

Added to California Rare Plant Rank 1B.2 on December 19, 2011

**Rare Plant Status Review: *Hesperocyparis abramsiana* var. *butanoensis*
Proposed New Add to Rank 1B.2, G1T1 / S1**

Danny Slakey (CNPS), Aaron Sims (CNPS), and Roxanne Bittman (CNDDDB)
November 10, 2011

Changes made to the original document appear in blue text.

Background

Hesperocyparis abramsiana is a perennial evergreen tree that has been included in the CNPS Inventory since the first edition (1974), and was listed as Endangered by the U.S. Fish and Wildlife Service (USFWS) in 1987 (Adams and Bartel 2009c). It was originally treated as *Cupressus abramsiana*, which is the name still used by the USFWS, however, due to a subsequent taxonomic revision it is now treated as *Hesperocyparis abramsiana* (Adams and Bartel 2009a). This species is known from nine element occurrences in the California Natural Diversity Database (CNDDDB 2011), although they are lumped into five occurrences by the USFWS, due to the relatively close proximity of some populations (Bartel and Adams 2009c). Silba (2003) differentiated the five occurrences into five different subspecies, but this self-published work was not well-accepted, due to the lack of a taxonomic key or clear morphological characters to differentiate the subspecies, as well as the illegibility of the work (Bartel and Adams 2009c). Subsequent analyses of foliar terpenoids and genetic data (Inter-Simple Sequence Repeats; ISSRs), however, revealed that Silba's (2003) *H. abramsiana* var. *butanoensis* from Butano Ridge, San Mateo County (CNDDDB EO #4) warrants taxonomic recognition (Bartel and Adams 2009b, 2009c). These data are confirmed by morphological variation, as the cones of *H. abramsiana* var. *butanoensis* are longer and wider than those of the *H. abramsiana* var. *abramsiana* populations (Adams and Bartel 2009c, McMillan 1952). Also, the Butano Ridge occurrence is geographically isolated from the other occurrences, occurring about 11 km to the north of the nearest population (CNDDDB 2011), and in a different watershed (Bartel and Adams 2009c). *Hesperocyparis abramsiana* var. *butanoensis* is recognized in *The Jepson Manual, Second Edition (TJM 2)*, but is not treated in *Flora of North America (Vol. 2)*.

The single grove of *Hesperocyparis abramsiana* var. *butanoensis* occurs as an island within a well developed lower montane coniferous (redwood) forest (CNDDDB EO #4). It is found on a west-facing slope, with soils being very shallow or consisting of bare sandstone. Its associates include common chaparral species, such as *Ceanothus* spp., *Adenostoma fasciculatum*, and *Arctostaphylos tomentosa* (CNDDDB EO #4). The population extends from about 400 meters up to 490 meters in elevation (*TJM 2*).

The *Hesperocyparis abramsiana* var. *butanoensis* occurrence **was first estimated to consist of about 5000 individuals (McMillan 1952), but was later more accurately estimated to contain approximately 1,700 to 3,900 trees (McGraw 2007). The occurrence is approximately 3.1 hectares in size (McGraw 2007)** and is mostly located on Pescadero Creek County Park, although it extends slightly onto private land

(CNDDDB EO #4). While some occurrences of *Hesperocyparis abramsiana* var. *abramsiana* may be threatened by development and agricultural conversion (USFWS 1997), subspecies *butanoensis* is protected from these types of threats due to its occurrence in a county park. Introgression with horticultural plantings of *Hesperocyparis macrocarpa* or *Hesperocyparis glabra* has been noted in populations of *H. abramsiana* var. *abramsiana*, although this threat has not been documented particularly for *H. abramsiana* var. *butanoensis* (USFWS 1997). Alteration of the fire regime through fire suppression threatens *H. abramsiana* var. *butanoensis*; although it does not require fire to reproduce, fire cycles that are either too short or too long can adversely affect the persistence of this serotinous-coned taxon (USFWS 1997, McGraw 2007). The *H. abramsiana* var. *butanoensis* population is old, senescent, and would likely benefit from a burn (S. Herzberg pers. comm., J. McGraw pers. comm. 2011, McGraw 2011), but plans with the USFWS to burn the site have been cancelled or indefinitely delayed due to a lack of funding (S. Herzberg pers. comm. 2011).

The recognition of *H. abramsiana* var. *butanoensis* necessitates a revision of our knowledge about the remaining occurrences within the species, which are now treated as *H. abramsiana* var. *abramsiana*. The removal of a single occurrence from *H. abramsiana* var. *abramsiana*, however, should not affect its current California Rare Plant Rank of 1B.2.

Based on the available information, CNPS and CNDDDB recommend that *Hesperocyparis abramsiana* var. *butanoensis* be added to California Rare Plant Rank 1B.2, and that *Hesperocyparis abramsiana* var. *abramsiana* be maintained on Rank 1B.2.

Recommended Actions

CNPS: Add *Hesperocyparis abramsiana* var. *butanoensis* to CNPS 1B.2; retain *Hesperocyparis abramsiana* var. *abramsiana* on CNPS 1B.2 and remove Butano Ridge occurrence.

CNDDDB: Add *Hesperocyparis abramsiana* var. *butanoensis* to CNDDDB G1T1 / S1; retain *Hesperocyparis abramsiana* var. *abramsiana* on CNDDDB G1T1 / S1 and remove Butano Ridge occurrence.

Draft CNPS Inventory Record for *H. abramsiana* var. *butanoensis*

Hesperocyparis abramsiana (C.B. Wolf) Bartel var. *butanoensis* (Silba) Bartel & R.P. Adams

Butano Ridge cypress

Cupressaceae

Rank 1B.2

San Mateo

Franklin Point (409A) 3712223

Closed-cone coniferous forest, lower montane coniferous forest, chaparral / sandstone; elevation 400 – 490 meters.

Perennial evergreen tree.

Known only from Butano Ridge of the Santa Cruz Mtns. Threatened by alteration of fire regimes. See *Cupressus abramsiana* in *The Jepson Manual* (1993); USFWS also uses this name. See *Journal of the International Conifer Preservation Society* 10:1-49 (2003) for original description, *Madroño* 2(4):189-194 (1952) for distributional information, and *Phytologia* 91(1):160-185 and 91(2):287-299 (2009) for taxonomic treatments.

Revised CNPS Inventory Record for *H. abramsiana* var. *abramsiana*

Hesperocypris abramsiana (C.B. Wolf) Bartel var. *abramsiana*

Santa Cruz cypress

Cupressaceae

Rank 1B.2

Santa Cruz

Big Basin (408B) 37122B2, Davenport (408C) 37122A2, Felton (408D) 37122A1

Closed-cone coniferous forest, lower montane coniferous forest, chaparral / sandstone or granitic; elevation 280 – 800 meters.

Perennial evergreen tree.

Known from fewer than ten occurrences in the Santa Cruz Mtns. Threatened by development, agriculture, alteration of fire regimes, and introgression from planted *H. macrocarpa* and *H. glabra*. See *Cupressus abramsiana* in *The Jepson Manual* (1993); USFWS also uses this name. See *Aliso* 1:215-222 (1948) for original description, *Madroño* 2(4):189-194 (1952) for distributional information, and *Phytologia* 91(1):160-185 and 91(2):287-299 (2009) for taxonomic treatments.