

Changed to California Rare Plant Rank 4.3 in CNPS Inventory on June 24, 2013**Rare Plant Status Review: *Lepidium virginicum* var. *robinsonii*
Proposed Rank Change from CRPR 1B.2, G5T3 / S3 to CRPR 4.3, G5T4 / S4**

Danny Slakey (CNPS), Aaron Sims (CNPS) and Kristi Lazar (CNDDDB)

May 17, 2013

Background

Lepidium virginicum var. *robinsonii* is an annual herb in the Brassicaceae that is found throughout southwestern California, extending into Baja California and the Channel Islands. It has been included in the CNPS Inventory since 1994, and is currently on California Rare Plant Rank (CRPR) 1B.2. It was first described as *L. robinsonii* by Thellung (1906), and then was treated as a variety of *L. virginicum* by Hitchcock (1936). It was recognized in *The Jepson Manual* (TJM 1993) but was treated as a synonym of *L. virginicum* ssp. *menziesii* in *The Jepson Manual, Second Edition* (TJM 2) and the *Flora of North America* (FNA). Comments from multiple field botanists (A. Sanders, J. Rebman, and F. Roberts pers. comm. 2013; S. Junak and S. Ratay pers. comm. 2011) suggest that *L. virginicum* var. *robinsonii* merits taxonomic recognition. Variety *robinsonii* is distinguished from the other infra-taxa within *L. virginicum* by its hairy upper stems and inflorescences, its cauline leaves with narrow lobes, and its short stature (1-2dm stems) (TJM 1993, Hitchcock 1936). Additionally, A. Sanders (pers. comm. 2013) noted that var. *robinsonii* plants tend to be more strongly branched at the base, and are found at lower elevations (0-885 m) than some of the other infra-taxa; vars. *pubescens* and *menziesii* tend to occur in montane habitats or adjacent to mountains (TJM 1993, A. Sanders pers. comm. 2013).

In California, *Lepidium virginicum* var. *robinsonii* is currently known from 141 occurrences distributed across 80 different USGS 7.5' Quadrangles. Of those, only seven occurrences are ranked good or excellent in the CNDDDB. However, only 8 occurrences are ranked fair, poor or extirpated, while the vast majority of occurrences (128) have an unknown occurrence rank. Many occurrences include notes suggesting that they may rank as good or excellent populations: a total of 27 list a population size over 500 individuals, or include notes stating that the plant is common or abundant, at least locally. Of the 141 occurrences, 58 have been documented recently (within the past 20 years). The plant is distributed across a wide range of land ownership, but the majority of landowners are unknown (81 occurrences). Occurrences with a known landowner are found on city lands (12 occurrences), Department of Defense lands (10 occurrences), county lands (7 occurrences), The Nature Conservancy preserves (7 occurrences), other parks (7 occurrences), California Department of Fish and Wildlife preserves (6 occurrences), U.S. Forest Service Lands (5 occurrences), Bureau of Land Management lands (2 occurrences), private lands (2 occurrences), an Indian Reservation (1 occurrence) and a university (1 occurrence) (see "Locations_LepidiumVirginicumRobinsonii" spreadsheet). These numbers do not add up to 141 occurrences, as several occurrences span property boundaries.

The distribution and abundance of *L. virginicum* var. *robinsonii* in Baja California is not well-known; herbarium studies would be needed to assess its status there (J. Rebman pers. comm. 2013). Variety *robinsonii* was not treated in Wiggins's (1980) *Flora of Baja California*, but several sources note that it occurs there (Hitchcock 1936, *TJM* 1993, Munz and Keck 1973). It likely occurs at least as far south as San Quintin, Baja California (about 250 km south of the border) (J. Rebman pers. comm. 2013).

The currently available data on *L. virginicum* var. *robinsonii* suggest that it is too common for CRPR 1B status. Shortly after *L. virginicum* var. *robinsonii* was added to the CNPS Inventory, Reiser (1994, 2001) claimed that the plant may be more common than suggested by its rank. While Reiser (1994, 2001) noted that it had been collected from many localities in coastal southern California, he also noted that it occurs in areas that have not been extensively visited and collected by botanists, highlighting a strong potential for finding new occurrences. Its small stature and non-showy nature may also have contributed to it being under-collected. More recent comments from several field botanists (A. Sanders and F. Roberts pers. comm. 2013) support downranking the plant to CRPR 4. Sanders (pers. comm. 2013) stated that he usually finds it in its suitable habitat, sometimes in abundance, while J. Rebman (pers. comm. 2013) noted that it is relatively common in San Diego County. However, it may be rarer on the Channel Islands as Junak et al. (1995) noted it as scarce on Santa Cruz Island.

The CNPS Inventory currently lists development, non-native plants, recreational activities, and road construction as possible threats to *L. virginicum* var. *robinsonii*, with additional threats from erosion and feral herbivores on Santa Cruz Island. These threats were included in the Inventory after reviewing field survey forms and other data submitted for this taxon to the CNDDDB and the CNPS Rare Plant Program. A recent review of the forms and data submitted for *L. virginicum* var. *robinsonii*, however, indicate that there is very little information on threats to this taxon. Only a few occurrence records indicate threats, which include invasive plant species, trampling from cattle, and one housing development. The indicated threats from erosion and feral herbivores on Santa Cruz Island were likely obtained from the Santa Cruz Island Flora (Junak et al. 1995). However, these threats, in addition to all other threats to *L. virginicum* var. *robinsonii* except perhaps competition from non-native plants, have been removed (D. Wilken pers. comm. 2013). Rebman (pers. comm. 2013) also noted that it may be losing ground to non-native annual grasses and forbs in San Diego County. Therefore, we propose to remove all threats related to this taxon, except for threats from non-native plants, from the CNPS Inventory at this time.

Based on the available information, CNPS and CNDDDB recommend downranking *L. virginicum* var. *robinsonii* to CRPR 4.3 at this time. Although it has not met the general criteria for downranking based on 50 or more occurrences ranked "good" or "excellent" by the CNDDDB, the broad distribution, high number of large occurrences, and removal and low number of existing threats to *L. virginicum* var. *robinsonii* indicate that it no longer meets the criteria of CRPR 1B.2.

Recommended Actions

CNPS: Re-rank from CRPR 1B.2 to 4.3

CNDDDB: Re-rank from G5T3 / S3 to G5T4 / S4

Current CNPS Inventory Record

Available online at www.rareplants.cnps.org/detail/1322.html

Revised CNPS Inventory Record

Lepidium virginicum L. var. *robinsonii* (Thell.) Hitchc.

Robinson's pepper-grass

Brassicaceae

Rank 4.3

Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, Santa Cruz Island, San Diego, Ventura

Baja California

Campo (008C) 32116E4, Morena Reservoir (009A) 32116F5, Tecate (009C) 32116E6, Dulzura (010A) 32116F7, Jamul Mountains (010B) 32116F8, Otay Mesa (010C) 32116E8, Otay Mountain (010D) 32116E7, National City (011A) 32117F1, Point Loma (011B) 32117F2, Imperial Beach (011D) 32117E1, Viejas Mountain (020C) 32116G6, El Cajon Mtn. (021A) 32116H7, San Vicente Reservoir (021B) 32116H8, Alpine (021D) 32116G7, Poway (022A) 32117H1, Del Mar (022B) 32117H2, La Jolla (022C) 32117G2, La Mesa (022D) 32117G1, Rodriquez Mtn. (034B) 33116B8, San Pasqual (034C) 33116A8, Valley Center (035A) 33117B1, Rancho Santa Fe (035C) 33117A2, Escondido (035D) 33117A1, San Luis Rey (036A) 33117B3, Encinitas (036D) 33117A3, Bucksnot Mtn. (048A) 33116D5, Beauty Mountain (048B) 33116D6, Aguanga (049A) 33116D7, Vail Lake (049B) 33116D8, Pechanga (050A) 33117D1, Temecula (050B) 33117D2, Pala (050D) 33117C1, Fallbrook (051A) 33117D3, Margarita Peak (051B) 33117D4, Las Pulgas Canyon (051C) 33117C4, Morro Hill (051D) 33117C3, San Onofre Bluff (052D) 33117C5, Butterfly Peak (066D) 33116E5, Hemet (067B) 33116F8, Sage (067C) 33116E8, Winchester (068A) 33117F1, Romoland (068B) 33117F2, Murrieta (068C) 33117E2, Bachelor Mtn. (068D) 33117E1, Alberhill (069B) 33117F4, Santiago Peak (070A) 33117F5, El Toro (070B) 33117F6, Tustin (071A) 33117F7, El Casco (085A) 33117H1, Riverside East (086A) 33117H3, Riverside West (086B) 33117H4, Lake Mathews (086C) 33117G4, Steele Peak (086D) 33117G3, Corona North (087A) 33117H5, Prado Dam (087B) 33117H6, Black Star Canyon (087C) 33117G6, Corona South (087D) 33117G5, Yorba Linda (088A) 33117H7, Redlands (106C) 34117A2, Yucaipa (106D) 34117A1, Fontana (107C) 34117A4, San Bernardino South (107D) 34117A3, Mt. Baldy (108B) 34117B6, Ontario (108C) 34117A6, Glendora (109A) 34117B7, Azusa (109B) 34117B8, San Dimas (109D) 34117A7, Mt. Wilson (110A) 34118B1, Los Angeles (110C) 34118A2, Crystal Lake (135D) 34117C7, San Fernando (137C) 34118C4, Sunland (137D) 34118C3, Ojai (140B) 34119D2, Lompoc (170B) 34120F4, Surf (171A) 34120F5, San Clemente Island North (SCMN) 32118H5, San Clemente Island South (SCMS) 32118G3, Santa Cruz Island B (SCZB) 33119H6, Santa Cruz Island C (SCZC) 33119H5, San Nicolas Island (SNIC) 33119B4

Chaparral, coastal scrub; elevation 1-885 meters.

Annual herb. Blooms January to July.

Possibly threatened by non-native plants. A synonym of *L. virginicum* ssp. *menziesii* in *TJM* 2. See *Mitteilungen aus dem Botanischen Museum der Universität Zürich* 28: 255-256 (1906) for original description and *Madroño* 3(7):265-320 (1936) for taxonomic treatment.

Literature Cited

Al-Shehbaz and J.F. Gaskin. 2010. *Lepidium*. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. Vol. 3, pp. 356-357.

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

Hitchcock, C.L. 1936. The genus *Lepidium*. *Madroño* 3(7):265-320.

Junak, S., T. Ayers, R. Scott, D. Wilken, and D. Young. 1995. A Flora of Santa Cruz Island. A Flora of Santa Cruz Island. 307 pp.

Munz, P.A and D.D. Keck. 1973. A California Flora with Supplement. University of California Press, Berkeley and Los Angeles. 1681 pp. and 224 pp.

Thellung, A. 1906. *Mitteilungen aus dem Botanischen Museum der Universität Zürich* 28: 255-256. (original description; not seen)

Wiggins, I.L. 1980. Flora of Baja California. Stanford University Press, Stanford. 1025 pp.