

Deletion of the Cliff Spurge *Euphorbia misera* from Appendix II

Proponents: Mexico and the United States of America

Summary: Cliff Spurge *Euphorbia misera* is a slow-growing, perennial succulent shrub from north-western Mexico and southern California in the USA. It occurs mainly in coastal scrub habitat at altitudes of 10–500 m but also occurs in central Sonora. The majority of the range lies in Mexico. Detailed information on its status there is lacking although it is described as widespread in some areas of Baja California State and locally common in others. In the USA, 26 known occurrences are reported by the California Department of Fish and Game. In some of these the species is reported as quite numerous (over 1000 plants) while in others it is apparently scarce. The plant is affected by habitat destruction owing to continuing coastal development and in the case of island populations, herbivory from introduced species such as European rabbits *Oryctolagus cuniculus*. Around half of known occurrences in both Mexico and the USA are within protected areas. It is covered by general regulations requiring permits for collection and commercialization of non-woody plants (Mexico) or succulents (California, USA).

The species was included in CITES Appendix II in 1975 in the general listing for the genus *Euphorbia*, amended in 1997 to include succulent species only.

In Mexico, the species is reportedly used locally in traditional medicines, although such use appears to be very limited. It is in cultivation in the USA but is evidently easily grown from both seed and cuttings, and relatively widely available as artificially propagated plants. Minimal trade in the species is reported in CITES trade data (nine specimens in total, the most recent in 1997, all reported as from the USA and as artificially propagated). The species has not been found advertized for sale outside the USA recently, and is unlikely to be in demand.

Euphorbia misera can reportedly be distinguished from other shrubby Appendix-II listed *Euphorbia* species occurring in Mexico and the USA by the characteristic shape of the leaves (heart-shaped at the base). It may be similar to other Appendix-II listed *Euphorbia* species occurring elsewhere. However it is not known to be similar to any Appendix-I listed *Euphorbia* species (all small forms from Madagascar) or to any Appendix-II listed *Euphorbia* that are reported in trade in any quantity as wild-collected plants.

Analysis: Extremely little international trade in *Euphorbia misera* has been recorded since 1975, and none in wild-collected specimens, nor is there expected to be any international demand for wild-collected specimens. There is thus no indication that trade in *Euphorbia misera* needs to be regulated to prevent its becoming eligible for inclusion in Appendix I in the near future, or to ensure that harvest from the wild is not reducing the population to a level at which its survival might be threatened by continued harvesting or other influences.

The species does not resemble any Appendix-I listed *Euphorbia*. It may possibly resemble other Appendix II-listed *Euphorbia* species, but is not known to resemble any whose trade might be a cause of concern and as it itself is not in trade, nor likely to be in trade, there is no reason to retain it in Appendix II for look-alike reasons.

Taking into account the precautionary measure outlined in Annex 4.4 of *Resolution Conf. 9.24. (Rev. CoP 14)*, there is no evidence to suggest that deletion would be likely to result in it qualifying for inclusion in the Appendices in the near future.

Supporting Statement (SS)	Additional information
<p>Mexico and USA.</p>	<p style="text-align: center;"><u>Taxonomy</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;"><u>Range</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;"><u>IUCN Global Category</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;"><i>Not assessed.</i></p>

Biological and trade criteria for retention in Appendix II (Resolution Conf. 9.24 (Rev. CoP14) Annex 2 a)

A) Trade regulation needed to prevent future inclusion in Appendix I

There are no global population estimates available.

Native to primarily coastal areas of north-western Mexico and south-western USA in xeric scrub or maritime/coastal succulent scrub habitat, at 10–500 m. Maritime scrub is characterized by low to moderate-sized shrubs with patchy or continuous cover. Coastal sage scrub habitat occurs variously on steep slopes, with sandy mudstone or shale soils, and on dunes and moderately-sloped terraces. *Euphorbia misera* grows on cliffs, bluffs, and rock outcroppings, where soils are fragile.

In Mexico, the species is characterized in Baja California as being “locally common” and as “widespread” on Punta Banda. *Euphorbia misera* is more common in Mexico and occurs in the states of Baja California, Baja California Sur, and Sonora, and on the islands of Guadalupe, Dátil, San Esteban, Tiburón and East and West San Benito Islands.

In the USA, the California Department of Fish and Game reports 26 occurrences in five counties. Population estimates within these vary from “no estimate,” to as few as 20 plants, to more than 1000 plants. Some of the largest populations occur on protected lands in San Diego County. Most populations in Orange County are small and fragmented. However, there are some large populations, including, one which is thought to contain up to 1500 individuals. Catalina Island holds only one known population, which was estimated to total 10–12 plants in 1993. The populations on Point Lomo Naval Base and Cabrillo National Monument have been characterised as “excellent”.

Populations in the USA were categorised as “stable” in 1994 and extant populations are characterised as slow growing, but stable if undisturbed. Their global status is secure as they are considered more common in Mexico than in California.

Euphorbia misera is not included in Mexico’s list of at risk species (PC 18 Doc 16.1.2). The species has an extensive distribution in Mexico, with non-coastal populations in central Sonora (Felger, 2000; Turner et al., 1995).

The California Department of Fish and Game Natural Diversity database (2009) has classified *E. misera* as secure (G5) in the Global Rank, as vulnerable (S3.2) in the state rank and on List 2.2 of the California Native Plant Society’s (CNPS) List meaning the species is regarded as fairly endangered in California but more common elsewhere.

Supporting Statement (SS)	Additional information
<p><u>B) Regulation of trade required to ensure that harvest from the wild is not reducing population to level where survival might be threatened by continued harvest or other influences</u></p> <p>According to the CITES trade database, international trade does not appear to be affecting the status of the species. Minimal international trade has been recorded with only one shipment of five artificially propagated specimens reportedly exported from the USA in the 1990s.</p> <p>In the USA, there is no evidence to suggest that specimens are being harvested from the wild as this species is easily cultivated from cuttings and seeds and seeds are easily harvested and stored. The USA seemingly cultivates <i>Euphorbia misera</i> for the domestic trade rather than the international trade.</p> <p><i>Euphorbia misera</i> is a slow growing species and is thought to have a low reproductive output.</p> <p><i>Euphorbia misera</i> is often found in inaccessible areas, assisting in its protection.</p> <p>There have been no reports of illegal collection or international trade in this species.</p>	<p><i>According to the import data recorded in the CITES trade database, one shipment of five artificially propagated E. misera from the USA to Japan was recorded in 1997. According to the exporters' reports, one specimen was exported from the USA to Canada in 1991 and three specimens were exported from the USA to Hong Kong in 1993. All the specimens recorded were artificially propagated.</i></p> <p><i>A brief Internet search indicated that E. misera was not readily available nor in demand in international trade.</i></p>
<p>Retention in Appendix II to improve control of other listed species</p>	
<p><u>A) Specimens in trade resemble those of species listed in Appendix II under Resolution Conf. 9.24 (Rev. CoP14) Annex 2 a or listed in Appendix I</u></p>	
<p><i>Euphorbia misera</i> is unlikely to be confused with other Mexican or US native <i>Euphorbia</i> that are listed in CITES Appendix II, including <i>E. antisiphilitica</i> and <i>E. Radians</i>, owing to their differing ranges and distinct morphological characteristics (e.g. the obcordate shaped leaves of <i>E. misera</i>).</p>	<p><i>Currently 10 species of succulent Euphorbia from Madagascar are included in Appendix I.</i></p>
<p><u>B) Compelling other reasons to ensure that effective control of trade in currently listed species is achieved</u></p>	
<p>Other information</p>	

Supporting Statement (SS)	Additional information
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Threats

Euphorbia misera has a limited and fragmented distribution.

Habitat destruction and alteration is one of the primary threats to *E. misera*, particularly as specimens are found in areas where soils are fragile. Coastal scrub habitat is under development pressure and habitats are changing owing to infrastructure development which is linked to erosion from road construction and trail-building, sand and gravel mining, heavy off-road vehicle use and dumping of litter. Herbivory from introduced species may also pose a threat

Domestic trade was considered a potential threat to *Euphorbia misera* in the USA when discussed by the Plants Committee in March 2009 (18th meeting). However, this is not likely to be a threat as the plants are cultivated rather than taken from the wild. They are easy to propagate from cuttings or seeds and the species is protected from wild-harvest.

In Mexico, populations are threatened by coastal development, especially in northern Baja California. It is used for medicinal purposes in Mexico, e.g. root tea is used for combating stomach ache, dysentery and venereal disease. However, this is highly localised to the Seri people.

Conservation, management and legislation

Listed in Appendix II of CITES in 1975.

In the USA, over half the known occurrences are located on state, federal or privately protected lands and in Mexico over half the distribution for *Euphorbia misera* is located within six protected areas, with the most occurring in Valle de los Cirios.

USA: *Euphorbia misera* is protected from wild harvest (unless granted a permit) by the *California Desert Native Plants Act* and the US *Lacey Act*.

Potential impacts on the species caused by activities such as habitat alteration are taken into consideration under the *California Environmental Quality Act* and by the California Coastal Commission (CCC). The CCC also administers the federal *Coastal Zone Management Act* which, among other things, regulates federal activities throughout the coastal zones.

Euphorbia misera has been on the California Native Plant Society's (CNPS) rare plant programme since 1974 and is currently on CNPS List 2, which includes "plants rare, threatened or endangered in California, but more common elsewhere". Because

The California Department of Fish and Game Natural Diversity database (2009) has classified E. misera as secure (G5) in the Global Rank, as Vulnerable (S3.2) in the State rank and on List 2.2 of the California Native Plant Society's (CNPS) List meaning the species is regarded as fairly endangered in California but more common elsewhere.

Supporting Statement (SS)	Additional information
<p>of its status as a List 2 species, the <i>California Environmental Quality Act</i> requires, disclosure of occurrences of this species during pre-project reviews and surveys, as well as mitigation for any significant impacts resulting from anticipated land use changes where this species occurs.</p> <p>Mexico: <i>Euphorbia misera</i> is protected by the <i>Ley General de Desarrollo Forestal Sustentable</i>, legislation regulating management and harvest of woody and non-woody plants. The <i>Ley General del Equilibrio Ecológico y Protección al Ambiente</i> also provides general protection. <i>Euphorbia misera</i> is also protected by enforcement measures, including tracking of legal and illegal trade.</p> <p>There is monitoring in National Protected Areas in place in Mexico but none which is specific to this species.</p>	
<u>Captive breeding/artificial propagation</u>	
<p><i>Euphorbia misera</i> is cultivated commercially in the USA for domestic trade. It is widely available in private nurseries and plant societies. <i>E. misera</i> can be easily cultivated from seeds and cuttings and seed are easily harvested and can be stored.</p>	<p><i>An Internet search did not find any specimens of E. misera for sale.</i></p>
<u>Other comments</u>	

Reviewers:

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References:

- California Department of Fish and Game, Natural Diversity Database. (2009). Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 71 pp.
- CITES. Eighteenth meeting of the Plants Committee, 17–21 March. (2009). <http://www.cites.org/eng/com/PC/18/E-PC18-16-01-02.pdf>. Viewed 16 December 2009.
- <http://www.cnplx.info/nplx/species?taxon=Euphorbia+misera>. Viewed 16 December 2009. (Nursery and seed sources: though currently no specimens available for sale and one simply provides guide on plant requirements).
- Felger, R.S. (2000). *Flora of the Gran Desierto and Río Colorado of Northwestern Mexico*. University of Arizona Press, Tucson.
- Turner, R.M., Bowers, J.E. and Burgess, T.L. (1995). *Sonoran Desert Plants: An Ecological Atlas*. University of Arizona Press, Tucson.