Changed *Malacothamnus gracilis* to 1B.1 and kept *M. jonesii* as 4.3 in the CNPS Inventory on July 16, 2014

Rare Plant Status Review: *Malacothamnus gracilis* and *M. jonesii*
Proposed Rank Change of *M. gracilis* from California Rare Plant Rank 4.3, G3Q / S3.3 to 1B.1 ~~3.3~~, G1Q ~~G2Q~~ / S1 ~~S2~~
Proposal to keep *M. jonesii* as California Rare Plant Rank 4.3, G3 / S3.3

Danny Slakey (CNPS), Aaron E. Sims (CNPS), and Roxanne Bittman (CNDDB)
May 5, 2014

Background

Malacothamnus gracilis and *M. jonesii* are both California Rare Plant Rank (CRPR) 4.3 taxa that have been included in the CNPS Inventory since the First Edition (Powell 1974). They are members of the Malvaceae and are both endemic to the South Coast Ranges of California (Slotta 2012). A third plant in this group, *M. niveus*, is also on CRPR 4.3 and is being reviewed concurrently in a separate status review. In both *The Jepson Manual* (Bates 1993) and *The Jepson Manual, Second Edition* (Slotta 2012), *M. gracilis* and *M. niveus* are treated as synonyms of *M. jonesii*. The *Flora of North America* treatment for Malvaceae is not yet available.

Background on *M. gracilis*

Eastwood (1936) described *Malvastrum gracile* from the Coastal Ranges of San Luis Obispo County, separating it from *M. jonesii* by its leaves that are cuneate at the base, as opposed to truncate, and from *M. niveus* by its scabrous buds and calyces, versus the densely white-tomentose buds and calyces in *M. niveus.* Kearney (1951) moved the plant to the genus *Malacothamnus* and separated it from *M. jonesii* based mainly on its open-paniculate (versus contracted) inflorescence with fewer flowers. However, Kearny (1951) felt that *M. gracilis* was more similar to *M. abbottii*, a CRPR 1B.1 plant that is only known from the Coast Ranges of Monterey County. He separated *M. gracilis* from *M. abbottii* based on the broader, thinner, and darker bractlets of *M. gracilis*, as well as its darker, shorter calyx that is gradually (versus abruptly) acuminate. Munz (1959) followed Kearney's treatment, maintaining a closer relationship of *M. gracilis* to *M. abbottii* and separating the two taxa with the same morphological characters. Bates (1963) composed the next major revision of the genus, in which he only recognized two species in the entire genus: *M. chilensis* and *M. fasciculatus.* Bates (1963) treated *M. gracilis* as a synonym of *M. fasciculatus* subsp. *jonesii*. Unfortunately, we were unable to obtain a copy of Bates' dissertation, which would presumably explain the reason for this synonymy. *Malacothamnus jonesii* is now recognized at the species level, and *M. gracilis* is still treated as a synonym of it in the recent major California floras (Bates 1993 and Slotta 2012) as well as Slotta's (2004) recent study of the genus.

In contrast to the recent treatments, our best available information suggests that *M. gracilis* may merit taxonomic recognition, although perhaps at the infra-specific level. Several botanists expressed the notion that *M. gracilis* is fairly easy to distinguish from *M. jonesii* (D. Wilken, D. Keil pers. comm. 2013). Wilken (pers. comm. 2013) also noted

that the morphological differences separating *M. gracilis* from *M. jonesii* correlate with geographic distribution. Slotta (pers. comm. 2013) also recalled observing some morphological differentiation of *M. gracilis* from *M. jonesii*. Slotta's (2004) study of *Malacothamnus* used both molecular and morphological data in order to generate a phylogeny of the genus. The molecular data did not show clear resolution for many taxa, including *M. gracilis* and many taxa that continue to be recognized, probably due to continued intergradation and recent divergence of taxa. A suite of 19 morphological characters was assessed for all of the taxa in the study, *M. gracilis* included. However, in an analysis of morphological data that involved multi-dimensions scaling (MDS), *M. gracilis* was not included in the figure of results (Slotta 2004, figure 5.2) (it is unclear whether *M. gracilis* was omitted from this portion of the study, or merely omitted from the figure itself). Three specimens of *Malacothamnus gracilis* were included in another analysis of morphological data, using the Unweighted Pair Group Method (UPGMA); recognition of *M. gracilis* was not supported in this analysis (Slotta 2004). Ultimately, Slotta (2004) synonymized *M. gracilis* with *M. jonesii*; however, no explanation as to the reasoning for the synonymy was discussed. Local botanists, such as D. Wilken and D. Keil, feel that they can distinguish *M. gracilis* in the field. This fact causes us to hesitate to delete *M. gracilis* even through the current data offers no evidence to recognize it.

Although *M. gracilis* is currently included in the CNPS Inventory as a CRPR 4.3 taxon, the current data suggest that, if taxonomically accepted, it is much rarer than indicated. *Malacothamnus gracilis* only occurs near the southern extent of *M. jonesii*, in southern San Luis Obispo County and the extreme northern part of Santa Barbara County. By examining only specimens that are currently identified as *M. gracilis* or that have been identified as *M. gracilis* in the past, we estimate that there are only about seven known occurrences of *M. gracilis*. After further analysis by J. Chesnut (pers. comm. 2014), there may actually only be four occurrences of *M. gracilis*, with one being possibly extirpated (occurrence #3), and another having a suspect identification (occurrence #4). Previous determinations of specimens in the Consortium of California Herbaria (CCH) are not always listed, so additional specimens could exist. Three specimens that are currently treated as *M. jonesii* are located within several miles of known locations of *M. gracilis* (*H.C. Lee 416* and *517, UC*; *F.H. Raymond 125*, *UC*), but have never been treated as *M. gracilis*. These are highlighted in yellow in the attached "Locations_MalacothamnusJonesii" spreadsheet, and should be reviewed to confirm their identity. Only one ~~two~~ of the known occurrences of *M. gracilis* have been seen recently, from ~~both of which occur in~~ Lopez Lake Regional Park (occurrences not seen in the past 20 years are considered historical by the CNDDB). One occurrence is possibly ~~known to be~~ extirpated from flooding ~~as it was flooded~~ by the Twitchell Reservoir (*Hoover 6534*); since *M. gracilis* is known to grow on rocky ridgetops, portions of the occurrence could have survived (J. Chesnut pers. comm. 2014). Only one other occurrence has population information, and it is noted as being common (*Keil 13674*) (CCH 2013). The remaining occurrences have an unknown landowner and no population information.

Malacothamnus gracilis is threatened by development. The land between the two regions of where *M. gracilis* occurs (Phoenix and Saucelito Canyon) is privately owned and being developed to vineyards and homes (J. Chesnut pers. comm. 2014).

Based on the available information, CNPS and CNDDB recommend re-ranking *Malacothamnus gracilis* from CRPR 4.3 to CRPR 1B.1 ~~3.3~~. If more information on its taxonomy and distribution become available in the future, we will re-evaluate its status at that time.

Background on *M. jonesii*

Malacothamnus jonesii continues to be recognized in the recent major treatments of the California flora (Bates 1993 and Slotta 2012). However, if these recent treatments are accepted, *M. jonesii* would have a broader circumscription, given that *M. gracilis* and *M. niveus* are included as synonyms. CNPS and CNDDB propose to reject the synonymy of *M. gracilis* with *M. jonesii* (see "Background on *M. gracilis*" above), while accepting its synonymy with *M. niveus* (see the concurrent status review of *M. niveus*). Although there are over 175 specimens of *M. jonesii* (including *M. niveus* specimens) in the CCH (2013), many of them are duplicate collections, or were collected at the same locality. Even with the broader circumscription, there are only about 65 known occurrences of *M. jonesii*, consistent with many other CRPR 4 taxa. Of those occurrences, 22 have been seen recently and most have no information on the population size, with the exception of seven occurrences noted as being locally common, and six noted as being locally rare (CCH 2013). The vast majority of occurrences have an unknown landowner, but some specimens occur on the Los Padres National Forest (5), BLM lands (1), DOD lands (1), and on CDFW Reserves (2). Several specimens include location data that is too vague to adequately map, so additional occurrences could exist.

Based on the available information, CNPS and CNDDB recommend retaining *M. jonesii* on CRPR 4.3. If more information about this plant becomes available in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Re-rank *Malacothamnus gracilis* from CRPR 4.3 to 1B.1 ~~3.3~~; Keep *Malacothamnus jonesii* as CRPR 4.3
CNDDB: Re-rank *Malacothamnus gracilis* from G3Q / S3.3 to G1Q ~~G2Q~~ / S1 ~~S2~~; Keep *Malacothamnus jonesii* as G3 / S3.3

Current CNPS Inventory Records

*Malacothamnus gracilis (*Eastw.) Kearn.
slender bush-mallow
Malvaceae
CRPR 4.3
San Luis Obispo
[no quads listed]
Chaparral; elevation 240 – 370 meters.

Sent to: CW, T. Slotta on 05/05/2014

Perennial deciduous shrub. Blooms June to October.
A synonym of *M. jonesii* in *The Jepson Manual*.

Malacothamnus jonesii (Munz) Kearn.
Jones' bush-mallow
Malvaceae
CRPR 4.3
Monterey, San Luis Obispo
Chimineas Ranch (218B) 35119B8, Taylor Canyon (218C) 35119A8, Miranda Pine Mtn. (219D) 35120A1, Wilson Corner (245B) 35120D4, Atascadero (246B) 35120D6, Tierra Redonda Mountain (294C) 35120G8
Chaparral, Cismontane woodland; elevation 250 – 830 meters.
Perennial deciduous shrub. Blooms May to July.

Revised CNPS Inventory Records
Malacothamnus gracilis (Eastw.) Kearn.
slender bush-mallow
Malvaceae
CRPR 1B.1 ~~3.3~~
San Luis Obispo, Santa Barbara
Huasna Peak (220D) 3512013*, Tar Spring Ridge (220B) 3512024, Arroyo Grande NE (221A) 3512025, La Panza Ranch (244B) 3512042
Chaparral / usually rocky; elevation 190 – 575 meters.
Perennial deciduous shrub. Blooms May to October.
Previously CRPR 4.3; ~~move to CRPR 1B?~~ rarer than originally thought. Threatened by vineyard and housing development. Should possibly be treated as a variety of *M. jonesii*, but the combination is not available. ~~distinction from *M. jonesii* needs further study~~. A synonym of *M. jonesii* in *TJM* (1993) and *TJM 2*. See *Leaflets of Western Botany* 1(18):219-220 (1936) for original description and 6(6):130 (1951) for taxonomic treatment.

Malacothamnus jonesii (Munz) Kearn.
Jones' bush-mallow
Malvaceae
Synonym(s): *Malacothamnus niveus*
CRPR 4.3
Monterey, San Luis Obispo, Santa Barbara
Tepusquet Canyon (194B) 3412082, Twitchell Dam (195A) 3412083, Taylor Canyon (218C) 3511918, Chimineas Ranch (218B) 35119B8, Nipomo (220C) 3512014, Oceano (221D) 3512015, Branch Mtn. (219A) 3512021, Los Machos Hills (219B) 3512022, Arroyo Grande NE (221A) 3512025, California Valley (244D) 3512031, La Panza (244C) 3512032, Pozo Summit (245D) 3512033, Santa Margarita Lake (245C) 3512034, Camatta Ranch (245A) 3512043, Wilson Corner (245B) 3512044, Santa Margarita (246A) 3512045, Atascadero (246B) 3512046, Creston (269D) 3512055, Templeton (269C) 3512056, Cypress Mountain (270C) 3512058, Cholame (268A) 3512063, Estrella (269A) 3512065, Paso Robles (269B) 3512066, Adelaida (270A)

3512067, Cholame Hills (292C) 3512074, Ranchito Canyon (293D) 3512075, San Miguel (293C) 3512076, Bradley (294D) 3512077, Tierra Redonda Mountain (294C) 3512078, Parkfield (292B) 3512084, Valleton (293B) 3512086, Jolon (295B) 3512182, Slack Canyon (316C) 3612016
Chaparral, Cismontane woodland; elevation 160 – 825 meters.
Perennial deciduous shrub. Blooms April to October.
Includes *M. niveus*. Treated differently here than in *TJM* (1993) and *TJM 2*; which include both *M. gracilis* and *M. niveus* as synonyms. See *Bulletin of the Southern California Academy of Sciences* 24(3):88 (1925) for original description and *Leaflets of Western Botany* 6(6):135 (1951) for taxonomic treatment.

Literature Cited

Bates, D.M. 1963. *The Genus* Malacothamnus. Ph.D. Dissertation, University of California, Los Angeles.

Bates, D.M. 1993. *Malacothamnus*. Pp. 751-754 in Hickman, J.C. (ed.), The Jepson Manual: Higher Plants of California. University of California Press, Berkeley.

Consortium of California Herbaria (CCH). 2013. Data provided by the participants of the Consortium of California Herbaria. Regents of the University of California, Berkeley. Website: http://ucjeps.berkeley.edu/consortium/ [accessed 15 December 2013].

Eastwood, A. 1936. The shrubby *Malvastrums* of California. Leaflets of Western Botany 1(18): 213-220.

Kearney, T.H. 1951. The genus *Malacothamnus* Greene (Malaceae). Leaflets of Western Botany 6(6): 113-140.

Munz, P.A. 1925. A new *Malvastrum*, California. Bulletin of the Southern California Academy of Sciences 24(3): 88.

Munz, P.A 1959. A California Flora. University of California Press, Berkeley and Los Angeles, California. 1681 pp.

Powell, W.R. (ed.). 1974. Inventory of Rare and Endangered Plants of California. Special Publication No. 1. California Native Plant Society, Berkeley, California. 56 pp.

Slotta, T.A.B. 2004. Phylogenetics of the *Malacothamnus* alliance (Malvaceae): Assessing the role of hybridization and molecular and morphological variation in species delineation. PhD Dissertation, Virginia Polytechnic Institute and State University.

Slotta, T. 2012. *Malacothamnus*. Pp. 884-887 in Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.), The Jepson Manual: Vascular Plants of California (2nd ed.). University of California Press, Berkeley and Los Angeles, California.