

Added to California Rare Plant Rank 1B.1 on January 17, 2013

Rare Plant Status Review: *Euphorbia jaegeri*

Proposed New Add to Rank 1B.1, G1 / S1

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Background

Euphorbia jaegeri is a perennial shrub in the Euphorbiaceae that is endemic to the desert scrub of southeastern California. It was recently described by Steinmann and Andre (2012) and is not included in *The Jepson Manual, Second Edition (TJM 2)*; the *Flora of North America* treatment for Euphorbiaceae is not yet published. *Euphorbia jaegeri* was named for Edmund Jaeger, who was the first person to collect this species (Steinmann and Andre 2012). *Euphorbia jaegeri* belongs to *Euphorbia* section *Anisophyllum* due to the presence of interpetiolar stipules and opposite leaves that are asymmetrical at the base. This section has either been recognized as *Chamaesyce* or *Euphorbia* subgen. *Chamaesyce* (as treated in *TJM 2*) during the last 70 years. However, Bruyns et al. (2006) greatly expanded the concept of subgen. *Chamaesyce* to include many species that had previously been placed in various subgenera of *Euphorbia*, “and following this modification, *Anisophyllum* is the oldest legitimate name at the rank of section that corresponds to *Chamaesyce* or subgen. *Chamaesyce* as previously recognized” (Steinmann and Andre 2012).

Euphorbia jaegeri is distinctive from all other *Euphorbia* and *Chamaesyce* taxa in California by its shrubby habit. Its progenitors are unknown, but it is most similar to *E. polycarpa* (*Chamaesyce polycarpa* in *TJM 2*), and Jaeger’s initial collection was determined by Wheeler (1941) as *E. polycarpa* var. *hirtella*, which is now considered a synonym of *E. polycarpa*. At the time, Wheeler (1941) considered Jaeger’s collection as a possible new variety of *E. polycarpa* based on having “appendages almost twice as wide as the glands and deeply parted into several segments”, however, he was reluctant to recognize it as distinct until seeds could be examined. The presence of seeds in subsequent collections showed that they differ from *E. polycarpa* in being larger (1.4 - 1.5 vs. 0.8 - 1.1 mm), and more strongly sculptured; “the seeds of *E. polycarpa* are smooth or lightly rugose or with less obvious transverse ridges” (Steinmann and Andre 2012). *Euphorbia jaegeri* is also similar to *E. setiloba* (*Chamaesyce setiloba* in *TJM 2*) in having dissected appendages. *Euphorbia setiloba*, however, is a prostrate annual with appendages that are irregularly jagged, while the appendages of *E. jaegeri* are dissected to the base and are far more regular than in *E. setiloba* (Andre pers. comm. 2012, Steinmann and Andre 2012). The flowering and fruiting period of *Euphorbia jaegeri* broadly overlap; reproductive plants have been found from October to May, but it can likely flower year-round when favorable conditions are present (Steinmann and Andre 2012).

Euphorbia jaegeri occurs in dry rocky hillsides and arroyos of Mojavean desert scrub. It primarily grows in gravelly soils or rock crevices, in substrates that vary from granitic, metamorphic, or calcareous origin, and is known from an approximate elevation of 600

to 850 meters. Associate perennial taxa include: *Ambrosia dumosa*, *A. salsola*, *Asclepias albicans*, *Bebbia juncea*, *Brandegea bigelovii*, *Brickellia californica*, *Ditaxis lanceolata*, *Encelia farinosa*, *Ephedra nevadensis*, *Eriogonum fasciculatum*, *Euphorbia polycarpa*, *Ferocactus cylindraceus*, *Fouquieria splendens*, *Hilaria rigida*, *Hyptis emoryi*, *Larrea tridentata*, *Mirabilis bigelovii*, *Opuntia basilaris*, *O. ramosissima*, *Parkinsonia florida*, *Peucephyllum schottii*, *Pleurocoronis plurisetia*, *Porophyllum gracile*, and *Simmondsia chinensis* (Steinmann and Andre 2012).

Euphorbia jaegeri is only known from four occurrences, from two general locations that are approximately 110 km apart. All four of its occurrences are recent, having been documented in the past 20 years (occurrences not “seen” in the past 20 years are considered historical by the CNDDDB). Its southern occurrence, the type locality, is from the Orocopia Mountains of Riverside County, and is the largest population (approximately 80 ha, 300-600 individuals). The northern occurrences include one from the Marble Mountains (4 ha, 50-100 individuals) and two from the adjacent Bristol Mountains (the southernmost is 15 ha, 50-200 individuals, and the other is 2 ha, 50-100 individuals) of San Bernardino County (Steinmann and Andre 2012). Although *Euphorbia jaegeri* has been sought after throughout the Mojave Desert by J. Andre for the past several years, it has the potential of occurring in interjacent desert mountain ranges such as the Coxcomb, Eagle, Iron, and Sheephole mountain ranges (Steinmann and Andre 2012); focused surveys should be conducted in these, and other nearby, mountain ranges in attempts to potentially discover additional occurrences.

All four known occurrences of *E. jaegeri* are potentially threatened by large-scale wind energy development. The southern most Bristol Mountains occurrence is bisected by a radio tower access road and is further threatened from the south by a rapidly approaching strip mine. The other Bristol Mountains occurrence and the Marble Mountains occurrence are very small, and potentially threatened by mining activities. The Orocopia Mountains occurrence is the largest of the four, and possibly the least threatened as a portion of the population occurs within the Orocopia Mountains Wilderness Area (Steinmann and Andre 2012).

Based on the available information, CNPS and CNDDDB recommend adding *Euphorbia jaegeri* to California Rare Plant Rank 1B.1 of the CNPS Inventory. Its currently known fragmented distribution, small population sizes, and significant existing and potential threats indicate that *E. jaegeri* clearly meets the requirements for Rank 1B.1 of the CNPS Inventory.

Recommended Actions

CNPS: Add to CNPS 1B.1

CNDDDB: Add to CNDDDB G1 / S1

Draft CNPS Inventory Record

Euphorbia jaegeri V.W. Steinmann & J. Andre´
Orocopia Mountains spurge

Euphorbiaceae

Rank 1B.1

Riverside, San Bernardino

Hayfield (062B) 3311566, East of Siberia (152A) 3411567, Amboy (151C) 3411556,
Cadiz (151D) 3411555

Mojavean desert scrub / rocky hillsides and arroyos, gravelly or rocky crevices; granitic,
carbonate, or metamorphic; elevation 600 - 850 meters.

Perennial shrub. Blooms October-May

Known only from the Bristol, Marble, and Orocopia Mtns. Potentially occurs in the
Coxcomb, Eagle, Iron, and Sheephole Mtns.; needs field surveys. Threatened by road
maintenance and mining. Potentially threatened by wind energy development. Similar
to *E. polycarpa* and *E. setiloba* (see *Chamaesyce polycarpa* and *C. setiloba* in *TJM 2*).
Not in *TJM 2*. See *Aliso* 30:1-4 (2012) for original description.