

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



Twenty-second meeting of the Plants Committee
Tbilisi (Georgia), 19-23 October 2015

Interpretation and implementation of the Convention

Species trade and conservation

Periodic Review of species included in Appendices I and II
[Resolution Conf. 14.8 (Rev. CoP16)]

PERIODIC REVIEW OF *SCLEROCACTUS* SPP.

1. This document has been submitted by Mexico and the United States of America.*

Background

2. The United States submitted two proposals to transfer two *Sclerocactus* species from Appendix II to Appendix I at the 12th meeting of the Conference of the Parties (CoP12; Santiago, 2002). The proposal ([CoP12 Prop. 46](#)) for *Sclerocactus nyensis* was adopted by the Parties. The proposal ([CoP12 Prop. 47](#)) for *Sclerocactus spinosior* subspecies *blainei* was withdrawn due to concerns raised at the meeting concerning the taxonomic status of this taxon.
3. At the 15th meeting of the Plants Committee (PC15; Geneva, 2005), the United States volunteered to conduct a periodic review of the genus *Sclerocactus* ([PC15 WG3 Doc. 1 \(Rev. 1\)](#)). The Plants Committee subsequently added the genus to the list of taxa for periodic review for the intersessional periods between the 13th (Bangkok, 2004) and 15th meetings of the Conference of the Parties (Doha, 2010).
4. The CITES Scientific Authority of the United States funded the study "Report on the evidence supporting generic and species circumscriptions in the genus *Sclerocactus* with recommendations for a biologically justified taxonomy that will be stable into the future; and biological assessments of species of concern" conducted by Dr. J. Mark Porter and Dr. Linda M. Prince, of the Rancho Santa Ana Botanic Garden, Claremont Graduate University, California, USA.
5. The United States has submitted two updates on the periodic review of *Sclerocactus* to the Plants Committee. The first, was submitted to the 19th meeting ([PC19 Doc. 13.3](#); Geneva, 2011), and the second at the 21st meeting ([PC21 Doc. 19.3.3](#); Veracruz, 2014).
6. In order to review and complement the recommendations of document PC21 Doc. 19.3.3 regarding Mexican species of *Sclerocactus*, since mid-2015 the Mexican Scientific Authority, the National Commission for Knowledge and Use of Biodiversity (CONABIO), is financing and coordinating a study titled "Assessment of the conservation status and taxonomy of Mexican species of *Sclerocactus*

* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

(Cactaceae) listed under CITES Appendices,” under the leadership of Dr. Salvador Arias of the Institute of Biology at the National Autonomous University of Mexico.

7. The genus *Sclerocactus* was listed in the CITES Appendices when the Convention entered into force on 1 July 1975, under the family listing of Cactaceae. The CITES Standard Reference for Cactaceae is the CITES *Cactaceae Checklist* 2nd ed. (Hunt 1999). The *Checklist* includes 31 *Sclerocactus* taxa comprised of 20 species and 11 subspecies (9 Appendix-I taxa and 22 Appendix-II taxa). However, the CITES Checklist of CITES Species (UNEP-WCMC) and the CITES Species+ database (UNEP-WCMC 2015) currently include 20 species and one subspecies.
8. Since the genus *Sclerocactus* was first described in 1922 (Britton and Rose), there has been considerable controversy concerning the generic boundaries of *Sclerocactus* at generic and lower levels due to morphological similarities and distribution overlap of taxa (Heil and Porter 2004; Hochstätter 2005; Porter and Prince 2011; Schwabe et al. 2013). Thus the number of recognized species within *Sclerocactus* is inconsistent among treatments. While some treatments of *Sclerocactus* employ a broad circumscription of *Sclerocactus* by including the genera *Ancistrocactus*, *Echinomastus*, *Glandulicactus*, and *Toumeyia* within the single genus (e.g., Hunt et al. 2006; Butterworth 2015), other treatments employ a narrow circumscription of the genus, which exclude *Ancistrocactus*, *Echinomastus*, and *Glandulicactus* (*Flora of North America* 2004). Recent research, including phylogenetic and molecular analyses and morphological studies, support the inclusion of *Ancistrocactus*, *Echinomastus*, and *Toumeyia* within *Sclerocactus* (Porter et al. 2000; Butterworth and Porter reviewed in Porter and Prince 2011; Porter and Prince 2011), and the exclusion of *Glandulicactus* (Butterworth et al. 2002; Hernández-Hernández et al. 2011). Porter and Prince’s (2011) treatment includes *Ancistrocactus*, *Echinomastus*, *Sclerocactus* strict sense, and *Toumeyia*, and excludes *Glandulicactus*, with the recognition of several infraspecific taxa, as a stable circumscription of *Sclerocactus*.
9. *Sclerocactus* range from southwestern United States to northern Mexico, with the majority of taxa distributed in the United States. *Sclerocactus* are slow-growing, single-stemmed, perennial succulents, cylindrical in shape with hooked spines; taxa are exceptionally cold and drought tolerant. Due to the extensive geographic range of *Sclerocactus*, taxa occur across diverse edaphic environments and climatic gradients. According to Hunt (1999), of the 31 CITES recognized taxa of *Sclerocactus*: 18 taxa are endemic to the USA; 10 taxa are native to the USA and México; and 3 taxa are endemic to Mexico.
10. Many *Sclerocactus* taxa are narrow endemics with limited ranges and distributions, and small population sizes (Anderson 2001; Hochstätter 2005; USFWS 2007, 2008, 2010, 2010a, 2010b, 2010c; Porter and Prince 2011; USFWS 2011, 2011a; Butterworth and Porter 2013; USFWS 2013; NatureServe 2015).
11. Wild collection of specimens includes both seeds and plants. Taxa are vulnerable to collection due to their biological life history traits, habitat degradation, and predation, which are exacerbated by prolonged drought and the effects of climate change. In particular, the restricted ranges of seven U.S. endemic taxa (Table 1, below) and the persistent threats are the primary justification for the proposed transfer of the taxa from Appendix II to Appendix I, including *Sclerocactus spinosor* ssp. *blainei* (= *Sclerocactus blainei*) originally proposed at CoP12 (Santiago, 2002). We are particularly concerned that the collection of seeds for commercial trade may negatively affect the long-term survival of these taxa.
12. With this document, the United States and Mexico provide the results and conclusions of the periodic review of all known *Sclerocactus* taxa except one species (*S. uncinatus* and infraspecific taxa) under review by Mexico. In addition, the United States has prepared a draft proposal for seven endemic *Sclerocactus* taxa with the intent of submitting the final proposal to the 17th meeting of the Conference of the Parties (CoP17; Johannesburg, 2016).

Results and conclusions

13. The CITES Scientific Authorities of Mexico and the United States have assessed its native and endemic *Sclerocactus* taxa under the guidelines of Resolution Conf. 14.8 (Rev. CoP16) on *Periodic Review of species included in Appendices I and II*.
14. We note that the purpose of the Periodic Review is to review species included in Appendices I and II to determine whether their listings continue to be appropriate based on current biological and trade information, and utilizing the listing criteria of Resolution Conf. 9.24 (Rev. CoP16) on *Criteria for amendment of Appendices I and II*. And that a successful periodic review may result in a recommendation

that the species is appropriately listed and should be retained as listed, or transferred from Appendix II to I, or transferred from Appendix I to II.

15. On the basis of its findings, the United States recommends the transfer of seven U.S. endemic *Sclerocactus* taxa from Appendix II to Appendix I in accordance with Article II, paragraph 1 of the Convention and meeting Criterion A i), ii), and v); B) iii) and iv; and C) ii) of Annex 1 of Resolution Conf. 9.24 (Rev. CoP16), as shown in Table 1.

- Criterion A, as wild populations are small and are characterized by an observed inferred or projected decline in the number of individuals; with each subpopulation being very small; and demonstrating a high vulnerability to intrinsic and extrinsic factors. Criterion B because populations are restricted and are characterized by a high vulnerability to intrinsic and extrinsic factors and an observed, inferred, or projected decrease in the number of subpopulations and the number of individuals. The taxa also meet Criterion C, as a marked decline in the size of populations is inferred due to a decrease in the quality of habitat; a high vulnerability to intrinsic and extrinsic factors; and a decrease in recruitment.

16. Table 1: U.S. *Sclerocactus* taxa proposed for transfer from Appendix II to Appendix I.

Taxon	Recommendation
<i>Sclerocactus blainei</i> [A valid species, formerly recognized as a synonym of <i>Sclerocactus spinosor</i> ssp. <i>blainei</i> .]	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
<i>Sclerocactus cloverae</i> [A valid species, formerly recognized as a synonym of <i>Sclerocactus parviflorus</i> .]	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
<i>Sclerocactus cloverae</i> ssp. <i>brackii</i> [A valid taxon, formerly recognized as a synonym of <i>Sclerocactus parviflorus</i> .]	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
<i>Sclerocactus cloverae</i> ssp. <i>cloverae</i> [A valid taxon.]	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
<i>Sclerocactus parviflorus</i> ssp. <i>havasupaiensis</i>	Transfer from Appendix II to Appendix I.
<i>Sclerocactus parviflorus</i> ssp. <i>terrae-canyonae</i>	Transfer from Appendix II to Appendix I.
<i>Sclerocactus sileri</i>	Transfer from Appendix II to Appendix I.

17. We find that the nine *Sclerocactus* taxa listed in Appendix I continue to meet the biological criteria for inclusion in Appendix I. In accordance with the following criteria for inclusion in Appendix I: Article II, paragraph 1 of the Convention, and meeting Criterion A i), ii), and v); B) iii) and iv; and C) ii) of Annex 1 of Resolution Conf. 9.24 (Rev. CoP16), as follows.

- Criterion A, as wild populations are small and are characterized by an observed inferred or projected decline in the number of individuals; with each subpopulation being very small; and demonstrating a high vulnerability to intrinsic and extrinsic factors. Criterion B because populations are restricted and are characterized by a high vulnerability to intrinsic and extrinsic factors and an observed, inferred, or projected decrease in the number of subpopulations and the number of individuals. The taxa also meet Criterion C, as a marked decline in the size of populations is inferred due to a decrease in the quality of habitat; a high vulnerability to intrinsic and extrinsic factors; and a decrease in recruitment.

Our recommendations are noted in Table 3.

18. With the exception of the four taxa under review by Mexico (*S. uncinatus*, *S. uncinatus* ssp. *crassihamatus*, *S. uncinatus* ssp. *uncinatus* and *S. uncinatus* ssp. *wrightii*), we find that all other *Sclerocactus* taxa listed in Appendix II continue to meet the criteria for inclusion in Appendix II.

In accordance with the following criteria for inclusion in Appendix II:

- Article II, paragraph 2 (a) of the Convention: Although the *Sclerocactus* taxa are not necessarily now threatened with extinction, they may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilisation incompatible with their survival.
- Resolution Conf. 9.24 (Rev. CoP16) Annex 2 a, criterion A. On the basis of available trade data and information on the status and trends of the wild populations of the *Sclerocactus* taxa, it is known, or can be inferred or projected, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.
- Resolution 9.24 (Rev. CoP15) Annex 2b criterion A. Identification of *Sclerocactus* species can be difficult for non-experts. National experience has shown that enforcement and customs officers who encounter specimens of CITES-listed *Sclerocactus* at the ports are unlikely to reliably distinguish between the various species of *Sclerocactus* or with other cacti taxa.

Our recommendations are noted in Table 3.

19. The periodic review also revealed that the taxonomy of *Sclerocactus* has changed since the 1999 publication of the CITES Cactaceae Checklist. Thus, the CITES recognized taxonomy conflicts with more recent taxonomic treatments of the genus in the United States and Mexico (e.g., two species recognized as members of *Glandulicactus*, synonymy recognized as valid species, a subspecies recognized as a synonym of the CITES-listed species).
20. Furthermore, the species *S. erectocentrus* and its varieties *erectocentrus* and *acunensis*, and the species *S. johnsonii* have historically been recognized as distinct taxa. However, recent research indicates that these taxa are morphologically similar (Baker 2007; Porter and Prince 2011; Baker 2012), thus providing evidence to support the inclusion of *S. erectocentrus* within *S. johnsonii*, and that several infraspecific taxa be recognized in this new alignment (Porter and Prince 2011; Baker 2012). Although we are not recommending this nomenclature change at this time, we note that it should be taken into consideration in the current revision of the *CITES Cactaceae Checklist*.
21. Although the *Checklist* is being updated, we do not know whether the treatments of *Sclerocactus* will include nomenclature recognized in Mexico and the United States. Therefore, we recommend that the taxa, as noted in Table 2, be recognized as valid taxa, and that the CITES Species Database be amended accordingly. Additional information on the *Sclerocactus* taxa is provided in the United States draft CoP17 proposal, noted in paragraph 12. Mexico will also provide information with regards to the *Glandulicactus* taxa (CITES-listed *S. uncinatus*) at PC22.
22. Table 2: Amendments to the CITES Species Database and CITES Checklist.

Taxon	Recommendation
<i>Sclerocactus brevispinus</i> [A valid species, formerly recognized as a synonym of <i>Sclerocactus glaucus</i> .]	Retain in Appendix I. Amend the CITES Species Database.
<i>Sclerocactus wetlandicus</i> [A valid species, formerly recognized as a synonym of <i>Sclerocactus glaucus</i> .]	Retain in Appendix I. Amend the CITES Species Database.
<i>Sclerocactus erectocentrus</i> var. <i>acunensis</i> [A valid taxon, formerly recognized as a synonym of <i>Sclerocactus erectocentrus</i> .]	Retain in Appendix I. Amend the CITES Species Database.
<i>Sclerocactus erectocentrus</i> var. <i>erectocentrus</i> [A valid taxon, formerly recognized as a synonym of <i>Sclerocactus erectocentrus</i> .]	Retain in Appendix I. Amend the CITES Species Database.
<i>Sclerocactus intertextus</i> var. <i>dasyacanthus</i> [A valid taxon.]	Retain in Appendix II. Amend the CITES Species Database.
<i>Sclerocactus intertextus</i> var. <i>intertextus</i> [A valid taxon.]	Retain in Appendix II. Amend the CITES Species Database.

Taxon	Recommendation
<i>Sclerocactus whipplei</i> ssp. <i>busekii</i> [Subsumed into <i>S. whipplei</i> , formerly recognized as a subspecies.]	Synonym of <i>Sclerocactus whipplei</i> . Amend the CITES Species Database.
<i>Glandulicactus uncinatus</i> [Valid nomenclature, formerly recognized as <i>Sclerocactus uncinatus</i> and <i>S. uncinatus</i> ssp. <i>uncinatus</i>]	Under revision by Mexico, findings to be reported at PC22. Amend the CITES Species Database.
<i>Glandulicactus uncinatus</i> ssp. <i>wrightiae</i> [Valid nomenclature, formerly recognized as <i>Sclerocactus uncinatus</i> ssp. <i>wrightiae</i>]	Under revision by Mexico, findings to be reported at PC22. Amend the CITES Species Database.
<i>Glandulicactus crassihamatus</i> [Valid nomenclature, formerly recognized as <i>Sclerocactus uncinatus</i> ssp. <i>crassihamatus</i>]	Under revision by Mexico, findings to be reported at PC22. Amend the CITES Species Database.

23. Table 3: Summary of the status and results for the periodic review of *Sclerocactus* taxa (grey shaded rows are proposed for amendment).

	Taxon+	CITES Reference*	Range Country	National designation (ND) and conservation status (CS)#	IUCN ^a listing	Appendix Listing	Recommendation
1.	<i>Sclerocactus blainei</i> (Welsh & Thorne)	Yes, synonym of <i>S. spinosus</i> ssp. <i>blainei</i> (Welsh & Thorne) Hochstätter	USA	CS-Critically imperilled.	Not ranked	Appendix II	Transfer from Appendix II to Appendix I. Amend the CITES Species Database
2.	<i>Sclerocactus brevihamatus</i> (Engelmann) Hunt	Yes	USA	CS-Vulnerable.	Least concern	Appendix II	Retain in Appendix II.
3.	<i>Sclerocactus brevihamatus</i> ssp. <i>brevihamatus</i> (Engelmann) Hunt	Yes	Mexico, USA	MX: Not ranked. USA: CS-Vulnerable.	Not ranked	Appendix II	Retain in Appendix II.
4.	<i>Sclerocactus brevihamatus</i> ssp. <i>tobuschii</i> (Marshall) Taylor	Yes	USA	ND-Endangered.	Not ranked	Appendix I	Retain in Appendix I.
5.	<i>Sclerocactus brevispinus</i> Heil & Porter	Yes, synonym of <i>S. glaucus</i> (Schumann) Benson	USA	ND-Threatened; CS-Critically imperilled.	Critically endangered	Appendix I	Retain in Appendix I. Amend the CITES Species Database
6.	<i>Sclerocactus cloverae</i> Heil & Porter	Yes, synonym of <i>S. parviflorus</i> Clover & Jotter	USA	CS-Vulnerable.	Not ranked	Appendix II	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
7.	<i>Sclerocactus cloverae</i> ssp. <i>brackii</i> Heil & Porter	Yes, synonym of <i>S. parviflorus</i>	USA	CS-Critically Imperilled; listed as endangered in New Mexico State.	Not ranked	Appendix II	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
8.	<i>Sclerocactus cloverae</i> ssp. <i>cloverae</i> Heil & Porter	No	USA	CS-Vulnerable.	Not ranked	Appendix II	Transfer from Appendix II to Appendix I. Amend the CITES Species Database.
9.	<i>Sclerocactus erectocentrus</i> (Coulter) Taylor	Yes	Mexico, USA	MX: Not ranked. USA: CS- Vulnerable.	Least concern	Appendix I	Retain in Appendix I.

	Taxon+	CITES Reference*	Range Country	National designation (ND) and conservation status (CS)#	IUCN^ listing	Appendix Listing	Recommendation
10.	<i>Sclerocactus erectocentrus</i> var. <i>acuiensis</i> (W.T. Marshall) Bravo	Yes, synonym of <i>S. erectocentrus</i>	Mexico, USA	MX: ND-Endangered as <i>Echinomastus erectocentrus</i> spp. <i>acuiensis</i> . USA: ND-Endangered as <i>E. erectocentrus</i> var. <i>acuiensis</i> ; CS-Critically imperilled.	Not ranked	Appendix I	Retain in Appendix I. Amend the CITES Species Database.
11.	<i>Sclerocactus erectocentrus</i> var. <i>erectocentrus</i> (Coulter) Taylor	Yes, synonym of <i>S. erectocentrus</i>	USA	Not ranked.	Not ranked	Appendix I	Retain in Appendix I. Amend the CITES Species Database.
12.	<i>Sclerocactus glaucus</i> (Schumann) Benson	Yes	USA	ND-Threatened; CS-Imperilled.	Least concern	Appendix I	Retain in Appendix I. Amend the CITES Species Database by deleting the synonyms <i>S. brevispinus</i> and <i>S. wetlandicus</i> .
13.	<i>Sclerocactus intertextus</i> (Engelmann)	Yes	Mexico, USA	MX: ND-Threatened, as <i>Echinomastus intertextus</i> . USA: CS-Apparently secure.	Least concern	Appendix II	Retain in Appendix II.
14.	<i>Sclerocactus intertextus</i> (Engelmann) Taylor var. <i>dasyacanthus</i> (Engelmann) Taylor	No	Possibly Mexico, USA	USA: CS- Critically imperilled in Texas.	Not ranked	Appendix II	Retain in Appendix II. Amend the CITES Species Database
15.	<i>Sclerocactus intertextus</i> (Engelmann) Taylor var. <i>intertextus</i> (Engelmann) Taylor	No	Mexico USA	MX: Not ranked. USA: Not ranked	Not ranked	Appendix II	Retain in Appendix II. Amend the CITES Species Database
16.	<i>Sclerocactus johnsonii</i> (Engelmann) Taylor	Yes	Mexico USA	MX: Endangered, as <i>Echinomastus erectocentrus</i> ssp. <i>acuiensis</i> . USA: CS-Vulnerable.	Least concern	Appendix II	Retain in Appendix II.
17.	<i>Sclerocactus mariposensis</i> (Hester) Taylor	Yes	Mexico, USA	MX: ND-Threatened, as <i>Echinomastus mariposensis</i> . USA: ND-Threatened, as <i>E. mariposensis</i> ; CS-Imperilled.	Least concern	Appendix I	Retain in Appendix I.
18.	<i>Sclerocactus mesae-verdae</i> (Boissevain & Davidson ex Marshall & Block) Benson	Yes	USA	ND-Threatened; CS-Imperilled.	Least concern	Appendix I	Retain in Appendix I.
19.	<i>Sclerocactus nyensis</i> Hochstätter	Yes	USA	CS-Critically Imperilled.	Endangered	Appendix I	Retain in Appendix I.
20.	<i>Sclerocactus papyracanthus</i> (Engelmann) Taylor	Yes	USA	CS-Apparently secure.	Least concern	Appendix I	Retain in Appendix I.
21.	<i>Sclerocactus parviflorus</i> Clover & Jotter	Yes	USA	CS-Apparently secure.	Least concern	Appendix II	Retain in Appendix II.
22.	<i>Sclerocactus parviflorus</i> ssp. <i>havasupaiensis</i> (Clover) Hochstätter	Yes	USA	Not ranked.	Not ranked	Appendix II	Transfer from Appendix II to Appendix I.
23.	<i>Sclerocactus parviflorus</i> ssp. <i>intermedius</i> (Peebles) Heil & Porter	Yes	USA	CS-Vulnerable.	Not ranked	Appendix II	Retain in Appendix II.
24.	<i>Sclerocactus parviflorus</i> ssp. <i>parviflorus</i>	Yes	USA	CS-Apparently secure.	Not ranked	Appendix II	Retain in Appendix II.

	Taxon+	CITES Reference*	Range Country	National designation (ND) and conservation status (CS)#	IUCN ^a listing	Appendix Listing	Recommendation
25.	<i>Sclerocactus parviflorus</i> ssp. <i>terrae-canyonae</i> (Heil) Heil & Porter	Yes	USA	CS-Imperiled.	Not ranked	Appendix II	Transfer from Appendix II to Appendix I.
26.	<i>Sclerocactus polyancistrus</i> (Engelmann & Bigelow) Britton & Rose	Yes	USA	CS-Apparently secure.	Least concern	Appendix II	Retain in Appendix II.
27.	<i>Sclerocactus pubispinus</i> (Engelmann) Benson	Yes	USA	CS-Apparently secure.	Least concern	Appendix I	Retain in Appendix I.
28.	<i>Sclerocactus scheeri</i> (Salm-Dyck) Taylor	Yes	Mexico, USA	MX: Not ranked. USA: CS-Apparently secure.	Least concern	Appendix II	Retain in Appendix II.
29.	<i>Sclerocactus sileri</i> (Benson) Heil & Porter	Yes	USA	CS-Critically imperiled.	Vulnerable	Appendix II	Transfer from Appendix II to Appendix I.
30.	<i>Sclerocactus spinnosior</i> (Engelmann) Woodruff & Benson	Yes	USA	CS-Imperiled.	Least concern	Appendix II	Retain in Appendix II.
31.	<i>Glandulicactus uncinatus</i> (Galeotti) Blackberg	Yes, as <i>S. uncinatus</i> (Galeotti) Taylor and <i>S. uncinatus</i> ssp. <i>uncinatus</i>	Mexico, USA	MX: Not ranked. USA: CS-Apparently secure.	Least concern	Appendix II	Under revision by Mexico, findings to be reported at PC22. Amend the CITES Species Database.
32.	<i>Glandulicactus crassihamatus</i> (Weber) Blackberg	Yes, as <i>S. uncinatus</i> ssp. <i>crassihamatus</i> (Weber) Taylor	Mexico	Not ranked.	Not ranked	Appendix II	Under revision by Mexico, findings to be reported at PC22. Amend the CITES Species Database.
34.	<i>Glandulicactus uncinatus</i> ssp. <i>wrightii</i> (Engelmann) Ferguson	Yes, as <i>S. uncinatus</i> ssp. <i>wrightii</i> (Engelmann) Taylor	Mexico, USA	MX: Not ranked. USA: CS-Vulnerable.	Not ranked	Appendix II	Under revision by Mexico, findings to be reported at PC22. Amend the CITES Species Database.
35.	<i>Sclerocactus unguispinus</i> (Engelmann) Taylor	Yes	Mexico	MX: Under special protection, as <i>Echinomastus unguispinus</i> ssp. <i>unguispinus</i>	Least concern	Appendix II	Retain in Appendix II.
36.	<i>Sclerocactus warnockii</i> (Benson) Taylor	Yes	Mexico, USA	MX: Under special protection, as <i>Echinomastus warnockii</i> . USA: CS-Apparently secure.	Least concern	Appendix II	Retain in Appendix II.
37.	<i>Sclerocactus wetlandicus</i> Hochstätter	Yes, synonym of <i>S. glaucus</i>	USA	ND- Threatened.	Least concern	Appendix I	Retain in Appendix I. Amend the CITES Species Database.
38.	<i>Sclerocactus whipplei</i> (Engelmann & Bigelow) Britton & Rose	Yes	USA	CS-Imperiled.	Least concern	Appendix II	Retain in Appendix II. Amend the CITES Species Database to include synonym <i>Sclerocactus whipplei</i> ssp. <i>busekii</i> Hochstätter
39.	<i>Sclerocactus whipplei</i> ssp. <i>busekii</i> Hochstätter	Yes	USA	Not recognized.	Not recognized	Appendix II	Delete from the CITES Species Database.
40.	<i>Sclerocactus wrightiae</i> Benson	Yes	USA	USA: ND- Endangered; CS-Imperiled.	Near threatened	Appendix I	Retain in Appendix I.

+ Taxonomic references: Flora of North America; Integrated Taxonomic Information System (ITIS); and Porter and Price 2011.

* CITES References: The *CITES Cactaceae Checklist* 2nd ed. (Hunt 1999); the CITES Checklist of CITES Species (UNEP-WCMC); and the CITES Species+ (UNEP 2015).

The National designation (ND) for Mexico, it is the Norma Oficial Mexicana NOM-059-SEMARNAT-2010; for the United States, it is the Endangered Species Act of 1973. The conservation status (CS) for United States is designated by NatureServe.

^ The IUCN Red List does not assess and classify taxa below the rank of species.

Recommendations to the Plants Committee

24. The Plants Committee is invited to:

- a) Endorse the recommendations of Mexico and the United States, as reported in Table 1, to amend the Appendices in accordance with the Resolution Conf. 9.24 (Rev. CoP16).
- b) Endorse the draft proposal (under agenda item 22) submitted by the United States to amend the Appendices for seven *Sclerocactus* taxa in accordance with the Resolution Conf. 9.24 (Rev. CoP16).
- c) Take note of the recommendations regarding the *Sclerocactus* taxa that are appropriately listed in the Appendices, as reported in Table 3.
- d) Take note of the progress on the four taxa under review by Mexico.
- e) In consultation with the Nomenclature Specialist of the Plants Committee, adopt the amendments proposed for the CITES species database, as well as the 3rd edition of the *CITES Cactaceae Checklist*, as reported in Table 2.
- f) Request the Nomenclature Specialist of the Plants Committee to, in collaboration with specialists appointed both by Mexico and the United States, review the taxonomic and nomenclatural issue raised in paragraph 20 of this document, regarding *Sclerocactus erectocentrus* and *S. johansonii*.

25. References

The references are included in the United States draft *Sclerocactus* proposal, under agenda item 22: Proposals for possible consideration at CoP17.