multiple decades. (USDI, FWS 2021).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE with Critical Habitat (USDI, FWS 2021)
[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 2007)
[Forest Service Sensitive (USDA, FS Region 3 1990, 1999)]

MANAGEMENT FACTORS: Threats to the species include: Competition from nonnative grass species; an altered fire regime exacerbated by nonnative grass invasion; altered precipitation, drought, and temperatures due to climate change; erosion, sedimentation, and burial from road maintenance, mining, livestock trampling and soil disturbance, and post-wildfire runoff; summer and fall grazing from wildlife and livestock; and small population size exacerbating all other stressors (USDI, FWS 2021).

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. Populations of *P. imberbis* have become increasingly isolated due to loss of neighboring populations; gene flow amongst these disjunct localities is highly unlikely. It is therefore important to conserve all known populations for maximum genetic variability (USDI, FWS 2018).

CONSERVATION MEASURES TAKEN: Listed Endangered with Critical habitat designated in June 2021 (USDI, FWS 2021). Critical habitat consists of eight units comprising approximately 10,604 acres (4,291 ha) in Pima, Cochise, and Santa Cruz Counties, Arizona.

SUGGESTED PROJECTS: Additional surveys and determination of population status needed. Any studies concerning the biology, such as identifying potential pollinators, and phenology of this plant are needed. Monitoring of four populations on Coronado NF, was suggested by D. Falk and P. Warren (1994). Revisiting historical localities in Chihuahua, Mexico to determine status is warranted.

LAND MANAGEMENT/OWNERSHIP: NPS - Coronado National Memorial; USFS - Coronado National Forest; Private - Audubon Research Ranch. Possibly on DOD – Fort Huachuca Military Reservation (NB: this locality is based on vague voucher specimen information and could refer to the nearby Audubon Research Ranch).

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

Revised:	1991-11-05 (PLW)
	1994-12-12 (DBI)
	1994-12-29 (MF)
	1998-01-09 (SSS)
	2003-12-11 (SMS)
	2012-10-05 (SMS)
	2020-02-14 (TME)
	2021-06-18 (KSL)
	2021-12-03 (TME)

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