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
Aaron E. Sims (CNPS) and Roxanne Bittman (CNDDB)
December 5, 2012

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 rigidia, Hyptis emoryi, 
Larrea tridentata, Mirabilis bigelovii, Opuntia basilaris, O. ramosissima, Parkinsonia 
florida, Peucephyllum schottii, Pleurocoronis pluriseta, 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 CNDDB). 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 CNDDB 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
CNDDB: Add to CNDDB 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.