

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

Plant Abstract

Element Code: PDLAM0M0M0

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Hedeoma dentatum* Torr.
COMMON NAME: Arizona False-Pennyroyal, Mock-Pennyroyal, Huachuca Pennyroyal, Dentate Falsepennyroyal.
SYNONYMS: *Hedeoma dentata* Torr.
FAMILY: Lamiaceae

AUTHOR, PLACE OF PUBLICATION: Torrey, J. 1859. Botany of the United States and Mexican Boundary Survey, Bot. Part 2: 130.

TYPE LOCALITY: Santa Cruz, Sonora, Mexico.

TYPE SPECIMEN: NY 564. G. Thurber s. n. September 1851.

TAXONOMIC UNIQUENESS: The genus *Hedeoma* contains 38 species and is native to North and South America (Hickman 1993). There are 7 species of *Hedeoma* in Arizona (Lehr 1978). *Hedeoma* is an ancient Greek name for a strongly aromatic mint (Hickman 1993).

DESCRIPTION: Herbaceous perennial with stems to 50 cm, in clumps; leaves dentate, usually with more than 6 teeth, simple, ovate or elliptic to rhomboid, usually 2-3 times longer than wide, with conspicuous veins; basal leaves quite hairy; flowers small, typically clusters of 5-7, but up to 15, in axiles of upper, bract-like leaves; corolla lavender, tubular, with 2 stamens that exceed the corolla tube; calyx tube about 4 times as long as wide, clearly bilobate, teeth spreading, the upper ones more or less reflexed; the upper 3 teeth usually joined below the middle, the lower 2 teeth free, longer than the upper teeth; calyx tube only moderately distended at maturity, 1/5 to 1/4 as wide as long; fruit contains 4 smooth, oblong nutlets, becomes sticky when wet.

AIDS TO IDENTIFICATION: Leaves conspicuously dentate, elliptic to rhomboid, usually 2-3 times longer than wide; calyx tube about 4 times as long as wide; basal leaves toothed and hairy. *Hedeoma nanum*, which often has leaves with a minutely dentate margin, has a calyx that is distended at the base at maturity, the pouch forming more than half the length of the tube. The veins and teeth of *H. oblongifolium* leaves are inconspicuous, and the early leaves are not hairy.

ILLUSTRATIONS: Line drawing (USFWS).

TOTAL RANGE: Southeastern Arizona and northern Sonora, Mexico.

RANGE WITHIN ARIZONA: Chiricahua, Huachuca, Mule, Whetstone and Winchester Mountains (Cochise County); Pinaleno Mountains (Graham County); Baboquivari, Rincon and Santa Catalina Mountains (Pima County); Atascosa, Mustang, Pajarito and Santa Rita Mountains (Santa Cruz County).

A University of Arizona Herbarium specimen, collected in 1905, from the "Apache Indian Reservation" in Navajo/Apache County appears to have been misidentified (Bertelsen 2000).

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowering July - October. Flowers February and May-December, in Finger Rock Canyon, Santa Catalina Mountains.

BIOLOGY: *H. dentatum* primarily reproduces by inbreeding. The fertile lower pair of anthers dehisce and the style, which lies behind this pair of anthers, recurves at its tip into the exposed mass of pollen. Apparently seventy to eighty percent of the flowers set viable seed, which can remain viable for up to five years. *H. dentatum* is known to naturally hybridize with *H. hyssopifolium*, with about 50% of the hybrids being fertile (Irving 1980).

Per Bertelsen (2000), "I have seen both *H. dentatum* and *H. hyssopifolium*, in Finger Rock Canyon and Madera Canyon, Santa Rita Mountains, but there seems to be little overlap in range. I have not seen any plants which appear to be hybrids."

HABITAT: Oak woodland, oak-pine forest, pine forest. In Finger Rock Canyon, it grows on fairly open slopes and along the trail. It can be found on open roadcuts, steep rocky outcrops, and gravelly slopes in wooded canyons with open to full sunlight (Irving 1980, Bennett et al. 1996).

ELEVATION: 3,850 to 8,200 feet (1174 - 2500 meters).

EXPOSURE: All, but often north facing. Irving (1980) lists preferred slope as 40-80%.

SUBSTRATE: This species typically occurs on well-drained shallow, cobbly loams or sandy loams. Irving (1980) lists the soil associations as Tortugas - Rock outcrop, Faraway - Rock outcrop - Barkersville, and Costo - Martinez - Canelo. It is possibly found on others.

PLANT COMMUNITY: *H. dentatum* is primarily found in madrean evergreen woodland communities. It is also found in the lower more exposed portions of petran/madrean montane forest and in semidesert grassland communities, as defined by Brown (1994). Associated species in madrean evergreen woodland communities include *Quercus spp.*, *Pinus spp.*, *Juniperus spp.*, *Cupressus arizonica*, *Arbutus arizonica*, *Garrya sp.*, etc.

POPULATION TRENDS: The paucity of herbarium records prior to 1979, seemed to suggest that *H. dentatum* was rare. This resulted in a status report being written in 1980 by Dr. Robert Irving, with field work being conducted by him in August of 1979. He reported that, within its distributional range, it is a relatively common species that was reproducing well. During this study, he looked at approximately 15 populations. Of the populations he studied, none exceeded 20 plants and most were much smaller (Irving 1980).

Per Bertelsen (2000), "In Finger Rock Canyon I described the species in 1995 as "common, widespread in oak woodland, oak-pine woodland and pine forest, elevation 4900-7200 feet (1494-2195 meters)." On March 5, 2000, I counted 57 plants along approximately one mile of trail, elevation 5200-6400 feet. All plants had basal leaves and were of different age groups. At this point, I would describe the species as uncommon rather than common. I am not sure when the population decline occurred, but there is no evidence that competition with grasses has had any effect."

SPECIES PROTECTION AND PRESERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[3C USDI, FWS 1985]
[3C USDI, FWS 1980]

STATE STATUS: None

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

MANAGEMENT FACTORS: This species is restricted to a relatively small geographic area and populations are apparently small. According to Irving (1980), *H. dentatum* colonizes open road cuts, logged areas and stream embankments. At the time he performed his research on *H. dentatum*, he believed that current management practices of the Coronado National Forest were compatible with this species and its habitat. However, he also stated that *H. dentatum* is sensitive to competition and as grasses and other plants begin to invade its rocky habitat, it is eliminated.

CONSERVATION MEASURES TAKEN: Listed as a sensitive plant species by Region 3 of the United States Forest Service.

SUGGESTED PROJECTS: Due to its limited range and small population sizes, Irving (1980) recommended periodic monitoring of *H. dentatum* populations to document its current status.

LAND MANAGEMENT/OWNERSHIP: BIA - Tohono O'odham Reservation; BLM - Safford Field Office; DOD Fort Huachuca Military Reservation; NPS - Chiricahua National Monument, Coronado National Memorial, and Saguaro National Park; USFS - Coronado National Forest; State Land Department; Audubon Research Ranch; TNC - Ramsey Canyon; Private.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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Dave Bertelsen - Tucson, AZ.

ADDITIONAL INFORMATION:

The chromosome number of *H. dentatum* is $2n = 36$ (Irving 1980). *Hedeoma dentatum* is recognized globally as *Hedeoma dentata*, while AGFD/HDMS recognizes it as *H. dentatum*.

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