

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDLAM0M0L0

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Hedeoma costata* Gray

COMMON NAME: Chiricahua mock pennyroyal, Ribbed false pennyroyal

SYNONYMS: *Hedeoma costatum* A. Gray, *Hedeoma pulchellum* Greene, *H. albescentifolium* Bartlett, *H. convisae* A. Nels.

FAMILY: Lamiaceae

AUTHOR, PLACE OF PUBLICATION: A. Gray, Synoptical Flora of North America 2(1): 363. 1878.

TYPE LOCALITY: Chiapas, Mexico.

TYPE SPECIMEN: HT: GH-1173. A.B. Ghiesbreght 815, 1864. IT: NY-563.

TAXONOMIC UNIQUENESS: The genus *Hedeoma* contains approximately 38 species according to Hickman (1993), and 17 species per USDA, NRCS (PLANTS database 2002). Eight species of *Hedeoma* are recognized by Lehr (1978) as occurring in Arizona. Within the species *Hedeoma costatum*, there exists three varieties, with only *H. c.* Gray var. *pulchella* (Greene) Irving occurring in Arizona.

DESCRIPTION: Perennial herb with numerous stems to 15 cm tall, the stems branching, hairy. Leaves ovate or elliptic, 5-10 mm long and 3-6.5 mm wide, coarsely serrate, rounded or shortly cuneate margins, hairy on both surfaces, the nerves not conspicuously raised. Flowers in clusters (cymules) spaced along the upper part of the stems, 3-5 flowers per cluster. Calyx 6.5-8.0 mm long; the tube 4.5-5.5 mm long, the upper teeth connate for about 1/4 of their length forming an upper lip 2-3 mm long, the lobes slightly reflexed and laterally spreading, subulate, hirsute-ciliate; the lower teeth recurved, subulate, 2-3 mm long, hirsute-ciliate. Corolla (united petals) of 2 forms: one white, slender, and about equal to the length of the calyx, the lobes minute; the other form blue, long and well-exserted from the calyx tube, 10-20 mm long; the upper lip ligulate, slightly reflexed and emarginate about 1.5 mm wide, about 1.5 mm long; the lower lip 3-4 mm wide and 2-3 mm long. Nutlets (seeds) 0.6 mm wide and 1.2 mm long, the surface minutely areolate, weakly glaucous.

AIDS TO IDENTIFICATION: Looking at a comparison among two of the varieties of *Hedeoma costatum*, variety *pulchellum* differs from var. *costatum* in that it is canescent (gray hairs) throughout, the bracteoles (second order reduced leaves) are subulate (awl-shaped), and it is usually conspicuously longer than the pedicels (stalk). Variety *costatum* is variously

pubescent but not canescent, its bracteoles are narrowly triangular, usually shorter than the pedicels. *H. c.* var. *costatum* is of central and southern Mexico and Texas, while *H. c.* var. *pulchellum* is from northern Mexico and southwestern United States.

ILLUSTRATIONS: Color photo of Isotype collection (A.B. Ghiesbreght in NYBG at http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list?this_id=4389173)

TOTAL RANGE: Northern Mexico (Chihuahua), western Texas, southern New Mexico, and southeastern Arizona.

RANGE WITHIN ARIZONA: Huachuca Mountains in Cochise County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowers from May – July.

BIOLOGY: Chromosome number $2n = 36$.

HABITAT: Arid calcareous mountain regions of mixed pine and oak woodlands, on open rocky limestone outcrops and cliff faces, and road embankments.

ELEVATION: 6,000 feet (1830 meters) in Arizona; about 3,000 to 7,500 feet (915 - 2288 meters) for the range.

EXPOSURE:

SUBSTRATE: Calcareous, rocky limestone outcrops and cliff faces.

PLANT COMMUNITY: Pine-oak woodland.

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None

STATE STATUS: None

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

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:**SUGGESTED PROJECTS:****LAND MANAGEMENT/OWNERSHIP:** USFS - Coronado National Forest.**SOURCES OF FURTHER INFORMATION****REFERENCES:**

- Correll, D.S., M.C. Johnston and collaborators. 1970. Manual of the Vascular Plants of Texas. Texas Research Foundation. Renner, Texas. p. 1382.
- Harvard University Herbaria (HUH). 2001. Index of Botanical Specimens. Accessed: 3/16/2004, from <http://brimsa.huh.harvard.edu/cms-wb/specimens>.
- Hickman, J.C., ed. 1993. The Jepson manual, higher plants of California. University of California Press. Berkeley, California. P. 714.
- Irving, R.S. 1980. The Systematics of *Hedeoma* (Labiatae). Sida 8(3): 218, 268-272.
- 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. 745.
- Lehr, J.H. 1978. A catalogue of the Flora of Arizona. Desert Botanical Gardens. Phoenix, Arizona. P. 133.
- Missouri Botanical Garden – TROPICOS, Nomenclatural Data Base. *Hedeoma costatum* A. Gray. http://mobot.mobot.org/cgi-bin/search_vast. Accessed: 16 Mar 2004.
- Rickett, H.W., ed. 1970. Wild Flowers of the United States. Volume Four-Part Three of Three Parts. The New York Botanical Garden. New York. P. 550.
- The New York Botanical Garden. NYBG Specimens Detailed Results. http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list. Accessed: 3/16/2004.
- 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.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

Hedeoma costatum Gray var. *pulchellum* (Greene) Irving, is the only variety of *H. costatum* in Arizona, and is tracked at the Full species level by the Heritage Data Management System.

Revised: 1999-11-15(JCP)
2000-02-01 (SMS)
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