Added to California Rare Plant Rank 2B.1 of the CNPS Inventory on March 14, 2018

Rare Plant Status Review: *Lycium exsertum*
Proposed Addition to California Rare Plant Rank 2B.1, G4G5 / S1

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Changes made to the original document are in blue text.

Background and Taxonomy
Lycium exsertum A. Gray is a perennial shrub in the Solanaceae known in California only from Whipple Mountains of San Bernardino County. It is primarily known from Arizona south to Sonora, Mexico and Baja California Sur. It is not included in *The Jepson Manual* (Nee 1993) and *The Jepson Manual, Second Edition* (Nee 2012); the Solanaceae treatment for the *Flora of North America* has not been published. *Lycium exsertum* is most similar to *L. fremontii*, which is known from southern California. It is distinguished from *L. fremontii* in having densely villous filaments on the lower half of the free portion (vs. glabrous or sparsely villous at base of the free portion), corolla lobes pale lavender (vs. corolla lobes purple), and flowers that are mostly pendulous (vs. flowers not pendulous in *L. fremontii*) (Kearney and Peebles 1951). The specific epithet "*exsertum*" likely refers to the stamen protruding out of the corolla.

Biology
Lycium exsertum is found in Sonoran desert scrub in Arizona, and now, at one known site in California in the Whipple Mountains. The elevation of the California site is 265 meters, and the plant was seen flowering in March. Associated species at the Whipple Mts site include *Acacia greggii, Lycium andersonii, Phacelia crenulata* var. *ambigua, Peucephyllum schottii, Gilia scopulorum,* and *Eriogonum thomasii* (Consortium of California Herbaria 2017, RSA805876). In Arizona, Lycium exsertum grows in washes and flats, below 1219 meters and flowers year-round, but primarily from January to March (SEINet 2017).

Distribution
Lycium exsertum is known from only one collection in California, making up a single occurrence east of Whipple Wash in a slot canyon, just east of Trail End Camp Road, on BLM land (André pers. comm. 2017). James André and Glenn Clifton originally found and made a collection of it in 2013, at which time they only counted seven plants. A more recent survey of the general area around the spring bloom of 2017 confirmed that the occurrence is extant and seemingly healthy, but no additional plants or populations were discovered in the region (André pers. comm. 2017).

According to S. De Groot (pers. comm. 2017), it is possible that she may have identified *L. exsertum* specimens as *L. fremontii* or *L. andersonii* x *fremontii* during her work on the Whipple Mountains Flora (De Groot 2017). There are a number of collections identified as *L. fremontii* or the hybrid that are from the Whipple Mountains wilderness area, and an expert in the group should review the specimens to verify their identity. We are not recognizing any additional records of *L. exsertum* in California until putative specimens can be reviewed and annotated.

Status and Threats
Lycium exsertum is unranked (SNR) in Arizona (NatureServe 2017). Its conservation status in Sonora, Mexico and Baja California is not known.

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According to James André (pers. comm. 2017), off road vehicle activity has caused extensive damage to the Whipple Mountains area, and while few of the *L. exsertum* plants he witnessed showed any direct disturbance, nearby shrubs had been recently smashed flat. This single population in California should be closely monitored in order to avoid its potential extirpation from the state due to OHV or other adverse activities. Land management agencies in the area should be alerted about this new California special status species and be urged to modify recreation policies.

If some or all of S. De Groot's collections of *L. fremontii* or the hybrid from the Whipple Mountains wilderness area are actually *L. exsertum*, they are not likely threatened by OHV activities: "the Whipple Mountains wilderness area […] is closed to OHVs. OHV use can occur [illegally] in the wilderness area, and indeed the areas outside the Wilderness along the Colorado River are pretty trampled, but the main part of the wilderness area is very rugged and OHVs are not too likely to make it very deep inside" (S. De Groot pers. comm. 2017).

Summary

Based on the available information, CNPS and CNDDB recommend adding *Lycium exsertum* to California Rare Plant Rank 2B.1 of the CNPS Inventory. If knowledge on the distribution, threats, and rarity status of *L. exsertum* changes in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Add *Lycium exsertum* to CRPR 2B.1
CNDDB: Add *Lycium exsertum* to G4G5 / S1

Draft CNPS Inventory Record

Lycium exsertum A. Gray
Arizona desert-thorn
Solanaceae
CRPR 2B.1
San Bernardino
Arizona; Baja California, Sonora, Mexico
Whipple Wash (121D) 3411433 ~~Hull Creek (474D) 3812011~~
Sonoran desert scrub / volcanic, gravelly; elevation 265 meters.
Perennial shrub. Blooms in January to March.
Discovered in CA by James André and Glenn Clifton in 2013. Potentially threatened by vehicles.
See *Proceedings of the American Academy of Arts and Sciences* 20:305 (1885) for original description.

Literature Cited

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