

Added to California Rare Plant Rank 1B.2 of the CNPS Inventory on June 16, 2016

**Rare Plant Status Review: *Ceanothus decornutus*
Proposed Addition to California Rare Plant Rank 1B.2, G1 / S1**

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Changes made to the original document are in blue text.

Background

Ceanothus decornutus V.T. Parker is a perennial shrub in the Rhamnaceae found on serpentine outcrops in western Marin County. It was recently described by Parker (2014) and is therefore not included in *The Jepson Manual* (Schmidt 1993) or *The Jepson Manual, Second Edition* (Wilken 2012); the Rhamnaceae treatment for the *Flora of North America* (*FNA*, Vol. 12) is not available at the time of this writing, and although there wasn't enough time to incorporate a full treatment of it in the upcoming *FNA*, it will key out as an exception to *C. jepsonii* with a note that "plants with 5-merous flowers have been named *Ceanothus decornutus* (D. Wilken pers. comm. 2016). *Ceanothus decornutus* was first recognized as a varying population of *C. jepsonii*, and is noted as differing from this species in the revised Marin Flora (Howell et al. 2007). It was first realized to be different from this taxon by Wilma Follette, who encouraged Roger Raiche to go look at it. Roger, who later brought it to the attention of Terri Thomas, and then to Tom Parker who subsequently described it as new (Parker 2014). *Ceanothus decornutus* appears to be part of a complex of species found mostly on serpentine and volcanic soils in Marin, Sonoma, and Napa counties. In order to assess significant differences in morphological traits between *C. decornutus* and other similar *Ceanothus* taxa, Parker (2014) made measurements of leaves and fresh fruit from 15 individuals of *C. decornutus* and *C. jepsonii* var. *jepsonii*, and ten individuals each of *C. gloriosus* var. *exaltatus*, *C. jepsonii* var. *albiflorus*, *C. purpureus*, and *C. sonomensis*. He did not include *C. confusus* or *C. divergens* in his analysis due to the presence of horns on their fruit and because their typical leaf only has spines near the tip. Parker's (2014) analyses included simple descriptive statistics as well as a Principal Components Analysis, which included leaf length, leaf width, spine number, spine length, and both with and without floral merosity. *Ceanothus decornutus* is close in appearance to *C. jepsonii*, but significantly differs in having 5-merous (versus 6-merous) flowers and fruit horns that are usually short (1-1.3 mm) and rounded, versus the lengthy (1.5-3 mm) and wrinkled horns on *C. jepsonii*. The leaves of *C. decornutus* are similar to *C. jepsonii*, but average fewer, shorter spines along the edges. *Ceanothus decornutus* also differs in having white to light blue colored flowers that sometimes include pink, where *C. jepsonii* in Marin County has dark blue-purple flowers. *Ceanothus decornutus* differs from other species in the North Bay Region by leaf and fruit characters (see Parker 2014 for further description of taxonomic differences, a key differentiating it from similar *Ceanothus* species of the Northern SF Bay Region, and multiple hypotheses regarding its origin).

Ceanothus decornutus occurs in rocky serpentine outcrops of chaparral, and is sometimes among clay-dominated soils. It essentially forms a monospecific maritime

chaparral stand, with occasional other woody species such as *Baccharis pilularis* and *Umbellularia californica* intermixed with or surrounded by serpentine grassland. *Ceanothus decornutus* occurs at an approximate elevation of 235-290 meters (Google Inc. 2015), and blooms from March to May (Parker 2014; CalPhotos 2016).

There are only two confirmed occurrences of *Ceanothus decornutus*, both along Nicasio Ridge, southeast of Black Mountain and paralleling Bolinas Ridge in Marin County. Its largest occurrence is approximately 0.09 km² (22.7 acres), with roughly 0.02 km² (5.35 acres) of it on property managed by Golden Gate National Recreation Area (GGNRA), and 0.07 km² (17.35 acres) of it on private property outside of GGNRA (area based on mapped distribution provided by GGNRA staff). The second occurrence is entirely on private property and only approximately 0.55 miles to the north of the main population. There is a potential for additional occurrences or sub-colonies of *C. decornutus* to be discovered in preferred habitat within the vicinity of Nicasio Reservoir; however, *Ceanothus* species on ridges to the north-northwest of Nicasio Ridge are other variable races of holly-leaved *Ceanothus*, such as *C. masonii* and *C. gloriosus* var. *exaltatus*, which are not on serpentine associated substrates (R. Raiche pers. comm. 2016).

The portion of GGNRA land on Nicasio Ridge where *Ceanothus decornutus* occurs is managed by Point Reyes National Seashore (M. Chasse pers. comm. 2016) and is leased by the park to ranchers (E. Hamingson pers. comm. 2016). Although there are cattle in grasslands below the occurrence and potentially near the larger portion on private property, there is no evidence of grazing or trampling along the steep slopes where *Ceanothus decornutus* occurs (M. Chasse and E. Hamingson pers. comm. 2016). Hamingson (pers. comm. 2016) has been doing removal of *Centaurea melitensis* in the section of the ridge where *Ceanothus decornutus* occurs on GGNRA lands for the past five years and it appears the population of *Centaurea* is declining with management; however, she notes that it does move into the *Ceanothus* openings and is therefore potentially an ongoing threat. *Ceanothus decornutus* is also possibly threatened by insect herbivory; in 2016 many plants were observed by the first author to be susceptible to herbivory by tussock moth caterpillars (*Orgyia* sp.) at the portion of the occurrence on GGNRA land.

Based on the available information, CNPS and CNDDDB recommend adding *Ceanothus decornutus* to California Rare Plant Rank 1B.2 of the CNPS Inventory. Although no current threats to the survival of this species are known, the majority of its distribution is on private property, and based on its very restricted range and small occurrence sizes, it could be threatened by stochastic events. If knowledge on the distribution, threats, and rarity status of *C. decornutus* changes in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Add *Ceanothus decornutus* to CRPR 1B.2

CNDDDB: Add *Ceanothus decornutus* to G1 / S1

Draft CNPS Inventory Record

Ceanothus decornutus V.T. Parker

Nicasio ceanothus

Rhamnaceae

CRPR 1B.2

Marin

San Geronimo (484C) 3812216

Chaparral (maritime) / serpentinite, rocky, sometimes clay; elevation 235-290 meters.

Perennial shrub. Blooms March to May.

Discovered in ~~the 1980's~~ 1989 by ~~Wilma Follette~~ ~~R. Raiche~~. Potentially threatened by non-native plants. **Possibly threatened by insect herbivory.** Similar to *C. jepsonii*; primarily differs from it in having 5-merous flowers that are white, light blue, or pink. See *Madroño* 61(4):399-406 (2014) for original description.

Literature Cited

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Google Inc. 2015. Google Earth (Version 7.1.5.1557) [Software]. Available at <https://www.google.com/earth/>.

Howell, J. T., F. Almeda, W. Follette, and C. Best. 2007. *Marin Flora, an illustrated manual of the flowering plants, ferns and conifers of Marin County, California*. Revised illustrated edition. California Academy of Sciences and California Native Plant Society (Marin Chapter), San Francisco, CA.

Parker, V.T. 2014. A newly described serpentine-endemic *Ceanothus* (Rhamnaceae) from coastal Marin County, California. *Madroño* 61(4): 399-406.

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