

Added to California Rare Plant Rank 1B.3 on December 6, 2011**Rare Plant Status Review: *Monardella eremicola*
Proposed New Add to List 1B.3, CNDDDB G2G3Q / S2S3**

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October 31, 2011

Background

Monardella eremicola is a perennial subshrub to shrub in the Lamiaceae that is endemic to the Mojave Desert of California. It was recently described in 2009 by Mark Elvin and Andy Sanders, and will be included in *The Jepson Manual, Second Edition (TJM 2)*; available online at: http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=91093). Its specific epithet is in reference to its distribution, as all known collections of *M. eremicola* have been made in the desert (Elvin and Sanders 2009). In the northern portion of its range, particularly in the Panamint and Amargosa mountain ranges of Inyo County, *M. eremicola* is known to intergrade extensively with *M. linoides* ssp. *sierrae* and *M. odoratissima* ssp. *glauca* (Elvin and Sanders 2009, A. C. Sanders and M. A. Elvin pers. comm. 2011, *TJM 2*). As described by Elvin and Sanders (2009), *M. eremicola* is most similar to *M. robisonii*, *M. arizonica* (an Arizona endemic), *M. linoides*, *M. boydii*, and *M. mojavensis*, and therefore "...may best be treated as a subtaxon of one of them". Based on cladograms analyzing morphological characteristics, the relationship of *M. eremicola* to these other taxa is unresolved. Elvin and Sanders (2009) therefore provisionally described *M. eremicola* due to its apparent lack of resolution in aims to minimize the necessary taxonomic revisions once more information can be obtained. *Monardella eremicola* is distinguished from these other similar taxa by the conoideus glands on its stems as well as its distinct and separate geographic distribution. "The conoideus glands are miniature, stout protuberances that are subcylindrical to conical in shape and resemble miniature volcanoes" (Elvin and Sanders 2009). *Monardella eremicola* is further distinguished from *M. linoides* by its branching inflorescences, smaller cymose flower clusters, smaller and narrower bracts, and shorter calyx; from *M. robisonii* and *M. arizonica* by the absence of spreading, glandular trichomes on the stems and shorter calyces; from *M. boydii* by lacking minute, glandular trichomes on the calyx, and by containing longer, spreading trichomes on the stem; and from *M. mojavensis* in that it lacks minute, glandular trichomes on the calyx, contains long, spreading non-glandular trichomes on the calyx, and has shorter bracts. *Monardella eremicola* flowers from June to August (Elvin and Sanders 2009, *TJM 2*).

Monardella eremicola occurs in desert riparian scrub and pinyon-juniper woodland from approximately 1500 to 2100 meters in elevation. It is associated with granite or limestone soils and grows in the margins of desert washes, rock outcrops, among boulders, in boulder cracks, and on rocky slopes, "and is particularly common in bedrock cracks and on benches along canyon washes" (Elvin and Sanders 2009).

Monardella eremicola is known from approximately 12 occurrences in the Clark and Kingston mountains in the northeastern Mojave Desert of San Bernardino County

(Consortium of California Herbaria 2011, Elvin and Sanders 2009). Of the 12 known occurrences, only 3 have been documented in the past 20 years (occurrences that have not been “seen” in the past 20 years are considered historic by the CNDDDB), and 4 are only represented by herbarium specimens that are over 50 years old. One collection from the Kingston Mountains (*R. F. Thorne 54796*, RSA334474) is tentatively included as *M. eremicola* since it contains few conoideus glands, however, it matches the rest of the *M. eremicola* plants from that area in all other characteristics (Elvin and Sanders 2009, A. C. Sanders and M. A. Elvin pers. comm. 2011). A specimen from northwest Arizona (*G. L. Clifton 39183*) is intermediate between *M. eremicola* and *M. arizonica* as it contains some characters of both (Elvin and Sanders 2009), and is possibly an undescribed taxon (A. C. Sanders and M. A. Elvin pers. comm. 2011).

The actual population size, population trends, area of occupancy, and land ownership of the occurrences of *M. eremicola* are not well known. There is potential that it extends into Arizona or Nevada, as Mark Elvin and Andrew Sanders borrowed over 5,000 specimens to review for *The Jepson Manual, Second Edition*, treatment, but about ninety-five percent of the collections were from California (A. C. Sanders pers. comm. 2011). *Monardella eremicola* is noted as scarce in areas where it has been seen recently, with only about 15 individual plants discovered at its type locality on Clark Mountain (A. C. Sanders 24565, IRVC, RIV, UCR); while some of its historic occurrences were noted as common (*C. B. Wolf 7577*, DS, RSA, UCR; *B. A. Prigge 2198*, RSA, UCR), frequent (*B. A. Prigge 1327*, RSA), and even dominant (*C. B. Wolf 7650*, RSA; Consortium of California Herbaria 2011). Although the range of *M. eremicola* is limited, it does extend from Clark Mountain through the Kingston Range, then northward into the Death Valley area, and “the relatively few records is likely partly because the area is so remote and poorly collected overall” (A. C. Sanders pers. comm. 2011). Suitable habitat within and beyond the known range of *M. eremicola* should be searched for potential additional occurrences.

Threats to *M. eremicola* are not known but, due to its limited number of known occurrences and restricted distribution and range, it should be considered of conservation concern.

Based on the available information, CNPS and CNDDDB recommend that *Monardella eremicola* be added to California Rare Plant Rank 1B.3 of the CNPS Inventory.

Recommended Actions

CNPS: Add to CNPS 1B.3

CNDDDB: Add to CNDDDB G2G3Q / S2S3

Please review the draft CNPS Inventory record below, respond Yes or No on the proposal to add this species to the Inventory and CNDDDB, and provide any edits/comments. If responding No, please provide supporting information.

Draft CNPS Inventory Record

Monardella eremicola A.C. Sanders & Elvin

Clark Mountain monardella

Lamiaceae

Rank 1B.3

San Bernardino

Clark Mtn. (249D) 3511555, Horse Thief Springs (274C) 3511578, Ivanpah (225D) 3511533, Kingston Peak (250B) 3511568

Pinyon-juniper woodland, riparian scrub (desert) / Granitic or carbonate. Usually in bedrock cracks and benches along canyon washes; elevation 1500-2100 meters.

Perennial subshrub to shrub. Blooms June-August.

Known only from the Clark and Kingston mtns. Similar to *M. arizonica*, *M. boydii*, *M. linoides*, *M. mojavensis*, and *M. robinsonii*; further study needed to indicate its relationship to these other taxa. Intergrades extensively with *M. linoides* ssp. *sierrae* and *M. odoratissima* ssp. *glauca* in the northern part of its range. See *Novon* 19:315-343 (2009) for original description.