

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Fourteenth meeting of the Conference of the Parties
The Hague (Netherlands), 3-15 June 2007

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Transfer of *Nolina interrata*, including all parts and derivatives, from Appendix I to Appendix II in accordance with the precautionary measures in Annex 4, especially paragraph A. 2. a), of Resolution Conf. 9.24 (Rev. CoP13).

B. Proponent

The United States of America

C. Supporting statement

1. Taxonomy

- 1.1 Class: Monocotyledoneae
- 1.2 Order: Liliales
- 1.3 Family: Agavaceae (Liliaceae)
- 1.4 Genus, species or subspecies, including author and year: *Nolina interrata* Gentry 1946.
- 1.5 Scientific synonyms: None.
- 1.6 Common names: English: Dehesa bear-grass; San Diego bear-grass; Dehesa nolina
French:
Spanish: sotol, palmita
- 1.7 Code numbers: ---

2. Overview

Nolina interrata is a large succulent with an underground stem that forms a woody platform and produces many rosettes of long, flat leaves. Plants produce a single flower stalk approximately 1-2.5 m in height. The species is considered a narrow endemic with limited distribution in southern California, United States of America, and in northwest Baja California, Mexico. International trade is not a factor affecting the status of the species.

3. Species characteristics

3.1 Distribution

In Mexico, three populations of *N. interrata* are reported to occur in Baja California north of Ensenada. The southernmost population is located at Rancho de la Cruz, northeast of Ensenada; a second population is located northeast of La Mission; and a third population was discovered about 10 years ago near the border with the United States of America (USFWS 1998).

In the United States of America, *N. interrata* is known from nine occurrences within a 15.6 km² area of the interior foothills of San Diego County, California (USFWS 1998; CDFG 2006).

3.2 Habitat

The species occurs at 200–700 m in open mixed chaparral and chamise chaparral plant communities, which include many species that are adapted to periodic wildfires. The region has relatively cool, wet winters and hot, dry summers (USFWS 1998). Associated species include *Adenostoma fasciculatum*, *Helianthemum scoparium*, *Salvia clevelandii*, and *Tetracoccus dioicus* (USFWS 1998). Typically plants are found in clay soils derived from gabbro or metavolcanic bedrock (Oberbauer 1979).

3.3 Biological characteristics

Nolina interrata reproduces primarily asexually from underground stems. The species flowers profusely after fires. It is considered to be fire-dependent to induce mass flowering in populations and to continue successful proliferation (USFWS 1998). Occurrences that are entirely female plants require pollen from disjunct male plants to fertilize the flowers and produce viable seeds. Plants in disjunct populations may not flower simultaneously, because flowering is, in part, dependent upon site-specific fire history (Dice 1988).

Recent DNA work indicates that the genus *Nolina* probably evolved from within the family Convallariaceae (Kelch 2002). According to some researchers, it may be more appropriate to include the genus within that family.

3.4 Morphological characteristics

Perennial acaulescent; rosettes from branching horizontal, underground stems (caudices) from lignotubers (Dice 1993; Flora of North America 2003). Rosettes have 10-45 leaves; individual leaf blades 30–150 cm in length and 12–35 mm wide just above an expanded base 15-70 mm wide. Leaves are glaucous (white powdery) with minutely serrate margins. The species is dioecious (male and female flowers on separate plants). Inflorescence is a compound panicle, branched distally, on a single flower stalk approximately 1-2.5 m in height. Bracts are generally inconspicuous and persistent, 2-15 cm in length. The creamy white flowers do not have distinct sepals and petals, but are composed of tepals, 2-3.5 mm wide. The six stamens are fertile; ovary superior with 3 chambers. Capsules are thin-walled, 7-12 by 915 mm, notched basally at or near apex. Seeds are reddish brown in color, 4-6 mm in length by 3-4 mm wide (Dice 1993).

3.5 Role of the species in its ecosystem

Further study is needed to determine the role of the species in its ecosystem.

4. Status and trends

4.1 Habitat trends

Current information on habitat trends in Mexico is not available.

In the United States of America, two-thirds of all populations, which includes 90-100% of major populations, are located on protected lands; habitat for these populations is considered stable

and should greatly reduce further loss of habitat (USFWS 1998). Since 1995, the California Department of Fish and Game (CDFG) and its conservation partners have worked with private landowners to acquire more than 514 ha of habitat for conservation purposes (CDFG 2000).

4.2 Population size

The three populations in Mexico are each estimated to have fewer than 25 plants (USFWS 1998).

In the United States of America, there are nine documented occurrences of the species; of these, five are known in detail (USFWS 1998; CDFG 2006). The nine occurrences comprise approximately 9,000 plants (USFWS 1995). However, because the species reproduces primarily asexually, the exact number of plants that originate from seeds is not known, and therefore, exact population estimates are difficult to determine without genetic analysis (CDFG 2006).

4.3 Population structure

The species forms colonies of plants asexually through the expansion of underground stems.

4.4 Population trends

The range-wide conservation ranking for *N. interrata* is critically imperiled (G1) (NatureServe 2001). The species is also ranked as vulnerable by the IUCN (Walter and Gillett 1998).

In the United States of America: The status of *N. interrata* is considered stable to declining (CDFG 2000). Because *N. interrata* is known from only nine populations, there is concern that populations are vulnerable to extinction due to stochastic events (USFWS 1998). However, it is believed that the existing State and County regulatory measures and the conservation of the species on protected lands will reduce the likelihood of threats to the species. Furthermore, the species may potentially repopulate historically occupied areas if a natural fire regime is restored to those plant communities (USFWS 1998).

4.5 Geographic trends

The species' geographic trend is considered stable.

5. Threats

A significant threat to the long-term viability of the species is sustained fire prevention, which can result in senescent plant communities that may not survive the eventual and unpredictable fires that do occur. High fuels loads of woody plant material can build up in the absence of fire, which often result in unnatural, very hot, slow-burning fires that kill plants. Flowering of the species is dependent upon periodic fires; alterations of natural fire periodicity or prevention of prescribed burning can adversely impact the reproductive success of the species (USFWS 1998).

In a 1998, it was reported that a population in Mexico located near a major road could be eliminated by road construction to widen the road (USFWS 1998). According to sources recently contacted in California, it is uncertain if the road construction has occurred at the site (USFWS 2006).

In the United States of America urbanization and associated habitat loss, and further habitat fragmentation are no longer considered to be significant threats to the species because all significant populations are located on protected lands (USFWS 1998). Furthermore, access to those populations is difficult due to private property boundaries and rugged terrain (USFWS 1998). However, smaller populations on private lands may be adversely impacted by residential development.

Although there is no current evidence to suggest that plants and/or seeds are wild-collected, according to several sources, the collection of wild plants for the nursery trade is considered a threat to the species (Mathew 1994; NatureServe 2001). Oberbauer (1979) reported that plants of *N. interrata* had been collected for specimens, but that this activity had mainly involved plants salvaged from road cuts, eroded cuts, or bulldozed areas.

6. Utilization and trade

6.1 National utilization

United States of America: The species is listed under the California Endangered Species Act (CESA); therefore, the collection and sale of wild-collected specimens of *N. interrata* is prohibited under State law (CDFG 2006). There is little evidence suggesting demand for this species in the nursery trade. However, this may be due to the existing protective measures for the species.

6.2 Legal trade

The U.S. Management Authority's CITES Annual Report Data for the years 1994-2006 show no export or import of specimens of *N. interrata*. According to CITES trade data, since 1990 there have been two specimens of *Nolina* sp. exported from Belgium to Switzerland; two specimens of *Nolina* sp. exported from China to Kazakhstan; and 12 specimens of *N. interrata* exported from the Netherlands to Slovenia (UNEP-WCMC Database). All specimens were reported as artificially propagated and all trade occurred in 2002.

6.3 Parts and derivatives in trade

None documented.

6.4 Illegal trade

Unknown if it occurs.

6.5 Actual or potential trade impacts

The lack of evidence of trade or the species' occurrence even in U.S. domestic horticultural trade indicates a low demand for the species. However, to ensure effective monitoring of the effects of transferring the species to Appendix II, the proposal is for the continued inclusion of all parts and derivatives so that trade in seeds and other propagules may be controlled and documented.

7. Legal instruments

7.1 National

Mexico: The species is protected under NOM-059-SEMARNAT-2001 (CITES Management Authority of Mexico).

United States of America: Since 1979, the species has been listed as endangered in California under the Native Plant Protection Act (California Fish and Game Code (CFG Code) Section 1900 *et seq.*) and the California Endangered Species Act (CFG Code Section 2050 *et seq.*) (CDFG 2000).

The U.S. Lacey Act of 1981 also provides protection for this species.

7.2 International

Nolina interrata has been listed in CITES Appendix I since 1983.

8. Species management

8.1 Management measures

Mexico: The species is protected under NOM-059-SEMARNAT-2001 (CITES Management Authority of Mexico).

The United States of America: Approximately two-thirds of all populations, which include 90-100% of all major populations, are located on lands protected and managed by the California Department of Fish and Game (CDFG) and the non-government organization The Nature Conservancy (USFWS 1998). Populations on private lands are protected under the provisions of the San Diego County's Biological Mitigation Ordinance that requires encroachment of occupied habitat to be limited to 20% of the population on sites where impacts to plants cannot be avoided (USFWS 1998). In such cases, the CDFG may issue permits to land owners to salvage plants before adverse impacts occurs (Mary Ann Showers, staff environmental scientist, lead botanist, CDFG, pers. com. to USFWS 2006).

8.2 Population monitoring

The CITES Authority of Mexico did not provide information on this issue.

The United States of America: Populations are periodically monitored; however, not all populations have been assessed to date (CDFG 2006).

8.3 Control measures

8.3.1 International

This species has been subject to the trade controls of CITES Appendix I since 1983.

8.3.2 Domestic

Mexico: The species is protected under NOM-059-SEMARNAT-2001 (CITES Management Authority of Mexico).

In the United States of America, *N. integrata* is protected under the California Endangered Species Act (CESA). Under this law, nurseries in California are not allowed to sell wild-collected plants and parts of species listed under the CESA (Mary Ann Showers, staff environmental scientist, lead botanist, CDFG, pers. com. to USFWS 2006). The CDFG may issue permits to scientific or educational institutions for the collection, possession, transplantation or propagation of the species; permits are required for these activities on both private and public land (CESA Section 2081; CDFG 1997). The CDFG may also issue permits as a mitigation measure to salvage plants from lands being developed (Mary Ann Showers, staff environmental scientist, lead botanist, CDFG, pers. com. to USFWS 2006). The U.S. Lacey Act of 1981 also provides protection for this species (Section 7.1).

8.4 Artificial propagation

The limited trade data, as reported by UNEP-WCMC, indicate that the species is artificially propagated (see Section 6.2). Many species of *Nolina* are artificially propagated commercially (Bailey 1978; Griffiths; Isaacson 2000). However, there is little evidence to indicate that *N. integrata* is artificially propagated on a commercial scale.

8.5 Habitat conservation

In the United States of America all major populations occur on protected lands. A parcel of occupied land, currently not under any protective status, may be purchased in the future for inclusion into an existing wildlife refuge (G. Wallace, botanist, Carlsbad Fish and Wildlife Office, USFWS, pers. com. 2006).

8.6 Safeguards

In Mexico and the United States of America the species is protected under national and state laws.

9. Information on similar species

Nolina is a small genus composed of approximately 25-30 species distributed in Mexico and the United States of America (Dice 1993; Flora of North America 2003). The species *Nolina parryi* is similar in appearance; however, it has more leaves per rosette (45-200) and a taller flowering stalk (1.6-4 m) (Dice 1993; CITES 2003).

10. Consultations

The Scientific Authority of the United States of America solicited public comments via a public notice (U.S. *Federal Register* Vol. 71, No. 215, 2006). Consultation letters were sent to CITES Authorities in Mexico, and appropriate state and federal resource agencies in California. CITES officials in Mexico expressed concern about the potential collection of and trade in wild seeds as a result of transferring the species to Appendix II. However, in general, Mexico responded favorably to this proposal.

11. Additional remarks

The transfer of *N. interrata* to Appendix II, in accordance with the provisions of Annex 4, paragraph A. 2. a) of Resolution Conf. 9.24 (Rev. CoP13), would be appropriate for this species, provided that all recognizable parts and derivatives remain included in the Appendix-II listing. The Appendix-II listing would provide for continued protection and monitoring of trade under the provisions of the Convention.

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