

Changed to California Rare Plant Rank 3.3 on March 15, 2013**Rare Plant Status Review: *Heuchera rubescens* var. *versicolor*
Proposed Deletion **Change from Rank 2.3 to 3.3, G5T4 / S2 to G5T4Q / S2****

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Changes made to the original document appear in blue text.

Background

Heuchera rubescens var. *versicolor* is a perennial rhizomatous herb in the Saxifragaceae. It has been included in the CNPS Inventory since 1974 (1st Edition). It was recognized in *The Jepson Manual* (TJM 1993), with the caveat that the varieties of *H. rubescens* intergrade and that a monographic study of the group is needed. The varieties of *H. rubescens* were not recognized in *The Jepson Manual, Second Edition* (TJM 2), the *Flora of North America* (FNA), or *Intermountain Flora*, Vol. 3A (Cronquist et al. 1997). *Heuchera versicolor* was first described by Greene (1905), and was subsequently treated as *H. rubescens* var. *versicolor* by Stewart (1934) in a revision of the *H. rubescens* complex. Stewart's (1934) study used herbarium specimens from five major herbaria (Dudley Herbarium, Herbarium of F.W. Peirson of Pasadena, New York Botanical Garden, Pomona College Herbarium, and the U.S. National Herbarium), and did not rely on any field studies. Stewart (1934) recognized intergradation between the various entities she studied, and therefore grouped them as varieties of a single species, rather than separate species (as many taxa in the group had been previously treated). According to Stewart (1934), most of the varieties she recognized have distinct geographical distributions. TJM (1993) followed Stewart (1934) in recognizing var. *versicolor* and also recognized several infraspecific taxa that were described later.

Alternatively, Cronquist et al. (1997) recognize that *H. rubescens* is a polymorphic, difficult group, and complain that "virtually every minor variant has been given a name whether or not it bears any correlation with geographical distribution". Stewart's (1934) revision of the group was apparently limited by her inability to grasp the amount of variation within populations, probably because she reviewed specimens from only a few herbaria (Cronquist et al. 1997). As an example, the key developed by Stewart (1934) would place several of the type collections of var. *versicolor* into one of four other taxa because she did not account for variation in hypanthium length within those specimens. Cronquist et al. (1997) also note that characters used to segregate the varieties (including hypanthium length, length in relation to width of the inferior ovary, size and shape of the leaf blades, length of petioles, height of plants, and level of insertion of the filaments in relation to the petals) can vary within populations (and sometimes within plants) almost as markedly as they vary across populations. Based on field observations of *H. rubescens* from Arizona, Idaho, Nevada, and Utah (P. Holmgren pers. comm. 2013), Cronquist et al. (1997) note that "intermediates that could be only arbitrarily assigned a name are so common as to make taxonomic recognition untenable". They recommend treating this group as a single polymorphic species until a

biosystematic study can be completed; this treatment of the group was adopted by both *FNA* and *TJM 2*.

The synonymization of infraspecific taxa within *H. rubescens* is supported by our inability to differentiate them based on habitat, elevation, and geography. In *TJM* (1993), each variety found in California was described as occurring in the habitat and elevation of the entire species (except var. *alpicola*, which occurs in similar habitat types but only at higher elevations) (Jepson 1936). The USDA (2013) Plants Database includes maps of plants by county, and still uses the variety names from *TJM* (1993). By viewing the maps, one can see that there is little geographic separation of the varieties of *H. rubescens*, except perhaps for var. *truncata*, which only occurs in Oregon and Idaho.

There are currently 6 known occurrences of *Heuchera rubescens* var. *versicolor* from San Diego County in the CNDDDB, and all are over 20 years old (occurrences not documented in the past 20 years are considered historical by the CNDDDB). The Consortium of California Herbaria (CCH 2013) includes an additional three recent collections; one of them is from a historical locality in San Diego County (*Rebman 18276*), and the other two specimens represent two previously unknown occurrences from San Bernardino County (*White 7601* and *Wall 523*). Most of the collections from San Bernardino County in the CCH have no infraspecific determination, but some have been treated as var. *alpicola* or var. *glandulosa*. With accepting the recent treatments, *H. rubescens* is far too common to be included in the CNPS Inventory, with 533 collection records from 25 counties across the state (CCH 2013).

Based on the available information, CNPS and CNDDDB recommend ~~deleting~~ **changing** *Heuchera rubescens* var. *versicolor* from **California Rare Plant Rank 2.3 to 3.3** in the CNPS Inventory. If further taxonomic work is performed on the group and later supports the recognition of infraspecific taxa, CNPS and CNDDDB will re-evaluate its status at that time.

Recommended Actions

CNPS: ~~Delete~~ **Change** from Rank 2.3 to 3.3

CNDDDB: ~~Delete~~ **Change** from G5T4 / S2 to G5T4Q / S2

~~Current~~ **Revised CNPS Inventory Record**

Heuchera rubescens Torr. var. *versicolor* (Greene) M.G. Stewart

San Diego County alumroot

Saxifragaceae

Rank ~~2-3~~ **3.3**

San Diego

Arizona, Baja California, Colorado, New Mexico, Texas, Utah

Cuyamaca Peak (020A) 32116H5, Hot Springs Mtn. (048D) 33116C5, Palomar

Observatory (049D) 33116C7

Chaparral, Lower montane coniferous forest / rocky; Elevation 1500 – 4000 meters.

Perennial rhizomatous herb. Blooms May to June.

Previously on List 2.3. Difficult to differentiate from typical *H. rubescens* based on habitat, elevation, and geography; needs further study. A synonym of *H. rubescens* in *TJM 2*. See *Leaflets of Botanical Observation and Criticism* 1:112 (1905) for original description, and *Bulletin of the Southern California Academy of Sciences* 33(1):47 (1934) for taxonomic treatment.

(available online at <http://www.rareplants.cnps.org/detail/903.html>)

Literature Cited

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012 (*TJM 2*). The Jepson Manual: Vascular Plants of California (2nd ed.). University of California Press, Berkeley and Los Angeles. 1568 pp.

Consortium of California Herbaria (CCH). 2013. Data provided by the participants of the Consortium of California Herbaria. Regents of the University of California, Berkeley. Accessed on 2 January 2013. Available online at: <http://ucjeps.berkeley.edu/consortium/>

Cronquist, A., N.H. Holmgren, and P.K. Holmgren. 1997. Intermountain Flora: Vascular Plants of the Intermountain West, U.S.A. Vol. 3 Part A: Subclass Rosidae. New York Botanical Garden, New York. 446 pp.

Flora of North America Editorial Committee, eds. 1993+ (*FNA*). Flora of North America North of Mexico. 16+ vols. New York and Oxford.

Greene, E.L. 1905. *Leaflets of Botanical Observation and Criticism* 1: 112 (original description).

Hickman, J.C. (ed.). 1993 (*TJM 1993*). The Jepson Manual: Higher Plants of California. University of California Press, Berkeley. 1400 pp.

Jepson, W.L. 1936. A Flora of California Vol. 2: Capparidaceae to Cornaceae. California School Book Depository, San Francisco. 684 pp.

Stewart, M.G. 1934. A revision of the *Heuchera rubescens* group (Saxifragaceae) for the United States. *Bulletin of the Southern California Academy of Sciences* 33(1): 42-49 (taxonomic treatment).

United States Department of Agriculture (USDA). 2013. PLANTS Database. Accessed on 2 January 2013. Available online at: <http://plants.usda.gov/>