

Deletion of Laguna Beach Live-forever *Dudleya stolonifera* and Santa Barbara Island Live-forever *Dudleya traskiae* from Appendix II**Proponent: United States of America**

Summary: Laguna Beach Live-Forever *Dudleya stolonifera* and Santa Barbara Island Live-Forever *Dudleya traskiae* are succulent plants, endemic to the United States of America. Six known populations of *D. stolonifera* exist. Four are on lands managed by city and county governments. The remaining two occurrences are on private lands with no legal protection, but landowners are required to notify the California Department of Fish and Game ten days prior to any disturbance to the land where *D. stolonifera* occurs so that plants can be salvaged. The main potential threats to *D. stolonifera* are urban development and associated edge effects, and encroachment and competition by non-native plants. *D. traskiae* is restricted to Santa Barbara Island, part of the Channel Islands National Park. Under the US Endangered Species Act and agency regulations the National Park Service is required to conserve endangered and threatened species and their habitat and to avoid actions that may jeopardize the listed species' survival. The main potential threats to *D. traskiae* are nesting and roosting of the Californian Brown Pelican *Pelecanus occidentalis*, herbivory from the native Deer Mouse *Peromyscus maniculatus* and owl moth larvae (family Noctuidae), soil erosion caused by previous disturbances, and stochastic events.

Both species are listed under the U S Endangered Species Act. *D. stolonifera* is listed as threatened and *D. traskiae* as endangered. They are protected by this federal legislation and also by California State law. Wild-collection and possession of specimens from State and Federal lands is prohibited except for certain approved circumstances, such as research. Both species are also protected under the US Lacey Act. The US Fish and Wildlife Service are responsible for the listing status, recovery and law enforcement efforts for the protection of *D. stolonifera* and *D. traskiae* and have published a recovery plan for *D. traskiae*. Relevant State and Federal agencies will continue to monitor populations.

Both species were included in Appendix I of CITES at CoP4 in 1983 when wild-collection and trade were considered to be possible potential threats to the species. Following the Periodic Review of the Appendices process and recommendation from the Plants Committee, *D. stolonifera* and *D. traskiae* were transferred to Appendix II at CoP11 in 2000, and CoP12 in 2002, respectively. There has been no CITES recorded trade and no illegal trade noted in either species since they were transferred to Appendix II.

D. stolonifera is not known to be commercially available, either as wild-collected or artificially propagated specimens. Artificially propagated specimens of *D. traskiae* have been available at retail garden centres associated with botanic gardens and a few local commercial nurseries in California.

Analysis: There has been no recorded export of either *D. stolonifera* or *D. traskiae* since the species were listed in Appendix I in 1983. *D. stolonifera* and *D. traskiae* were moved to Appendix II in 2000 and 2002 respectively, in accordance with the precautionary measures in *Resolution Conf. 9.24 (Rev. CoP15)* that specify that no Appendix-I listed species should be removed from the Appendices unless it has first been transferred to Appendix II with monitoring of any impact of trade for at least two intervals between CoPs. No international trade in wild specimens of either species has been reported since their transfer to Appendix II. Given the National and State laws that protect the species in the United States, the remote, relatively inaccessible site locations of the species and evidently low international demand, wild-collection of specimens for international trade is considered very unlikely. It is unlikely that removal from the CITES Appendices will stimulate trade. Effective domestic protection measures are in place. On the basis of available trade data and information on the status and trends of the wild populations, the species no longer appear to meet the criteria for inclusion in Appendix II.

Supporting Statement (SS)	Additional information
<p>Synonyms for <i>Dudleya traskiae</i>: <i>Stylophyllum traskiae</i>; <i>Echeveria traskiae</i>.</p> <p>United States of America.</p> <p>Both species are considered Endangered in the 1997 IUCN Red List of Threatened Plants.</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>
Biological and trade criteria for retention in Appendix II (Res. Conf. 9.24 (Rev. CoP15) Annex 2 a)	
<u>A) Trade regulation needed to prevent future inclusion in Appendix I</u>	
<p><i>Dudleya stolonifera</i> and <i>D. traskiae</i> are endemics, with extremely narrow geographical ranges and small population sizes. Suitable habitat is restricted to discontinuous areas within the species' range.</p> <p>In 1998, the known population of <i>D. stolonifera</i> consisted of six occurrences comprised of approximately 8000 to 10 000 individuals. Since 1998, one population was determined to have 20 000 individuals; increasing the total abundance to 30 000 individuals in an area approximately 10 km² in size.</p> <p><i>D. traskiae</i> is endemic to Santa Barbara Island which is 2.6 km². In 1975, it was reported that <i>D. traskiae</i> had not been collected since 1968 and that the species was possibly extinct. However, following rediscoveries, the population of <i>D. traskiae</i> now consists of eleven colonies of approximately 1000 individuals in total.</p> <p>The largest habitat for <i>D. stolonifera</i> is considered stable and the largest populations occur on city and government lands that are unlikely to be developed. Prior to 1987, a portion of one population of <i>D. stolonifera</i> was reduced in size because the land was commercially developed.</p> <p>Little is known about the reproductive strategies of <i>D. stolonifera</i> and <i>D. traskiae</i>; though it is suspected they are self-fertilizing as is the case for many <i>Dudleya</i> species.</p>	<p><i>Not included in the IUCN Red List of threatened species.</i></p> <p><i>NatureServe G ranks report D. stolonifera and D. traskiae to qualify for category G1 (critically imperilled at a global level).</i></p> <p><i>In 1998, six populations of D. stolonifera were noted, all of which are believed to still be extant. Three additional occurrences were reported but were considered 'in question' based on inadequate documentation (USFWS, 2010).</i></p> <p><i>The largest populations of D. stolonifera are located at Mathis Canyon and account for 67% of individual plants (USFWS, 2010).</i></p> <p><i>Outplanting efforts of D. traskiae by National Park staff on Santa Barbara Island in 2005 boosted population numbers. The majority were surviving in 2011, but there have been no new outplanting efforts since 2005 (USFWS, 2012).</i></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>Trade was considered a significant threat to <i>D. stolonifera</i> and <i>D. traskiae</i> when they were included in Appendix I in 1983. At the time, plants of these species were known</p>	<p><i>D. stolonifera is reported to be unusual in collections (Anon A, undated).</i></p>

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<p>to be wild-collected for private collections, and wild-collected specimens were available in local nurseries. However, the easily accessible population of <i>D. stolonifera</i>, where collections had once occurred, no longer exists as the land has been commercially developed. The species were transferred to Appendix II, over ten years ago.</p> <p>All trade of <i>D. stolonifera</i> and <i>D. traskiae</i> has been reported at the genus-level (<i>Dudleya</i> spp.). The United States, the only range country for the species, has never reported trade in the species. Since the species were listed there has only been one export recorded, for artificially propagated specimens from France to Switzerland in 1985. In addition, one individual <i>Dudleya</i> spp. was exported from Mexico to the United States in 1984.</p> <p>There are two records for seized specimens from Mexico to the United States, which may have been misidentified. The CITES Trade Database reports 104 artificially propagated specimens of <i>D. traskiae</i> exported from Belgium to Switzerland in 2010. According to the CITES Scientific Authority of Belgium, the species in trade was not <i>D. traskiae</i> as reported but <i>Dudleya brittonii</i> (native to Mexico) which is not CITES-listed.</p> <p>There is no evidence of illegal trade from the United States in wild-collected specimens of <i>D. stolonifera</i> or <i>D. traskiae</i>. The proposal reports that International trade does not appear to be a factor affecting the status of <i>D. stolonifera</i> or <i>D. traskiae</i>.</p> <p><i>D. stolonifera</i> is not known to be commercially available, either as wild-collected or artificially propagated specimens. Artificially propagated specimens of <i>D. traskiae</i> have been known to be available at retail garden centres associated with botanic gardens and a few local commercial nurseries in California.</p>	<p><i>D. traskiae</i> is available to purchase as a living plant of 4 inches in size for USD8.95 from <i>Annie's Annuals and Perennials</i>, an online store. The website states that 'due to federal regulations we cannot sell this plant outside of California' (Anon B, undated).</p> <p>Park staff noted one incident of collection of <i>D. traskiae</i> from a plot being monitored between 1985 and 1987, but no other incidences have been noted since (USFWS, 2012).</p> <p>Over-utilisation of <i>D. traskiae</i> does not appear to be a threat (Blazek pers. Obs. 2011, in USFWS, 2012).</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 Res. Conf. 9.24 (Rev. CoP15) Annex 2 a or listed in Appendix I</u></p>	
<p>The species are the only <i>Dudleya</i> species listed in the CITES Appendices. There are no look-alike concerns with other CITES-listed plant species.</p>	
<p><u>B) Compelling other reasons to ensure that effective control of trade in currently listed species is achieved</u></p>	
<p>It is not thought that delisting <i>D. stolonifera</i> and <i>D. traskiae</i> will cause enforcement problems for other CITES-listed species.</p>	

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<p>Other information</p> <p>A number of factors in the land-use history of Santa Barbara Island may have contributed to the near demise of <i>D. traskiae</i>, including farming and the introduction of non-native herbivores, particularly rabbits.</p> <p>The main threats to <i>D. traskiae</i> are nesting and roosting of the Californian Brown Pelican (<i>Pelecanus occidentalis californicus</i>), herbivory from native Deer Mice (<i>Peromyscus maniculatus exilis</i>) and owlet moth larvae (family Noctuidae), soil erosion caused by previous disturbances, and stochastic events.</p> <p>The main threats to <i>D. stolonifera</i> are urban development and associated edge effects, and encroachment and competition by non-native plants.</p>	<p style="text-align: center;"><u>Threats</u></p> <p><i>One of the occurrences of D. stolonifera was recently subject to a development plan that was withdrawn and could be resubmitted at a future date (USFWS, 2010).</i></p>
<p><u>Conservation, management and legislation</u></p>	
<p>Both species are protected under the United States Endangered Species Act and by California State law as listed species. State and National listings prohibit wild-collection and possession of specimens from State and Federal lands, except for certain approved circumstances, such as research.</p> <p>Both species are also protected under the US Lacey Act, which prohibits trafficking in illegal plants and plant products of listed species.</p> <p>The species will continue to be monitored by the responsible State and Federal agencies.</p> <p>Four occurrences of <i>D. stolonifera</i> are on lands managed by city and county governments. The remaining two occurrences are on private lands with no legal protection, but landowners are required to notify the California Department of Fish and Game ten days prior to any disturbance to the land where <i>D. stolonifera</i> occurs so that plants can be salvaged. The range of <i>D. stolonifera</i> lies entirely within the boundaries of the Central/Coastal subregion of the California Natural Communities Conservation Planning area.</p> <p><i>D. traskiae</i> populations are restricted to the island of Santa Barbara where the population declined due to the introduction of non-native herbivores. The National Park Service eradicated all of the non-native herbivores, and later the non-native Iceplant (<i>Mesembryanthemum crystallinum</i>) was removed.</p> <p>The US Fish and Wildlife Service aim to secure <i>D. traskiae</i> in a vigorous self-sustaining condition, expand the distribution to include 95 percent of the suitable</p>	<p><i>State protections in California for D. stolonifera are; the Native Plant Protection Act (NPPA) and California Endangered Species Act (CESA), the California Environmental Quality Act (CEQA), and the Natural Community Conservation Plants (NCCP) (USFWS, 2010).</i></p> <p><i>D. stolonifera and D. traskiae are currently included in the California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California. Dudleya stolonifera is currently ranked 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously threatened in California) while Dudleya traskiae is afforded similar status as a 1B.2 plant (rare, threatened, or endangered in California and elsewhere; moderately threatened in California).</i></p> <p><i>D. stolonifera and D. traskiae are afforded state protections under the Native Plant Protection Act (NPPA), California Endangered Species Act (CESA) and the California Environmental Quality Act (CEQA) due to their State Listing status as Threatened (for D. stolonifera) and Endangered (for D. traskiae) under the California Endangered Species Act of the California Department of Fish and Game Code. The species are also afforded the same state protections due to their listing as California Rare Plant Rank 1B plants in the California Native Plant Society (CNPS) Inventory of Rare, Threatened, or Endangered Plants (CNPS Inventory).</i></p> <p><i>Listing as California Rare Plant Rank 1B plants in the CNPS Inventory also affords them further advocacy and public awareness. Removal of these species from CITES Appendix II would not alter this (Sims, 2012).</i></p>

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<p>habitat and eventually delist the species from the US Endangered Species Act.</p> <p>The National Park Service is responsible for the management and protection of <i>D. traskiae</i> on Santa Barbara Island. It has implemented numerous management actions to restore the natural biological processes and remove external sources of disturbance on the island, including eradicating non-native species, removal of visitor walking trails near sites of <i>D. traskiae</i>, restricting visitors to designated trails, camp areas, and boat landing area on the island and prohibiting off-trail exploration. The National Park Service routinely monitors populations of <i>D. traskiae</i> and conducts plant surveys on the island for additional plants.</p>	
<u>Captive Breeding/Artificial Propagation</u>	
<p>Artificially propagated specimens of <i>D. traskiae</i> have been known to be available at retail garden centres associated with botanic gardens in California, including Santa Barbara Botanic Garden and Rancho Santa Ana Botanic Garden, and a few local commercial nurseries.</p> <p>Propagation of <i>D. traskiae</i> is recorded within botanic gardens. The extent of artificially propagated plants of <i>D. stolonifera</i> and <i>D. traskiae</i> is unknown.</p>	<p><i>According to BGCI's PlantSearch (2012) database of ex situ plant collections, D. stolonifera is held in the collections of four botanic gardens and one associated seed bank. Four out of the five holdings are located in the US.</i></p> <p><i>PlantSearch (2012) records seven additional institutions holding of D. traskiae to those reported in the proposal. Four of these are located in the US.</i></p> <p><i>No accessions of D. stolonifera or D. traskiae are reported as held in the USDA National Plant Germplasm System (GRIN, 2012).</i></p> <p><i>The California Native Plant Link Exchange reports that, in addition to the two botanic gardens noted in the proposal, D. traskiae can also be purchased from Annie's Annuals. No nurseries or seed sources are listed for D. stolonifera (CNPLX, undated).</i></p> <p><i>When D. stolonifera was listed under the Endangered Species Act (in 1998), field-collected specimens were also cultivated in area nurseries (USFWS, 2010).</i></p> <p><i>Dudleya stolonifera and D. traskiae are both a part of the Centre for Plant Conservation National Collection. Santa Barbara Botanic Garden is the institution responsible for D. traskiae and Rancho Santa Ana Botanic Garden the institution responsible for D. stolonifera.</i></p> <p><i>Dudleya species grow easily from seed (O'Brien, 2012, through cultivation experience at Rancho Santa Ana Botanic Garden).</i></p>
<u>Other comments</u>	
<p>It is not thought that removing <i>D. stolonifera</i> and <i>D. traskiae</i> from the Appendices will stimulate trade, or cause enforcement problems for other CITES-listed species.</p>	

Reviewers: N. Fraga, B. O'Brien, A. Sims.

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