

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



Nineteenth meeting of the Conference of the Parties
Panama City (Panama), 14 – 25 November 2022

IUCN/TRAFFIC SUMMARY OF THE ANALYSES OF THE PROPOSALS
TO AMEND THE CITES APPENDICES AT THE 19TH MEETING OF THE CONFERENCE OF THE PARTIES

This document has been submitted by the Secretariat on behalf of the International Union of the Conservation of Nature (IUCN) and TRAFFIC in relation with agenda item 89*.

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IUCN AND TRAFFIC **ANALYSES**

of the proposals to amend the CITES Appendices at the
19TH MEETING OF THE CONFERENCE OF THE PARTIES

14 - 25 NOVEMBER 2022



TRAFFIC

IUCN/TRAFFIC summary of the analyses of the proposals to amend the CITES Appendices at the 19TH MEETING OF THE CONFERENCE OF THE PARTIES

Panama City, Panama
14th - 25th November 2022



Prepared by IUCN Biodiversity Assessment and Knowledge Team and Species Survival Commission and TRAFFIC



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IUCN – International Union for Conservation of Nature is the global authority on the status of the natural world and the measures needed to safeguard it. IUCN is a membership Union composed of both government and civil society organisations. It harnesses the experience, resources and reach of its more than 1,400 Member organisations and the input of more than 15,000 experts.

The IUCN Species Survival Commission (SSC), the largest of IUCN's six commissions, has over 10,500 species experts recruited through its network of 168 groups (Specialist Groups, Task Forces and groups focusing solely on Red List assessments). Biodiversity loss is one of the world's most pressing crises, with many species' populations declining to critical levels. SSC is dedicated to halting this decline in biodiversity and to provide an unmatched source of information and advice to influence conservation outcomes, as well as contribute to international conventions and agreements dealing with biodiversity conservation.

TRAFFIC is a non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC plays a unique and leading role as a global wildlife trade specialist, with a team of over 170 staff working on five continents carrying out research, investigations and analysis to compile the evidence needed to catalyse action by governments, businesses and individuals, in collaboration with a wide range of partners, towards the shared goal of reducing the pressure of unsustainable trade on wild species.

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FOREWORD

CITES is an international agreement between governments which aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival. It originated from a resolution adopted at the 1963 IUCN Members' Assembly and entered into force on 1 July 1975. To ensure that CITES is effective in achieving this aim, decisions taken by the Parties to CITES need to be based on the best available scientific and technical information. This is particularly the case when deciding whether or not to include species in the CITES Appendices, transfer species between Appendix I and II, or remove them from the Appendices altogether. To assist Parties in ensuring that such decisions are evidence-based, IUCN and TRAFFIC undertake technical reviews of the proposals to amend the CITES Appendices for each of the Conference of the Parties (CoPs). It is with great pleasure that IUCN and TRAFFIC now produce the Analyses of the Proposals for CITES CoP19, which will take place in Panama City, Panama, in 2022. We would like to thank the team in TRAFFIC and IUCN for producing such a complex and helpful document in a very short time.

Information on the status and biology of species was collected from IUCN's Species Survival Commission Specialist Group network and the broader scientific community, and used to evaluate the proposals and the information provided by proponents against the CITES listing criteria. TRAFFIC has drawn on its own expert networks and information sources on trade. The resulting document brings together a broad range of expertise, which we are confident will be of assistance to the Parties in their consideration of the proposals.

The Analyses for CoP19 will not only provide an assessment of whether or not each proposal meets the criteria specified by CITES, but also summarises any additional considerations that maybe relevant to the decision on whether or not to adopt the proposal. These include, for example, any potential implementation challenges, benefits or risks that maybe associated with the adoption of the proposal.

With unsustainable and illegal trade driving declines in many wild species (biological resource use generally is a threat to 18,373 species assessed as threatened on The IUCN Red List of Threatened Species) underscored by the recent release of the IPBES Assessment of Sustainable Use of Wild Species and the collective under-performance of governments, business and civil society to halt the global decline in biodiversity, CITES has a key role to play in the next decade. Wise, evidence-based decisions that are true to the Convention's aim of ensuring that international trade is not a threat to wild species, will be needed alongside the contributions of other sectors to deliver a post-2020 decade that halts species extinctions, slows declines and promotes recovery.



Dr. Jon Paul Rodríguez
Chair, IUCN Species Survival Commission



Dr. Thomas Brooks
Chief Scientist, IUCN

INTRODUCTION

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) was opened for signature in Washington DC on 3rd March 1973, and to date has 184 Parties from across the world. If CITES is to remain a credible instrument for conserving species affected by trade, the decisions of the Parties must be based on the best available scientific and technical information. Recognizing this, IUCN and TRAFFIC have undertaken technical reviews of the proposals to amend the CITES Appendices submitted to the Nineteenth Meeting of the Conference of the Parties to CITES (CoP19).

The Analyses - as these technical reviews are known - aim to provide as objective an assessment as possible of each amendment proposal against the requirements of the Convention, as agreed by Parties and laid out in the listing criteria elaborated in *Resolution Conf. 9.24 (Rev. CoP17)* and other relevant Resolutions and Decisions. To ensure *the Analyses* are as accessible as possible to all Parties, we have created a bespoke webpage where *the Analyses* can be downloaded individually by proposal or in full (see <https://citesanalyses.iucnredlist.org/>).

For each of *The Analyses*, a "Summary" section presents a synthesis of available information taken from each proposal's Supporting Statement and other sources, and a separate "Analysis" paragraph provides an assessment of whether or not the proposal is considered to meet the pertinent criteria in *Resolution Conf. 9.24 (Rev. CoP17)* or other relevant CITES Resolutions and Decisions. In response to feedback from Parties, an additional paragraph is included for some proposals to summarise any "Additional considerations" that may be relevant to the decision on whether or not to adopt the proposal (for example, implementation challenges and potential risks or benefits for the conservation of the species concerned). Information used to compile these sections is provided in the "Summary of available information" section. Only information from sources other than the Supporting Statement is referenced in this section, and for brevity, these references are not repeated in the "Summary", "Analysis" or "Additional considerations" sections. See the Methods section for more information.

Although draft versions of the "Summary", "Analysis" and "Additional considerations" sections were shared with relevant experts for review, the conclusions drawn do not necessarily reflect the opinions of the reviewers.

The Analyses aim to highlight relevant information on which the Parties can base their decisions. They are produced with a limited budget under severe time constraints and are not exhaustive. Where proposals include many different taxa it is not possible to address them all in detail and there will invariably be omissions and differences of interpretation. We have nevertheless tried to ensure that the document is factual and objective, and consistent in how the criteria have been interpreted and applied across the proposals.

The Analyses were completed and made available online on 9th September 2022 to allow CITES Parties and other stakeholders sufficient time to consider the information in advance of the Conference of the Parties, which convenes for the nineteenth time on 14 November 2022 in Panama. The "Summary", "Analysis" and "Additional considerations" sections will be translated into French and Spanish and made available online. Printed versions of these sections will be made available to Parties at CoP19.

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We again acknowledge the generous support of all the project's donors in these economically difficult times.

Many individuals and institutions contributed to the compilation of *the Analyses*. Those to whom we would first like to extend our thanks are the reviewers (listed below), many of them members of the IUCN Species Survival Commission, TRAFFIC staff as well as the many other scientists and experts who have volunteered their time, data, contact list and expertise to this process. For this, we are immensely grateful.

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Reviewers

We are very grateful to the reviewers who contributed their valuable time to this project. Reviewers were not asked to comment on IUCN/TRAFFIC's conclusion of whether each proposal met the relevant criteria (in the "Analysis" paragraph), for which IUCN and TRAFFIC take sole responsibility.

The reviewers were:

I. Agarwal (Proposal 15), M. Ahmedulla (47), A. Angulo (34), M. Auliya (14), C. Barrows (17, 18), M. Barstow (46, 50, 51), A. Berryman (8, 9), S. Broad (11, 12, 13), J. Carlson (38), D. Chapple (19), P. Charvet (39), H.K. Chen (44, 46, 47, 48, 49, 50, 51), S. Chng (8, 9), Co-Chairs AfESG (4, 5), P.A. Crochet (16), F. Cunha (22), A. Das (15, 25), N. Dulvy (37), L. Feitosa (37), M. Fernandes (15, 25), S. Ferreira (2, 3), B. Flint (10), J. Fong (26), M. Gardner (19), S. Grange (17, 18, 20, 21, 27, 32, 33, 34, 35), M. Harfush (27), J. Iverson (29), K. Kecse-Nagy (16, 19), M. Knight (2, 3), K. Krishnasamy (8, 9, 24, 36), T. Lacher (6), C. Lasso (22), D. Leaman (45), R. Lewison (1), P. Lindeman (24), R. Macip-Rios (27, 28, 29, 30), D. Mahonghol (46, 50, 51), N. McGough (46, 50, 51), S.V. Meibom (45), S. Newbold (17, 18), D. Newton (46, 50, 51), T. Nguyen (14, 26), S.N. Nguyen (14), N. Okes (1, 2, 3, 4, 5), S. Oldfield (44, 47, 48, 49), V. Paez (27), J. Pluháček (1), S. Purcell (42), R. Reis (41), C. Rigby (38), G. Rincon (39), J. Rodríguez-Matamoros (35), C. Rutherford (50), G. Sant (19, 37, 38, 39, 40, 41, 42), R. Sawyer (17, 18, 20, 21, 27, 31, 32, 33, 34, 35), I. Seidu (40), C. Simpfendorfer (40), S. Singh (33), D. Sivadas (47), O. Sosa-Nishizaki (38), B. Stuart (36), V. Toral-Granda (42), A. Timoshyna (45, 48), G. Webb (11, 12, 13), K. Winfield (50), L. Xu (14, 22, 23, 24, 42), L. Young (10), K. Zhang (45).

METHODS

Criteria

The taxa included in the proposals were assessed according to the criteria in Res. Conf. 9.24 (Rev. CoP17). All relevant criteria were addressed regardless of those explicitly cited in the proposal. Where multi-taxon proposals included many taxa with a large number of these proposed as lookalikes we focused on those identified as traded in significant volumes were assessed against all relevant criteria.

For proposals regarding commercially exploited aquatic species, the general guidelines listed in the footnote to Annex 5 of Res. Conf. 9.24 (Rev. CoP17) with respect to the application of the definition of “decline” were taken into account when species were assessed against criterion 2aA for inclusion of species in Appendix II (refer to doc. AC25 Inf.10 for a detailed explanation of TRAFFIC’s application of listing criteria to commercially exploited aquatic species).

Information sources

To evaluate the proposals against the CITES listing criteria, information on the status and biology of species has been collected from IUCN’s Species Survival Commission Specialist Group network, peer reviewed and grey literature, news reports and experts in the broader scientific community. TRAFFIC has drawn on its own expert network and information sources to determine the nature and scale of any trade. Where possible, currencies were converted to USD with the average exchange rates of August 2022 sourced from xe.com unless otherwise specified.

Various databases were consulted to assess reported legal and illegal trade for all taxa proposed for listing. These include the CITES Trade Database, the EU-TWIX database, the TRAFFIC Wildlife Trade Information System (WiTIS), the United States Fish and Wildlife Service’s (USFWS) Law Enforcement Management Information System (LEMIS), ITTO Biennial Reports, and UN Comtrade.

CITES Trade Database

CITES trade data were downloaded on the 27th of July 2022, covering at least the last decade of reported trade for the taxa of interest. The last most complete year for which data exist for the majority Parties is 2020, however, some Parties have reported trade for 2021 prior to the 31st of October 2022 deadline (Res. Conf. 11.17 [Rev. CoP18]). Data were downloaded in Comparative Tabulation format. In some cases, the terms “whole organism equivalents” and “parts and derivatives” are referred to in the *Analyses*. Whole organism equivalents are an aggregation of term codes that can be reasonably equated to a whole individual. These include the term codes for bodies, live, skeletons, skins, and skulls (codes BOD, LIV, SKE, SKI, and SKU) where they are reported by number (see CITES Notif. 2021-044-A1 for more information on term codes). Parts and derivatives are the remaining term codes reported by number as well as other units. Sources are sometimes combined for brevity as “wild sources” and “captive sources”. Wild sources include source codes for wild, ranched, and unknown or unreported (codes “W”, “R”, “U” and unreported), and captive sources include captive-born and captive-bred or artificially propagated (codes “C”, “F”, “A” and “D”). We reported only direct imports and exports when summarising total volumes of commodities in trade to avoid duplication of records, unless otherwise specified.

LEMIS Database

LEMIS data used in the *Analyses* included trade reports from 2008 to 2020, reported by the USA. Data are based on USFWS Form 3-177 (Rev. 10/2017) that all wildlife importers and exporters must declare with the US Fish and Wildlife Service; this includes information on trade in CITES and non-CITES listed species. These data include records for imports, exports, and transits, as well as information regarding the outcome of the reported trade. This can be cleared, i.e. permitted trade, or refused, i.e. not permitted for trade. Records referred to as “cleared” in the *Analyses* refer to records that have been cleared under the Action as well as the final Disposition. Some records that are refused may subsequently be seized, abandoned, re-exported, or cleared. The reason for refusal cannot be inferred from the data. Sources are sometimes combined for brevity as “wild sources” and “captive sources”.

Wild sources include source codes for wild, ranched, and unknown or unreported (codes “W”, “R”, “U” and unreported), and captive sources include captive-born and captive-bred or artificially propagated (codes “C”, “F”, “A” and “D”).

LEMIS data was obtained through a Freedom of Information Act request to the US Government for data in the period 2008–2020, which included taxonomic data, description of the commodity, dates, action and disposition, purpose, source, quantity and unit, the type of trade (import/export/transit), country of origin, and the trading partner.

EU-TWIX

EU-TWIX is the Europe Trade in Wildlife Information Exchange database, managed by TRAFFIC on behalf of the participating countries. The EU-TWIX system provides users with a mailing list which facilitates the rapid exchange of information, expertise, and experience on wildlife trade enforcement. EU-TWIX also includes access to a dedicated website containing useful resources to support enforcement efforts as well as a database of wildlife seizures. The EU-TWIX database contains centralised data on seizures and offences reported by all 27 EU Member States, Bosnia and Herzegovina, Iceland, Switzerland, Ukraine, and the UK. Access to this database is restricted to wildlife law enforcement and management authorities in Europe. Data for use in the Analyses were downloaded with prior authorisation from the relevant countries on 27th April 2022, and included seizures made in the years 2011-2020.

TRAFFIC Databases

The Wildlife Trade Information System (WiTIS) is a database managed by TRAFFIC containing information on incidents involving wildlife seizures, poaching, and law enforcement actions, in addition to market monitoring and actionable information. This information is sourced predominantly from open-source media reports as well as some CITES Management Authorities, government agencies, customs organisations, social media platforms and NGOs. The whole database was consulted for the *Analyses*, and data are available from records created between 2010 to 2022. Non-confidential records held in this database are publicly available via the TRAFFIC Wildlife Trade Portal. Due to the nature of this database and illegal trade, it should not be inferred that there is a direct correlation between WiTIS incident data and the overall illegal wildlife trade, or that information across locations, species or time is consistent in the database.

In addition to the databases described above, a rapid search of online advertisements was conducted by TRAFFIC in August 2022 for some taxa through an online investigation software and intelligence platform. Common names, trade names, and scientific names as well as commonly used synonyms were used to search for online advertisements on publicly accessible fora. Results were catalogued in a database.

The references for these data sources are as follows:

CITES (2022). CITES Trade Database, UNEP World Conservation Monitoring Centre, Cambridge, UK.

EU-TWIX (2022). *Trade in Wildlife Information Exchange*.

LEMIS (2022). United States Fish and Wildlife Service Law Enforcement Management Information System.

TRAFFIC (2022a). Survey of online sales [electronic dataset], viewed 18 August 2022.

TRAFFIC (2022b). *Wildlife Trade Information System* [database].

Transfer of Common Hippopotamus *Hippopotamus amphibius* from Appendix II to Appendix I

Proponents: Benin, Burkina Faso, Central African Republic, Gabon, Guinea, Liberia, Mali, Niger, Senegal, Togo

Summary: The Common Hippopotamus or hippo *Hippopotamus amphibius* is a large semi-aquatic African mammal. It is widespread throughout sub-Saharan Africa, predominantly across southern and eastern Africa, with smaller, isolated populations in central and western Africa. In Africa it is known to be extant in 38 range States and is extinct in five.

Hippos require fresh water with areas shallow enough for them to stand and be completely submerged and large enough to contain the territories of several males. They live near rivers, lakes and wetlands in forest, savanna and shrubland areas where there are suitable open grasslands for grazing. Habitat selection is highly dependent on season and water availability. Hippos are gregarious and social in water, gathering in large herds comprising hundreds of individuals. They have a generation length of 10 years and produce only one offspring every two years under optimal conditions. Hippo densities are highly variable and dependent on local environmental factors, so accurately estimating the size of populations can be difficult.

The 2016 IUCN Red List assessment estimated a population of approximately 115,000–130,000 hippos. The greatest numbers were reported in southern Africa (60,000) with a stronghold in Zambia, and eastern Africa (50,000) with a stronghold in Tanzania. The western African population totals an estimated 7,500. According to the 2016 IUCN Red List assessment, country-level trends for *H. amphibius* populations indicated that they were decreasing in 16 range States (42%), stable in nine (24%), unknown in nine (24%) and increasing in four (11%). Based on evidence of declines of $\geq 30\%$ over three generations (30 years, 1986–2016), the IUCN Red List assessed *H. amphibius* as Vulnerable in 2016. The Red List assessment reported that past overestimations in population data have made accurately tracking long-term trends difficult, and also have important implications for management decisions.

While recent population census data indicate trends continue to vary across range States, increases have been reported within range States comprising some of the largest hippo populations, such as Botswana, and particularly within protected areas. Botswana's total hippo population, estimated at 2,000–4,000 in 2016, was estimated at 11,231–15,233 in 2018 so that the country now contains one of the largest hippo populations in Africa. Recent population census estimates have also been reported in Tanzania (20,000 in 2016 to 26,152–36,020 in 2018) and South Africa (7,000 in 2016 to 11,061 in 2018).

Major threats to hippo populations identified are habitat loss resulting from water diversion for agricultural, energy, mining, and residential development, as well as habitat degradation from water pollution. Competition for habitat and water, and activities such as fishing also lead to the threat of human–hippo conflict. Climate change such as extended periods of drought also poses a significant threat to hippos. The 2016 IUCN Red List assessment identified illegal and unregulated hunting for meat and ivory as a primary threat; however, the IUCN/SSC Hippo Specialist Group (IUCN SSC HSG) has not identified ivory poaching as a current driver of hippo declines.

Conservation management and State protection strategies for hippos vary across Africa, with regulation and enforcement remaining weak in many countries. Hippos are completely protected from hunting for commercial or other purposes in 14 range States (Angola, Burkina Faso, Cameroon, Central African Republic, Congo, Gabon, Ghana, Guinea Bissau, Kenya, Niger, Nigeria, Rwanda, Senegal, and Somalia). In most other range States, hippos are partially protected, with hunting for commercial or other purposes allowed with a permit. Culling has been used as a management strategy in some range States as a response to drought (South Africa) or for problem animal control

(Malawi).

Hippopotamus amphibius has been included in CITES Appendix II since 1995. *H. amphibius* products in trade predominantly comprise ivory (teeth and tusks), trophies and skins from wild-sourced specimens. The largest exporters include Zimbabwe, Uganda, South Africa, and Zambia. Hippos have been the subject of a CITES Review of Significant Trade (RST) process twice, firstly in 1999 and again in 2008. The RST resulted in Tanzania establishing an export quota of 10,598 teeth from 1,200 animals and hunting trophies. Illegal trade has been reported but is not considered to be a serious threat.

Analysis: The Common Hippopotamus does not have a restricted range, nor does it have a small population. Estimates of population trends vary across African range States, with some *H. amphibius* populations stable or increasing, and others decreasing. At the species level, the global hippo population was reported to have declined by $\geq 30\%$ (but less than 50%) over three generations (30 years, 1986–2016). This is less than the guideline figure given in Res. Conf. 9.24 (Rev. CoP17) for a marked recent rate of decline of 50% or more over 10 years or three generations, whichever is the longer. Furthermore, the rate of decrease is likely to be slowing because stable or increasing *H. amphibius* populations, mainly in southern and eastern Africa, make up a large proportion of the overall population. *H. amphibius* would not therefore appear to meet the biological criteria for inclusion in Appendix I.

Hippo products, mainly teeth and tusks, are in legal and illegal trade, predominantly from Uganda and Tanzania; this trade is not considered a significant threat to the species as this trade has remained stable or declined over the last ten years. Previous concerns regarding implementation of the Appendix II listing have been addressed through the CITES Review of Significant Trade (RST) process, resulting in three range States establishing export quotas. Any future concerns regarding export levels of hippo products could also be addressed through the RST process.

Transfer the Southern White Rhinoceros *Ceratotherium simum simum* population of Namibia from Appendix I to Appendix II with an annotation

Proponents: Botswana, Namibia

Summary: The Southern White Rhinoceros *Ceratotherium simum simum* is one of two subspecies of White Rhinoceros (the other being the Northern White Rhinoceros *C. s. cottoni*, considered functionally extinct with only two surviving individuals). The global wild population was estimated at around 15,940 in 2021, having increased from only a few hundred at most in the 1920s. From a peak of around 21,300 in 2012, numbers declined to around 18,000 in 2017, owing to a combination of increased poaching since 2008 (particularly in Kruger National Park, South Africa), and drought in southern Africa (which has now eased in parts). From 2015–2018, the number of rhinos known to have been poached in Africa is estimated to have declined by a third from 1,349 to 930. This decline has continued, with a reduction by almost half in the number of African rhinos reported in poaching incidents from 2018 to 2021 when range States reported 501 poached rhinos. In 2021, 90% of poaching incidents for African rhinos were reported in South Africa, where around 81% of the population of the Southern White Rhinoceros is currently extant. *Ceratotherium simum simum* was categorised on the IUCN Red List as Near Threatened in 2020.

The Rhinocerotidae family was included in Appendix I in 1977. This proposal is to transfer Namibia's population of *C. s. simum* to Appendix II with the following annotation: "For the exclusive purpose of allowing international trade in live animals for *in-situ* conservation only, and hunting trophies. All other specimens shall be deemed to be specimens of species included in Appendix I and the trade in them shall be regulated accordingly." A similar proposal was considered by the Parties at CoP18, but not adopted.

The populations of South Africa and Eswatini are already included in Appendix II (since 1995 and 2005 respectively) with an annotation allowing trade in live animals "to appropriate and acceptable destinations". The definition of this term was amended in 2019 in Res. Conf.11.20 (Rev CoP18), to require that management authorities should be satisfied that any such trade would promote *in-situ* conservation. The annotation proposed is therefore aligned with the restrictions now in place for the other Appendix II populations of this species.

Having become extinct in Namibia before the end of the 19th century, *C. s. simum* was reintroduced to Namibia in 1975 when 16 animals were imported from South Africa. The population was estimated at 293 in 2005, and the most recent population estimate (2021) is between 1,123 to 1,237 individuals, around 900 of which are reported to be in private ownership across 85 subpopulations, with the remainder in national protected areas. This increase is due to both an intrinsic population increase and imports of live animals from South Africa: since 2008 South Africa recorded the export of 355 live *C. s. simum* to Namibia, 94% of these from 2012 onwards.

From 2008 to 2021 a total of 94 *C. s. simum* were legally hunted in Namibia, indicating an average annual offtake of 0.5–0.6% of the population. Virtually all resulting trophies appear to have been exported.

Reported poaching of *C. s. simum* in Namibia has until recently been at a very low level (three animals poached in total for the years 2008–2013). Poaching has increased but is still at a relatively low level (average of nine animals per year for 2015–2021) and is lower than the intrinsic population growth rate. Poaching of Southwestern Black Rhinoceros *Diceros bicornis bicornis* in Namibia has previously been reported as much higher: averaging approximately 50 animals per year for the period 2014–2018 (2.4% of the current population per year). Due to increasing security costs, which are reported not to be offset by available sources of income, a future reduction in private ownership is considered a significant threat.

Ceratotherium simum simum is classified as a “Specially Protected” species under Namibian legislation. Permits are needed for possession of live animals or their parts, and for utilisation, movement, imports and exports. Transport or hunting permits are only issued if the rhino in question has been microchipped and DNA profiled with samples sent to the RhODIS database. Only Namibia registered game dealers are allowed to capture and trade wild animals and only Namibia-registered professional hunters and operators are allowed to facilitate hunting.

The proponent states that transferring the population to Appendix II will enable Namibia to export live animals and hunting trophies to more countries and will increase revenue for conservation through sustainable use.

Analysis: The Namibian population of *Ceratotherium simum simum* does not have a restricted distribution. Its population is relatively small, but is increasing owing to a combination of intrinsic population growth and imports. Nearly 80% of the population is in around 85 privately-owned subpopulations. Although the poaching rate has increased, it is currently less than 1% of the population annually, which is lower than the intrinsic population growth rate. In addition, the poaching rate is lower than the 2.3% threshold for sustained growth based on continental population analyses. Overall, the Namibian population does not meet the biological criteria for retention in Appendix I.

The species is in demand for international trade. The proposed annotation, which restricts the kinds of specimens and type of export trade to be permitted allowing international trade in live animals for *in-situ* conservation only, and hunting trophies, can be considered a special measure under the terms of the Precautionary measures in Annex 4 of Res. Conf. 9.24 (Rev. CoP17). Namibia already undertakes such trade under the Appendix I listing and has a system in place to license and track specimens in trade.

An annotation similar to the one proposed has been used for export of this subspecies from South Africa and Eswatini for several years with no apparent problems.

Remove the existing annotation for the Southern White Rhinoceros *Ceratotherium simum simum* population of Eswatini listed in Appendix II

Proponent: Eswatini

Summary: The Southern White Rhinoceros *Ceratotherium simum simum* is one of two subspecies of White Rhinoceros (the other being the Northern White Rhinoceros *C. s. cottoni*, considered functionally extinct with only two surviving individuals). In 2021 the global wild population of *C. s. simum* was estimated at 15,940, having declined from a peak of around 21,300 in 2012 owing to a combination of increased poaching since 2008 (particularly in Kruger National Park, South Africa), and drought in southern Africa (which has now eased in parts). Reported poaching levels have declined since 2017 but remain a serious concern.

The family Rhinocerotidae was included in Appendix I in 1977 in response to major trade challenges driven by demand for rhino horn. In 1995 the South African population of *C. s. simum* was transferred to Appendix II, followed in 2005 by that of Eswatini. Both have the following annotation: "For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies. All other specimens shall be deemed to be specimens of species included in Appendix I and the trade in them shall be regulated accordingly".

Having become extinct in Eswatini in the mid-20th century, *C. s. simum* was reintroduced to the country from South Africa in 1965. The population reached a peak of around 120 in the late 1980s but was reduced to around 20–30 animals in the early 1990s by poaching. Improved protection, including through a change to national legislation, led to an increase to 90 animals in 2015, reduced to 66 in 2017 due to drought. The population has recovered and is currently (early 2022) estimated at 98, in two protected areas. Estimated total capacity is around 160 rhinos. No trophy hunting of *C. s. simum* takes place because all rhinos occur in reserves where sport and trophy hunting are not permitted. There is limited trade in live animals between Eswatini and South Africa. Current mortality from illegal killing is very low.

This proposal is to delete the existing annotation to the listing of Eswatini's population in Appendix II, with the intention of allowing limited and regulated trade in stocks of *C. s. simum* horn which have been legally collected in the past or recovered from poached Eswatini rhino (totalling 330 kg), as well as of horn to be harvested annually in a non-lethal way in the future, estimated to comprise up to 20 kg per year. A similar proposal was made by Eswatini at CoP18, but not adopted by the Parties.

The Supporting Statement proposes the establishment of a Rhino Horn Trade Protocol, based on Smart Trade principles, centred on a single broker or Central Selling Organisation, managed by professional traders that would be authorised to set prices. The CITES Management Authority of Eswatini would be the sole seller of horn. All horn offered for sale would be properly documented and recorded on a DNA database, a national register and with the CITES Secretariat to safeguard its integrity. All traded specimens would carry DNA certificates and the CITES Secretariat would be requested to monitor consignments closely. Traders would be licensed and required to make an undertaking not to trade horn from illegal sources.

According to the Supporting Statement, at a wholesale price of ca USD30,000 per kg, disposal of the existing stocks would be expected to raise ca USD9.9 million to be invested in an endowment fund. This, along with exports of horn from planned annual non-lethal harvest are predicted to yield an estimated potential annual income of USD1.2 million. The proponent states that its intention is to use proceeds from the horn sales to fund conservation, including security and improved park employee remuneration. The proponent notes that it would reserve the right to adjust prices and amounts adaptively once sales commence. If legal trade were ultimately proven to pose a renewed threat to the population, then further trade would be prohibited by Eswatini.

Analysis: Removal of the annotation would mean that all specimens of *C. s. simum* exported from Eswatini would be subject to Appendix II regulation. There are no specific guidelines for assessing proposals to change annotations of this nature, but it seems appropriate to ensure that satisfactory Precautionary measures, as detailed in Annex 4 of Res. Conf. 9.24 (Rev. CoP17) are addressed.

For a species in demand for international trade, which is clearly the case for this taxon, paragraph A 2 of Annex 4 of the Resolution provides the Parties with two options: to decide that existing trade management and enforcement measures are proportionate to anticipated risks; or to require an export quota or other special measure as an integral part of the amendment proposal subject to ongoing review by the Parties. Considering the historical and ongoing impacts of trade on the conservation of rhinoceros species, the risks associated with this proposal are sufficient to merit incorporation of special measures. Although Eswatini has provided some detail on precautions that they would implement, no such measures are integrated into the proposal.

With respect to the proposed trade in rhino horn, there is significant uncertainty about potential market impacts of the release of relatively small volumes of legal supply into the continuing global illegal trade in rhinoceros horn, estimated in the Supporting Statement at around 5000 kg annually.

Furthermore, few details are provided as to how the proposed legal trade would be carried out and controlled; for example, it is not specified which countries might permit legal imports and on what terms they might open currently closed markets, what market segments would be targeted, how and by whom the proposed licensing of traders would be implemented, or how trade would be monitored (including in end-user markets) to avoid laundering. While the CITES Secretariat is identified as playing a significant role, it is not clear how and with what resources it would undertake this work. It is also not clear if authorities in potential importing countries have been consulted.

The proponent states that if the trade were judged to be having a negative impact it would be stopped, but no mechanism is specified for how such an assessment would be undertaken, nor would there be any connection to the formal process provided in section B of Annex 4 of Res. Conf. 9.24 (Rev. CoP17) for such review when special measures apply.

Deletion of the current annotation would also remove the constraint that live animals be exported only to “appropriate and acceptable destinations” (Res. Conf. 11.20 (Rev. CoP17)). In the period that this annotation has applied, Eswatini has only exported live individuals to South Africa (whose own population of this subspecies would remain covered by this annotation) and it is not known if Eswatini would begin exporting to other countries.

Overall, despite the strong case made by the proponent for innovation in efforts to address ongoing global rhinoceros conservation challenges, it is not possible to conclude that this proposal includes satisfactory Precautionary measures, as detailed in Annex 4 of the Resolution.

Amend the existing annotation for the populations of African Elephant *Loxodonta africana* in Botswana, Namibia, South Africa, and Zimbabwe

Proponent: Zimbabwe

Summary: The African Elephant *Loxodonta africana* populations of Botswana, Namibia, and Zimbabwe were transferred from Appendix I to Appendix II in 1997, and the population of South Africa in 2000. These transfers were subject to detailed conditions that were further modified during subsequent meetings of the Conference of the Parties and are at present expressed in Annotation 2 to the CITES Appendices. The annotation allows for trade in various non-ivory specimens and products of *L. africana* under a range of conditions, somewhat different for each of the four range States in question. Regarding trade in ivory, the annotation currently allows for trade in individually marked and certified ekipas incorporated in finished jewellery for non-commercial purposes for Namibia and ivory carvings for non-commercial purposes for Zimbabwe. It also allowed for these four range States to dispose of agreed quantities of stockpiled raw ivory in a one-off sale, under a series of conditions. One of these conditions was that no further proposals to allow trade in elephant ivory from populations already in Appendix II should be submitted until at least nine years after the date of the single sale of ivory that occurred in 2008, during which time a decision-making mechanism for a process of trade in ivory would be developed. No agreed decision-making mechanism for allowing trade in ivory under the auspices of the Conference of the Parties has been developed.

The proponents argue that they have demonstrably been amongst the most successful in conserving elephants and seek to strengthen further their conservation programmes with finance derived from regulated trade in elephant products. Elephant conservation requires enormous resource inputs and the proponents claim that the costs of law enforcement alone are crippling conservation agencies, at the expense of many other important conservation activities. In Namibia and Zimbabwe rights over wildlife have been legally transferred to local communities. The participation of such communities through conservancy programmes have been pivotal in expanding wildlife numbers and habitat, elephants included.

The proposal is to amend the existing annotation for the Appendix II populations of *Loxodonta africana* in Botswana, Namibia, South Africa, and Zimbabwe, on the grounds that the proponents believe some elements of the current annotation "are no longer relevant or not appropriate."

The amendments proposed are as follows:

"For the exclusive purpose of allowing:

- a. trade in hunting trophies for non-commercial purposes
- b. trade in live animals to appropriate and acceptable destinations, as defined in Resolution Conf. 11.20 (Rev. CoP17), for Botswana and Zimbabwe and for *in situ* conservation programmes for Namibia and South Africa;
- c. trade in hides;
- d. trade in hair;
- e. trade in leather goods for commercial or non-commercial purposes for Botswana, Namibia and South Africa and Zimbabwe* ~~for non-commercial purposes for Zimbabwe;~~
- f. trade in individually marked and certified ekipas incorporated in finished jewellery for non-commercial purposes for Namibia and ivory carvings for non-commercial purposes for Zimbabwe;
- g. trade in registered raw ivory (for Botswana, Namibia, South Africa and Zimbabwe, whole tusks and pieces) subject to the following:
 - i. only registered government-owned stocks, originating in the State (excluding seized ivory and ivory of unknown origin);

- ii. only to trading partners that have been verified by the Secretariat, in consultation with the Standing Committee, to have sufficient national legislation and domestic trade controls to ensure that the imported ivory will not be re-exported and will be managed in accordance with all requirements of *Resolution Conf. 10.10 (Rev. CoP17)* concerning domestic manufacturing and trade;
- iii. not before the Secretariat has verified the prospective importing countries and the registered government-owned stocks;
- iv. ~~raw ivory pursuant to the conditional sale of registered government-owned ivory stocks agreed at CoP12, which are 20,000 kg (Botswana), 10,000 kg (Namibia) and 30,000 kg (South Africa);~~
- v. ~~in addition to the quantities agreed at CoP12, government-owned ivory from Botswana, Namibia, South Africa and Zimbabwe registered by 31 January 2007 and verified by the Secretariat may be traded and despatched, with the ivory in paragraph (g) iv) above, in a single sale per destination under strict supervision of the Secretariat;~~
- vi. the proceeds of the trade are used exclusively for elephant conservation and community conservation and development programmes within or adjacent to the elephant range; and
- vii. ~~the additional quantities specified in paragraph g) v) above shall be traded only after the Standing Committee has agreed that the above conditions have been met; and~~
- h. ~~no further proposals to allow trade in elephant ivory from populations already in Appendix II shall be submitted to the Conference of the Parties for the period from CoP14 and ending nine years from the date of the single sale of ivory that is to take place in accordance with provisions in paragraphs g) i), g) ii), g) iii), g) vi) and g) vii). In addition such further proposals shall be dealt with in accordance with Decisions 16.55 and 14.78 (Rev. CoP16).~~

On a proposal from the Secretariat, the Standing Committee can decide to cause this trade to cease partially or completely in the event of non-compliance by exporting or importing countries, or in the case of proven detrimental impacts of the trade on other elephant populations.

All other specimens shall be deemed to be specimens of species included in Appendix I and the trade in them shall be regulated accordingly.”

* Although the proposal does not specifically identify the changes allowing Zimbabwe to trade in commercial hides these changes are noted here underlined. References to resolutions that have been amended at subsequent CoPs have not been updated.

If accepted, the proposal’s main effect would be to allow exports of registered raw ivory. The Parties therefore need to be satisfied that the Precautionary Measures in Res. Conf. 9.24 (Rev. CoP17) Annex 4 are met with respect to this proposed trade. Although trading partners would need to be verified by the Secretariat, in consultation with the Standing Committee, no formal and specific mechanisms are proposed to oversee any trade, except that the Standing Committee (based on a proposal from the Secretariat) would be able to decide to cause this trade to cease partially or completely in the event of non-compliance by exporting or importing countries, or in the case of proven detrimental impacts of the trade on other elephant populations.

The proponent states that “Robust control measures are already in place within the legal framework of the proponents, at national level. The comprehensive commitments under various SADC regional initiatives and agreements ensure accountability and safeguards for compliance”. Legal instruments are noted. The Supporting Statement states that elephant populations are managed according to elephant management plans and strategies at national level, and spatially explicit management plans that are responsive to local dynamics. Botswana, Namibia, and Zimbabwe all have recently adopted management plans and South Africa’s National Norms and Standards for the Management of Elephants is currently being updated. However, for all the countries, details of the precautionary measures are lacking in the Supporting Statement. The only safeguards for any future exports of raw ivory would be the basic requirements of Article IV of the Convention for trade in Appendix II species (i.e., non-detriment findings (NDFs) and legal acquisition findings). The SS does not provide details as to how the proposed trade would be assessed for sustainability and controlled. However, according to the amended annotation, trade would only be in registered government-owned stocks, originating in

the State (excluding seized ivory and ivory of unknown origin).

The Proportion of Illegally Killed Elephants (PIKE), which provides a CITES adopted measure of poaching trends, estimates given in CoP19 Doc 66.5 for southern Africa (including the four countries in question as well as Angola, Malawi, Mozambique, and Zambia) show that between 2003 and 2021, the highest PIKE estimate for the subregion was in 2011. PIKE likely increased between 2003 and 2011 and subsequently decreased from 2011 to 2021. In the last five years, from 2017 and 2021, there is strong evidence of a downward trend. The unweighted PIKE estimate for 2021 in southern Africa is 0.27 (range: 0.20–0.34) and below the average continental PIKE estimate of 0.40 (range: 0.34–0.46) for the same year.

None of the countries concerned have been identified for consideration in the National Ivory Action Plan (NIAP) process (for which Parties most affected by illegal trade in ivory are selected), in the latest ETIS report to CoP19. In the period 2012–2020 exports of leather items have been reported by Zimbabwe in quantities greater than any of the other countries concerned. Some trade has already been reported as commercial trade. Trade in hides is permitted under the current resolution and therefore it is not clear why added value from processing hides within country would not be permitted. This would still be subject to NDFs. It is difficult to ascertain if exports of tusks have been within the quota since trade is recorded in kg rather than number of tusks (annual report guidelines recommend that tusks are reported by number).

Analysis: The *Loxodonta africana* populations of Botswana, Namibia, South Africa, and Zimbabwe are not small, nor do they have a restricted distribution nor are they undergoing a marked decline. Therefore, these populations, already in Appendix II, do not meet the biological criteria for inclusion in Appendix I. There are no explicit guidelines in Res. Conf. 9.24 (Rev. CoP17) as to how to deal with a proposal to amend an annotation for an Appendix II listed species. However, the proposed amendments can be interpreted as new special measures under the terms of Annex 4 of Res. Conf. 9.24 (Rev. CoP17). Adoption of the proposed changes would remove some provisions which are no longer valid, with timeframes having passed and decisions no longer in effect. Trade in leather goods for commercial purposes from Zimbabwe would be permitted, which appears already to be taking place. It is unlikely that the demand for leather goods would be problematic.

If accepted, the main effect of this amendment would be to allow exports of registered raw ivory, but without the level of oversight and control mechanisms previously required by the Conference of the Parties for such trade. The Supporting Statement does not detail safeguards, although it is claimed that there are robust control measures in place at the national level and the only trade permissible would be in registered government-owned stocks, originating in the State (excluding seized ivory and ivory of unknown origin); it is unclear from the Supporting Statement whether the intention is to export only current stockpiles, or future stocks from natural mortality or management related take as well. Parties would need to be satisfied that Botswana, Namibia, South Africa, and Zimbabwe are implementing the requirements of the Convention, particularly Article IV, and that the appropriate enforcement controls and compliance with the requirements of the Convention are in place.

Overall, there are significant risks to be considered in relation to the proposed amendments that are not convincingly addressed, particularly with respect to ivory trade. It is not possible to conclude that this proposal includes satisfactory Precautionary measures, as detailed in Annex 4 of Res. Conf. 9.24 (Rev. CoP17).

Transfer of the populations of African Elephant *Loxodonta africana* in Botswana, Namibia, South Africa, and Zimbabwe from Appendix II to Appendix I

Proponents: Burkina Faso, Equatorial Guinea, Mali, Senegal

Summary: This Proposal applies only to the African Elephant *Loxodonta africana* populations of four contiguous southern African countries: Botswana, Namibia, South Africa, and Zimbabwe. The most comprehensive and reliable information on distribution and population of this species is contained in the African Elephant Database (AED), maintained by the IUCN SSC African Elephant Specialist Group (AfESG) and presented in the African Elephant Status Reports (AESR), the latest of which was published in 2016 (the AfESG plans to produce an updated report in 2023). The 2016 AESR estimates a combined range in the four countries considered here as approximately 500,000 km² and a total population estimate of at least 255,000. This amounts to around 50–60% of the species as a whole (global population is 415,428 ± 20,112 with possibly an additional 117,128–135,385 in areas not systematically surveyed). A detailed breakdown of these figures is as follows:

Botswana:	2002 – 100,629 definite, 21,237 probable and 21,237 possible; 2006 – 133,829 definite, 20,829 probable and 20,829 possible; 2015 – 131,626 ± 12,508 (based on systematic survey data);
Namibia:	2002 – 7,769 definite, 1,872 probable and 1,872 possible; 2006 – 12,531 definite, 3,276 probable and 3,296 possible; 2015 – 22,754 ± 4,305 (based on systematic survey data). There may be an additional 90 in areas not systematically surveyed;
South Africa:	2002 – 14,071 definite and 855 possible; 2006 – 17,847 definite, 638 possible and 22 speculative; 2015 – 18,841 (based on systematic survey data). There may be an additional 8,425 to 8,435 in areas not systematically surveyed;
Zimbabwe:	2002 – 81,555 definite, 7,039 probable, 7,373 possible; 2006 – 84,416 definite, 7,033 probable, 7,367 possible and 291 speculative; 2015 – 82,630 ± 8,589 (based on systematic survey data). There may be an additional 1,635 to 1,805 in areas not systematically surveyed.

CoP19 Doc 66.5 (Report on Monitoring the Illegal Killing of Elephants (MIKE)) contains the most up-to-date synthesised information on illegal killing of elephants, based on information from 2003 until the end of 2021. It reports on the proportion of illegally killed elephants (PIKE) at 69 sites in 32 countries in Africa and 30 sites in 13 countries in Asia. A PIKE level of over 0.5 has been flagged in past reports as being of particular concern although reference to this “threshold” should be treated with some caution. The southern African subregion (Angola, Botswana, Eswatini, Malawi, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe) was assessed as having a PIKE level of 0.27 in the most recent assessment (2021), having decreased from 0.41 in 2016. This is the lowest PIKE for any of the African subregions. Over the last five years (2017–2021), the trend analysis shows a downward trend in PIKE, however, the 2021 PIKE estimate (0.4) is higher than the 2020 estimate (0.34).

The Supporting Statement (SS) of the Proposal deals extensively with the whole *Loxodonta africana* population, which is not the subject of the amendment proposal. It argues that there has been a reduction of more than 50% in the continental population in the past three generations. The proponents argue that a continental decline in African Elephants continues under the present split-listing and despite safeguards including a nine-year moratorium on ivory trade proposals, a recommendation of domestic ivory market closures, demand reduction strategies, and, country-

specific National Ivory Action Plans (NIAPs). In order to rectify this, the proponents therefore consider a transfer of Appendix II elephant populations to Appendix I as the next logical, essential and urgent step to reverse the continental decline.

Analysis: The *Loxodonta africana* populations of Botswana, Namibia, South Africa, and Zimbabwe are not small, nor do they have a restricted range and they are not undergoing a marked decline. Therefore, these populations do not meet the biological criteria for inclusion in Appendix I.

Regarding the potential impact of this proposed listing amendment on elephant populations elsewhere, there is no provision to address this question in any guidelines or criteria under the Convention. There is a wide and divergent range of views on the subject, as can be seen in the Supporting Statement of the current Proposal and of CoP19 Prop. 4 submitted by Zimbabwe.

Transfer of Mexican Prairie Dog *Cynomys mexicanus* from Appendix I to Appendix II

Proponent: Mexico

Summary: The Mexican Prairie Dog *Cynomys mexicanus* is one of five species of prairie dog. It is a rodent endemic to north-western Mexico classified as Endangered on both the IUCN Red List (2018) and on the List of Species at Risk in Mexico (2019) due to a small area of occupancy, high habitat fragmentation, low quality of remaining habitat, and restricted number of remaining subpopulations. *Cynomys mexicanus* was listed in Appendix I in 1975. It is one of two species of prairie dog occurring in Mexico (the other being *C. ludovicianus*) and is the only prairie dog included in the Appendices.

Estimates of population sizes are not available for all colonies. According to the IUCN Red List assessment (2018), the population trend is decreasing. However, the number of colonies has reportedly remained stable since 1999 at 50–60. Ecological models indicate a potential range of over 4,300 km², but satellite imagery suggests that the real extent of occurrence is limited to 215 km², taking into account habitat quality and known occurrence.

The primary threats to *C. mexicanus* include habitat loss and fragmentation due to changes in land-use for agricultural purposes and through overgrazing. Additional threats are from hunting and poisoning as the species is seen as an agricultural pest.

No national use is recorded for the species and only two harvests have been registered (150 specimens in 2008 and 130 in 2010) for reintroduction purposes from one of the four Wildlife Conservation Management Units (UMAs - i.e., the only legal entity that allows wildlife management in Mexico). According to the Mexican Law Enforcement Authority (PROFEPA), a total of nine specimens of *C. mexicanus* were seized from 2013 to 2019 within the country. The last instance of international trade occurred in 2012, when wild-caught specimens were exported for scientific purposes.

Analysis: This proposal results from the Periodic Review of the Appendices (Res. Conf. 14.8 (Rev. CoP17)). Remaining populations of *Cynomys mexicanus* are characterised by a small area of occupancy, high habitat fragmentation and low habitat quality. The number of colonies has remained relatively stable over the past 20 years. There is little information on population trends though there are no indications of a marked recent decline. The species may still meet the biological criteria for inclusion in Appendix I. However, there is no evidence of any trade demand and it is highly unlikely that a transfer to Appendix II would stimulate trade in the species. The Precautionary measures in Annex 4 of Res. Conf. 9.24 (Rev. CoP17) appear to be met. This proposal was supported by the Animals Committee.

Transfer of Aleutian Cackling Goose *Branta canadensis leucopareia* from Appendix I to Appendix II

Proponent: United States of America

Summary: The Aleutian Cackling Goose *Branta canadensis leucopareia* is a migratory bird found in Japan, Mexico, Russian Federation and USA. Most individuals breed on the Aleutian and Semidi Islands in Alaska, USA, and overwinter in California or Oregon. After its near-extinction caused by predation by non-native foxes introduced for the fur trade between the mid-18th and 20th centuries, the subspecies has bounced back due to intensive conservation efforts (including hunting closures, re-introductions and habitat conservation measures) and currently numbers over 160,000 individuals. The subspecies was included in Appendix I in 1975. It is now considered to be a subspecies of *Branta hutchinsii* the Cackling Goose rather than *Branta canadensis* the Canada Goose. Two other geese in the genus *Branta* are also included in the CITES appendices: the Nene or Hawaiian Goose *B. sandvicensis* (Appendix I) and the Red-breasted Goose *B. ruficollis* (Appendix II).

Having been originally included in the U.S. Endangered Species Act in 1973, in response to the recovery of the various populations (especially the western Aleutian population), the subspecies was down-listed to threatened in 1990 and in 2001 removed from the list altogether.

In the USA, the subspecies is now managed as a game bird. Hunting remains restricted in key breeding areas within the Aleutian Islands and is prohibited in northern coastal Oregon to protect the much smaller Semidi Islands population. Incidental take of the species may occur but does not appear to constitute a significant threat.

According to the CITES Trade Database, most international trade has been to assist in conservation measures, including the international transport of primarily captive-bred birds for either re-introduction efforts or captive breeding. Since the inclusion of the subspecies in CITES Appendix I in 1975, only three records indicate international trade of wild specimens for commercial or trophy purposes. Furthermore, no illegal trade has been reported by any state in the USA.

Analysis: This proposal is based on the outcome of the Periodic Review of the Appendices in accordance with Res. Conf. 14.8 (Rev. CoP17). *Branta canadensis leucopareia* (*Branta hutchinsii leucopareia*) no longer meets the biological or trade criteria for inclusion in Appendix I, as the wild population is neither small nor in decline, its distribution range is not currently restricted, nor is the subspecies in demand for international trade. Transfer of the taxon to Appendix II is in accordance with the Precautionary measures in Annex 4 of Res. Conf. 9.24 (Rev. CoP17) and will be accompanied by the continued implementation of distinct management measures including monitoring surveys and harvest strategies. This proposal was supported by the Animals Committee.

Inclusion of the White-rumped Shama *Kittacincla malabarica* in Appendix II

Proponents: Malaysia, Singapore

Summary: The White-rumped Shama (known as *Copsychus malabaricus* under the current CITES taxonomic reference for birds) is a widespread Asian songbird native to 15 countries: Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao People's Democratic Republic (PDR), Malaysia, Myanmar, Nepal, Singapore, Sri Lanka, Thailand, and Viet Nam. The species comprises multiple genetically distinct subspecies and subpopulations, with references recognising 14–17 subspecies and new taxonomic research continuing to uncover more genetically distinct subspecies.

The species has an extremely large range, with an estimated extent of occurrence of some 14 million km², and is described as common in at least parts of its range. It was evaluated by BirdLife International as Least Concern on the IUCN Red List in 2020, although its population overall is suspected to be in decline owing to ongoing habitat destruction and collection for the bird trade. Where not impacted by trapping, the population can occur at very high densities, and it has been shown to be adaptable to some level of habitat disturbance. There are no population estimates for the species across its range, but it is thought to number in the hundreds of thousands.

The species is believed to be threatened in parts of its range where it is under pressure from harvest and it is recognised among the highest priorities for action by the IUCN SSC Asian Songbird Trade Specialist Group.

Owing to its remarkable singing ability, the White-rumped Shama is one of the most prized and valuable species in the South-East Asian cagebird trade and among the most important species used in singing competitions, particularly in Indonesia. Outside South-East Asia, only small numbers of White-rumped Shammas have been observed for sale in Hong Kong SAR and India. Most of the trade historically has been domestic. However, as populations around the main centres of demand decrease and become more difficult to source (most importantly in Indonesia, where the species is locally depleted in places where it is most popular), trappers and traders appear to have turned to sources further afield.

In 2019, over three million White-rumped Shammas were estimated to be kept in captivity across the island of Java in Indonesia alone. It is not known what proportion of these is wild-caught, nor how many have been imported although there is recent evidence of the illicit movement of birds across international borders. In Viet Nam, a songbird consumer study found that the species is one of the most desired birds sought by bird keepers, and that most owned or preferred to keep wild-caught birds, which are thought to be mostly sourced from within the country. Alternatively, some traders have stated that captive-bred White-rumped Shammas are more desirable because of their longer lifespans and greater compatibility with life in a cage.

Captive breeding of the species appears to be active in some South-East Asian countries. To date, there are 52 captive breeders in Peninsular Malaysia who hold a commercial captive breeding permit for this species, and both small- and large-scale commercial captive breeding of White-rumped Shammas is ongoing in Indonesia, but the lack of published records makes it impossible to determine its extent.

Combined data from snapshot surveys across Indonesia, Malaysia, Singapore, Thailand, and Viet Nam, carried out between 2007 and 2018, found a total of 8,271 White-rumped Shammas openly for sale in physical local bird markets on the days surveyed. Another 917 were found for sale online in six snapshot internet trade studies in Indonesia, Malaysia, and Thailand between 2016 and 2018.

From 1997–2003, the White-rumped Shama was listed in Annex D of the European Union Wildlife Trade Regulations (EU WTR). It was delisted in 2003, as specimens were not imported into the EU in numbers substantial enough to warrant monitoring. During that period, almost 1,000 live individuals were reported in trade annually from South-East and East Asian countries to the EU. Around 65% of the transactions were exports by China and Indonesia, and these accounted for 50% and almost 30% of the traded individuals respectively. In 2005, the EU implemented a ban on wild bird imports to prevent the spread of avian influenza and other diseases, which is still in place.

Malaysia's regulations allow capture and trade of the species under licence, as seems to be the case in most South-East Asian countries except for Singapore, Cambodia, and Thailand, where trade is prohibited unless individuals are captive-bred. Despite this, in recent years a growing number of smuggled bird shipments containing White-rumped Shammas have been intercepted mainly from Malaysia into Indonesia, where they reach high prices in the cagebird market and are expensive compared to other species. Between 2008 and 2018, 432 seizures of White-rumped Shammas were recorded in data from Indonesia, Malaysia, Singapore, Thailand, and Viet Nam, including more than 15,000 birds with two-thirds of these in the period 2014–2018. Some 12% of recorded seizure incidents involved international trade and accounted for more than two-thirds (over 10,000) of all the White-rumped Shammas seized in this period. Likewise, TRAFFIC's data include 615 seizure records of more than 30,000 White-rumped Shammas between 2009–2022, with around a third being seized after 2018. These seizures were concentrated in the South-East Asian region with at least 13% of the total incidents having involved international trafficking, mainly from Malaysia to Indonesia.

The proposal to list the species in Appendix II is based partly on the volume of seized individuals, including what the proponents perceive as being rising incidences of international smuggling.

Analysis: The White-rumped Shama was assessed as Least Concern on the IUCN Red List in 2020. The species is not considered threatened and is described as common in significant parts of its large range. However, there is evidence that populations are locally depleted in places in South-East Asia, where it is popular as a caged bird. Domestic trade appears to be the most significant driver of harvest, but the species is also traded internationally as indicated by seizures particularly from Malaysia to Indonesia, which appear to be increasing due to a locally depleted population. At this time, the impact of collection for international trade on the species in its range other than in Malaysia and, in particular, Indonesia is unclear. Some trade is said to be in captive-bred individuals, although it is not known what proportion of the overall trade this is. Available information on status and trends of the wild population and on impacts of collection for trade do not support a conclusion that the White-rumped Shama meets the criteria for inclusion in Appendix II set out in Res. Conf. 9.24 (Rev. CoP17).

Transfer of Straw-headed Bulbul *Pycnonotus zeylanicus* from Appendix II to Appendix I

Proponents: Malaysia, Singapore, United States of America

Summary: The Straw-headed Bulbul *Pycnonotus zeylanicus* is a large, non-migratory bird found in Singapore, Malaysia, Indonesia and Brunei Darussalam inhabiting lowland successional habitats bordering rivers, streams and marshes, usually adjacent to broadleaf evergreen forest and secondary growth. Due to exploitation for the songbird trade and habitat loss, *P. zeylanicus* was assessed by BirdLife International as Critically Endangered in 2018 and is currently listed on Tier 1 of the IUCN SSC Asian Songbird Trade Specialist Group's priority taxa list (which includes those species considered to be the most threatened from trade) as a conservation priority. The species was included in CITES Appendix II in 1997.

At present, the wild population is small, ranging from 600 to 1,700 mature individuals. According to the IUCN Red List assessment, a marked decline is ongoing and has probably exceeded 80% over the past three generations (or 15 years). The largest and only stable population is found in Singapore (200–500 mature individuals). Little information exists on population structure.

The species has been subject to widespread extirpations throughout its entire range within the last 30 years (including from Java and Borneo (Indonesia), Myanmar and Thailand, and in various sites in Peninsular Malaysia). Logging and development, as well as change in land-use for agricultural plantations, are causing habitat loss throughout its range. Most of the secondary forest and woodland where *P. zeylanicus* occurs does not fall within protected areas, and in many cases has been cleared.

The primary threat to the species is trapping for the caged songbird trade, with specimens being moved mainly within and between South-East Asian countries. Although some captive breeding is known, it has been reported that wild-caught specimens are considered superior songsters and can fetch higher prices, so that captive-breeding does not appear to be alleviating demand for wild-caught birds. Following its original listing in 1997 the CITES Trade Database has registered 704 live birds in trade of which only three were declared as captive-bred rather than wild-caught. Only 46 live specimens have been reported in trade since 2000. A decline in the wild population is suspected to be the main reason for a decrease in availability in the market. Its market value has increased markedly over the past three decades (from USD20 in 1987 to over USD900 in 2018).

Instances of illegal trade have been registered over the past 20 years including incidents in Malaysia, Thailand, and Indonesia.

Analysis: *Pycnonotus zeylanicus* has been assessed as Critically Endangered on the IUCN Red List. Remaining populations are small and declining due to exploitation for the caged songbird trade as well as habitat loss and degradation. The species is now limited to a fraction of its historic range. Therefore, *P. zeylanicus* appears to meet the biological criteria for inclusion in Appendix I of Res. Conf. 9.24 (Rev. CoP17). Although the relative extent of domestic and international trade is not clear, there is sufficient evidence to conclude that the species is affected by trade.

Transfer of Short-tailed Albatross *Phoebastria albatrus* from Appendix I to Appendix II

Proponent: United States of America

Summary: The Short-tailed Albatross *Phoebastria albatrus* is a large seabird that historically bred on some 15 islands in Japan, Taiwan POC, and Hawaii, USA, with non-breeding individuals ranging through the North Pacific Rim and off the western coast of North America. Prolonged exploitation from 1887–1933, when around 5 million birds are believed to have been harvested for their feathers, resulted in near-extinction. By the 1950s the species only bred on Torishima Island, Japan, and on the Senkaku Islands, a group of islands whose sovereignty is disputed. The introduction of protective measures led to a slow recovery. Currently the population is estimated at over 7,000 individuals, with 80% breeding on Torishima and the remainder on the Senkaku Islands. In 2018–2019, just over 2,000 breeding birds were counted at Torishima Island with an additional 380 birds projected as breeding on the Senkaku Islands. The population is increasing at a yearly rate of approximately 9%. The species was included in Appendix I in 1975. It was classified by BirdLife as Vulnerable on the IUCN Red List in 2018. It is the only species of albatross included in the Appendices.

Major identified threats currently comprise natural events including habitat erosion and volcanism (Torishima is an active volcano), commercial fishing by-catch, climate change, and the possible impacts of introduced mammals. The species is protected by national legislation in Canada, China, Japan, Mexico, the Russian Federation, and the USA and is included in Annex 1 of the Agreement on the Conservation of Albatrosses and Petrels and in Appendix I of the Convention on the Conservation of Migratory Species of Wild Animals.

There are no indications of any current commercial demand for the species. The CITES Trade Database registers a total of 157 imports and six exports from 1975–2019, of which only 1% were for commercial purposes (these involved pre-Convention specimens).

This proposal results from the *Periodic Review of the Appendices* (Resolution Conf. 14.8 (Rev. CoP17)), undertaken by the CITES Animals Committee.

Analysis: Following near-extinction in the 1950s as a result of overexploitation the Short-tailed Albatross has undergone significant recovery. The population is still relatively small (although is increasing year on year) and the species remains classified as Vulnerable by BirdLife/IUCN (2018). There is currently no evidence that harvest for international trade is or may be a threat to its survival. Therefore, the species does not appear to meet either the biological or trade criteria for inclusion in Appendix I. Transfer of the species to Appendix II is in line with the Precautionary measures in Annex 4 of Res. Conf 9.24 (Rev. CoP17). Furthermore, the species is widely protected. This proposal is supported by the Animals Committee.

Transfer the population of Broad-snouted Caiman *Caiman latirostris* of Brazil from Appendix I to Appendix II

Proponent: Brazil

Summary: The Broad-snouted Caiman *Caiman latirostris* is native to Brazil, Argentina, Bolivia, Paraguay, and Uruguay where it occurs in the Paraná, Paraguay, São Francisco and Uruguay River basins. The species was included in Appendix I in 1975. In 1997 the population of Argentina was transferred to Appendix II in accordance with the Resolution on Ranching (now Res. Conf. 11.16 (Rev. CoP15)). The species was assessed by IUCN in 2019 and classified as Least Concern, on account of its wide range, ability to colonise anthropogenic environments, and apparently stable global population.

In Brazil, the species is found in the Cerrado, Caatinga, Atlantic Forest, and Pampas biomes, extending from the coastal areas of Rio Grande do Norte to the São Francisco and Paraná-Paraguay watersheds and reaching the Lagoa dos Patos and Lagoa Mirim, in the state of Rio Grande do Sul. This range extends over 2.7 million km² and comprises over 70% of the total distribution of the species. The area of occupancy is believed to exceed 20,000 km².

The diversity and extent of habitats occupied by *C. latirostris* make it difficult to estimate population abundance accurately, but Brazil's population was estimated in 2016 to number over 400,000 based on the population density estimated for water bodies associated with a silvicultural landscape. The species remains widely distributed and abundant throughout much of its range. There are a number of reports of *C. latirostris* being found in urban and peri-urban areas, possibly indicating dispersal to new areas and suggesting an increase in the size of natural populations.

Although illegal hunting still occurs in some places, it is no longer identified as the major threat to this species, and illegal trade of skins has not been recently documented in Brazil. There is very limited export of captive-bred specimens from Brazil. According to the CITES Trade Database, from 2010 to 2020, Brazil reported exports of the species involving 101 skins from captive-bred individuals. Currently, there are five operating farms for *C. latirostris* in Brazil, only one of which is registered with CITES. It is not clear from the proposal what the long-term intention is in relation to trade in wild specimens of *C. latirostris*.

Precautionary measures included in the proposal are a "zero quota of ranched or harvested individuals", and the only form of management currently in place and proposed is farming. The proposal does not provide details on how long this quota is intended to be in place, nor if it would be lifted depending on results obtained through a nationwide monitoring programme. The quota is not an integral part of the proposal, so Brazil could decide to modify it or lift it at any time.

Brazil's objective for transfer of its population of the species to Appendix II is not clear, since trade from farms is already possible under the Appendix I listing. Brazil indicates it expects the social development of local communities through the management and conservation of Broad-snouted Caiman populations. However, it is not explained how a transference of the species to Appendix II would facilitate this.

Analysis: The *Caiman latirostris* population in Brazil no longer meets the biological criteria for being listed in Appendix I. It has a large population in Brazil in the hundreds of thousands, it is widespread in the country and the population is not declining. However, it is unclear what Precautionary measures are intended in line with Annex 4 of Res. Conf. 9.24 (Rev. CoP17). Brazil indicates in the supporting statement that it "will practise a zero quota for ranched or harvested individuals", but there is no formal export quota proposed for consideration with the proposed transfer to Appendix II. Brazil could include an export quota or other special measures to be approved at CoP19. Setting a zero export quota for wild harvested individuals for commercial purposes, as an integral part of the proposal to

transfer *C. latirostris* from Appendix I to Appendix II, would ensure that the relevant Precautionary measures are met.

Transfer of the Philippine population of Saltwater Crocodile *Crocodylus porosus* in Palawan Islands from Appendix I to Appendix II with a zero export quota for wild specimens

Proponent: Philippines

Summary: *Crocodylus porosus* is one of the most widely distributed crocodylians, found in East and South-East Asia and Australasia where its current range encompasses 17 range States. It is essentially extinct in the wild in Cambodia, Thailand, and Viet Nam. Originally included in Appendix II in 1975, all but one national population of the species was transferred to Appendix I in 1979. Subsequently various populations (in Australia, Indonesia, Malaysia and Papua New Guinea) have been transferred to Appendix II. The species was assessed as Least Concern by IUCN in 2019. The Philippines is proposing the transfer of its population in the Palawan Islands to Appendix II including a zero export quota for wild specimens.

Commercial hunting of Saltwater Crocodiles in the Philippines, mainly between 1950 and 1970, compounded by habitat loss and negative public attitudes towards crocodylians resulted in depletion of wild populations. Between 1987 and 1992, a founder stock of 301 *C. porosus* from various locations, including 140 individuals from Palawan, was relocated from the wild to the Crocodile Farming Institute (CFI) for captive breeding and to establish a local crocodile farming industry. By 1992, the total wild population on Palawan was estimated at fewer than 200.

No large wild populations of *C. porosus* remain in the Philippines. The highest numbers of *C. porosus* are reported to occur on the island of Mindanao, southern Palawan, Sulu Archipelago in southwestern Philippines, northeastern Mindanao and some part of northeastern Luzon. Population surveys were conducted in Palawan from 2014 to 2019 in 19 rivers, obtaining a relative density of 2.94 ± 1.23 crocodiles per km) with considerable variation between different river systems. Based on these relatively limited density estimates the current Palawan *C. porosus* population is estimated to be around 5,000 individuals although this is expected to be refined as more of the island is surveyed. The current figure represents a mean annual rate of increase of around 13% between 1992 and 2019 indicating significant population recovery.

Currently, all international trade is restricted to farms authorised and registered by the Department of Environment and Natural Resources (DENR; the Philippines CITES Management Authority) and the CITES Secretariat. There are three CITES-registered facilities for *C. porosus* in the country, with only two exporting at this time around 4,500 skins and leather products per year. The third, not currently exporting, is located in Palawan and was the source of the breeding stocks of the two exporting facilities. Aside from these, there are five other establishments outside Palawan holding *C. porosus* in the Philippines. Current *C. porosus* captive farm stocks number around 35,000 individuals.

The wild *C. porosus* population in the Philippines is protected by law, and no domestic or international trade in wild animals occurs. Very little illegal trade in Saltwater Crocodile products originating from the Philippines has been observed in the last decade.

It appears that the proponent intends to export ranched specimens in the future. The initial action that Philippines states it will undertake as part of the transition from a transfer of the Palawan population of *C. porosus* to Appendix II to a formal ranching programme, will be to expand the successful nest protection incentive scheme implemented in 2017, specifically to:

- a) encourage more local communities to identify wild *C. porosus* nesting sites on Palawan;
- b) protect more nests until hatching, quantify nest success, and release hatchlings in exchange for financial support;
- c) test whether strategic habitat interventions can increase *C. porosus* nest abundance; and,
- d) identify local communities and sites with the best potential for future ranching.

The Philippines contemplates that this transition will require continued population monitoring, increased commitment and investment from stakeholders, and the active participation of local communities along the process.

Analysis: Current information available on the Palawan *Crocodylus porosus* population indicates that it no longer meets the criteria for inclusion in Appendix I. Although the population could still be considered small, it does not meet any of the sub-criteria relevant to criteria (A) of Annex 1 of Res. Conf. 9.24 (Rev. CoP17), it does not have a restricted area of distribution (B), nor is it declining (C).

The Philippines proposes a zero export quota for wild specimens and has stricter domestic measures than those of CITES in prohibiting trade in wild terrestrial fauna. The proposal therefore complies with Annex 4 of Res. Conf. 9.24 on precautionary safeguards to transfer species from Appendix I to Appendix II. Any future exports of wild or ranched specimens would require the zero quota to be amended at a future Conference of the Parties. This annotation would make the listing in Appendix II stricter for wild specimens than an Appendix I listing, as it would not allow export for scientific, education and other purposes permitted under an Appendix I listing. Referring to a “zero export quota for wild specimens for commercial purposes” might reflect better the intention of the proposal.

Other Considerations: Adoption of this proposal would result in a split listing for the species within the Philippines with populations outside Palawan remaining in Appendix I. There can be practical regulatory complications associated with split-listings of a species within a country, which may create implementation challenges for importing Parties. The Philippines is proposing a zero export quota for wild specimens, but one of the three captive breeding farms registered in CITES is located in Palawan. It is also the source of specimens in the other two CITES-registered facilities in the country. Parties may therefore wish to consider the possible regulatory complications that may arise from a split-listing of *Crocodylus porosus* populations in the Philippines.

Transfer of the Thai population of Siamese Crocodile *Crocodylus siamensis* from Appendix I to Appendix II with a zero quota for wild specimens

Proponent: Thailand

Summary: *Crocodylus siamensis* historically occurred over much of mainland South-East Asia as well as parts of Indonesia. Extant populations occur in Cambodia, Indonesia, Lao People's Democratic Republic (PDR), Thailand, and Viet Nam. An IUCN Red List assessment, conducted in 2012, listed the species as Critically Endangered on the basis of a severe reduction in global populations, principally due to hunting and collection of live animals to stock farms, with all remnant subpopulations being small and fragmented and the population believed to be in continuing decline.

In Thailand, the Siamese Crocodile is thought to have been formerly widely distributed in low-altitude freshwater wetlands mainly in central and eastern areas. Extant populations are now found in a number of scattered localities in central and western Thailand. Reports in 2021 indicate that wild populations occur in six protected areas. An additional population has recently been found in a natural swamp adjacent to Cambodia. Wild populations in the country have been estimated recently as totalling more than 100 individuals.

There is currently no harvesting or trade of wild *C. siamensis* in Thailand. However, the species is traded in national and international markets derived from a large captive breeding industry in the country. In 2020, there were 731,457 individuals registered from 928 owners in Thailand. According to the CITES website, 28 operations that breed the species for commercial purposes have been registered according to Res. Conf. 12.10 (Rev. CoP15) on *Registration of operations that breed Appendix-I animal species in captivity for commercial purposes*. Thailand indicates that current production is sufficient to cover trade demand, which mainly consists of skins, meat and leather products, making it unnecessary to take specimens from the wild.

Seizure records are scarce, which suggests there is no significant illegal trade of *C. siamensis* specimens originating in Thailand, and the majority of these transactions were for personal purposes.

The Proponent argues that the crocodile industry, which once was a major driver of the decline of wild populations, currently has an important role to play in the conservation of the species as it could support the reestablishment of viable wild populations. However, there has been public and political opposition to reintroducing *C. siamensis* in Thailand for decades, which appears to be the major ongoing constraint to establishing wild populations outside protected areas, and thus, an obstacle for *in situ* conservation and species recovery.

Analysis: The Thai population of *Crocodylus siamensis* is still small and fragmented, with each subpopulation being very small. It appears to continue to meet the biological criteria for inclusion in Appendix I set out in Res. Conf. 9.24 (Rev. CoP17). Large quantities of captive-sourced specimens are exported from Thailand, although it is unlikely that wild-sourced specimens would enter trade due to extreme rarity owing to earlier overharvest.

Should the Parties decide that irrespective of the status of the wild population in Thailand, continued listing in Appendix I is not proportionate to the anticipated risks to the species (see Precautionary measures in Annex 4 of Resolution Conf. 9.24 (Rev. CoP17)), it is worth noting that Thailand is proposing as an integral part of its proposal: "a zero quota for wild specimens." This annotation would make the listing in Appendix II stricter for wild specimens than an Appendix I listing as it would not allow export for scientific, education and other purposes permitted under an Appendix I listing. Referring to a "zero export quota for wild specimens for commercial purposes" may better reflect the intention of the proposal. Any change to a zero quota would require the approval of a future meeting of the Conference of the Parties.

Inclusion of Chinese Water Dragon *Physignathus cocincinus* in Appendix II

Proponents: European Union, Viet Nam

Summary: The Chinese Water Dragon *Physignathus cocincinus* is a large, brightly coloured semi-aquatic arboreal lizard widespread in lowland riverside forest across continental South-East and East Asia, occurring in Cambodia, China, Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam. It is the only member of its genus. There is little information available on national distribution of the species. However, there are indications that it is patchy in some countries, being known, for example, from only a few locations in eastern Thailand. It has been introduced in various places outside its range, including Hong Kong SAR, Malaysia, Taiwan POC and the USA. This species is harvested throughout most of its range for human food as well as collection for the international and domestic pet trade. The species is reported to be easy to collect due to its sedentary nature and harvest is believed to represent a significant threat to wild populations.

Listed as Vulnerable in the IUCN Red List in 2017, and, despite being locally abundant, assessed as likely to be experiencing an ongoing population decline across its range. Detailed population and abundance estimates are lacking. Studies in northern Viet Nam, 2016–2017, found population densities to range from 1.98–2.64 individuals per 100 m along inhabited streams, and in central Viet Nam, 2014–2016, 0.85–0.95 individuals per 100 m in an undisturbed site and 0.07–0.43 individuals per 100 m (mean density 0.25 individuals per 100 m) in a disturbed sites experiencing pressures such as harvesting. In Cambodia, no numerical estimates exist, but in one site the population was inferred to have declined by approximately 50% over 18 years (three generations with an estimated generation length of six years).

Across range States, *P. cocincinus* is nationally traded in considerable numbers for human food consumption for and for the national and international pet trades.

Large numbers of mainly wild-sourced individuals are reported in the international pet trade (just over 59,000 wild-sourced individuals a year). Between 2011 and 2020 the EU reported just over 80,000 live individuals as directly imported, the majority being wild-sourced and imported from Viet Nam (~67,000). In the same period the USA reported imports of around 520,000 wild-sourced individuals (with ~35,000 captive-bred) from Viet Nam. It is suspected that some may have originated from neighbouring range States, such as Lao PDR and Thailand. Small numbers of live wild-sourced individuals originating in Thailand were also re-exported by Viet Nam to USA, possibly because of reduced availability within Viet Nam.

Physignathus cocincinus is protected in Cambodia from any form of collection, possession or persecution. Since February 2021 in China, any hunting or collection requires approval from provincial or local government. The species is legally protected in Thailand. In Viet Nam, the collection of *P. cocincinus* wild specimens in protected areas is prohibited without permits, although effective implementation is reportedly difficult. No information was available on its legal status in Lao PDR or Myanmar.

Analysis: *Physignathus cocincinus* has a wide range in mainland South-East Asia (principally in Viet Nam, Lao PDR and Cambodia), where it is extensively harvested for human food consumption and the pet trade. Population information is largely lacking for all range States although there are indications of at least locally reduced population densities in Viet Nam, ascribed to harvesting. The species was categorised in the IUCN Red List as Vulnerable in 2017 due to a suspected population decrease across its entire range of more than 30% over the past three generations. No global trade data are available, however, data from imports to the USA and EU show an annual average of just over 59,000

wild-sourced individuals, primarily imported from Viet Nam. There are also indications that Viet Nam is re-exporting individuals originating in neighbouring range States, possibly due to decreased availability within Viet Nam. Due to the large numbers reported in trade, the vast majority of which is in wild-sourced individuals, and probable impacts of collection on wild populations, and probable impacts of collection on wild populations, *P. cocincinus* appears to meet the criteria for inclusion in Appendix II under part B of Annex 2a of Res. Conf. 9.24 (Rev. CoP17) in that regulation of trade is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences.

Inclusion of Jeypore Hill Gecko *Cyrtodactylus jeyporensis* in Appendix II

Proponent: India

Summary: *Cyrtodactylus jeyporensis* is a medium-sized, bent-toed gecko that inhabits high elevation semi-evergreen forests and hills with coffee plantations in southern Orissa and northern Andhra Pradesh, India. The species is currently known to occur in two separate areas (covering less than 600 km², possibly less than 100 km²), and its habitat is being rapidly degraded due to forest fire, grazing, fuel wood collection, monoculture plantations and mining activities. No quantitative estimation of the population size is available, although surveys indicate that the remnant populations are declining at a fast rate.

The species was classified as Critically Endangered on the IUCN Red List in 2013 and later changed to Endangered in 2019 based on limited extent of occurrence, fragmented populations and continued decrease of both extent and quality of the species' habitat and population size. The decision to revise the assessment from Critically Endangered to Endangered in 2019 did not reflect an improvement of the species' status, but rather resulted from the discovery in 2012 of subpopulations in new localities in Andhra Pradesh and therefore from an increase of the species' estimated area of occurrence.

In India, the National Biodiversity Authority requires permission to collect the species for research, commercial utilisation, bio-survey or bio-utilisation by foreign citizens, foreign corporate bodies, foreign associations, or non-resident Indians, or the transfer of the species to such persons, under Sections 3, 19 and 20 of the Biological Diversity Act (2002). No international legal instruments are currently in place to protect the species.

At present, habitat loss and degradation represent the main threats to the species. However, *C. jeyporensis* is now perceived to be in demand for the international pet trade on the basis of a rise in numbers of online advertisements for sale (mostly aimed at the European market) and its apparently increasing popularity among pet traders and breeders outside of India. Nevertheless, no legal or illegal species-specific trade records exist for *C. jeyporensis*.

The species *Cyrtodactylus jeyporensis* is proposed for inclusion in Appendix II under the criteria in Annex 2a paragraph A of Res. Conf. 9.24 (Rev. CoP17).

Analysis: Remaining populations of *C. jeyporensis* are characterised by a restricted area of occurrence in two separated areas, a continued decrease in population size and ongoing threats of habitat degradation, so that biological criteria in Annex 1 of Res. Conf. 9.24 (Rev. CoP17) already appear to be met. There is evidence that the collection of the Jeypore Hill Gecko for commercial purposes, specifically for the pet trade, has occurred based on online advertisements, its availability among international reptile breeders and pet traders, and opinions from various experts from India, who have also corroborated its occurrence in the illegal market outside the country. Although actual levels of harvest and trade are unknown, market signals indicate that there is a credible risk that it will be affected by trade. Given the vulnerability of this species to any degree of wild harvest, it meets the criteria for inclusion in Appendix II Criterion A of Annex 2a.

Other Considerations: The Government of India has implemented "stricter domestic measures" regarding CITES-listed species whereby the export for commercial purposes of all wild-taken specimens of species included in Appendices I, II and III (except some cultivated varieties of plant species) is prohibited. Therefore, if the proposal to include *C. jeyporensis* is adopted by the Parties, the species would subsequently be prohibited from commercial trade from India and it may be appropriate to submit to the CITES Secretariat a zero quota for wild-harvested specimens for commercial trade reflecting the "stricter domestic measures" that would come into force with the listing.

Inclusion of Helmethead Gecko *Tarentola chazaliae* in Appendix II

Proponents: Mauritania, Senegal

Summary: The Helmethead Gecko *Tarentola chazaliae* is a relatively small gecko, one of around 20 members of the genus *Tarentola*, endemic to the Atlantic Coastal Sahara, occurring along the coastline of western North Africa in Morocco, the non-self-governing territory of Western Sahara, and Mauritania. Its range extends almost continuously along 1,400 km of coast, extending some 20 km inland (although there is a single record from 150 km inland indicating a potentially much wider distribution) with reports that it is common across its known range. *T. chazaliae* was assessed as Vulnerable on the IUCN Red List in 2004 based on an extent of occurrence estimated at less than 20,000 km², a small number of known locations, continued and predicted decline in extent and area of habitat and decline in mature individuals ascribed to collection for the pet trade. Habitat degradation, caused by urbanisation and coastal development, was identified as the primary threat to the species; more recent studies indicate the species may be notably sensitive to the impacts of anthropogenic climate change.

According to the Supporting Statement, the attractive patterns and vocal behaviour of the species have resulted in numbers of *T. chazaliae* being sold into the international pet trade from the early 1970s onwards. Prices range from EUR40–60 (equivalent to USD41–61 as of August 2022) for captive-bred individuals in Europe, to USD200 for wild-caught adult females in the USA. The species is known to be offered for sale in Canada, the USA, in Europe (mainly Germany, Sweden, the UK, France, Belgium and the Czech Republic), and also in Asia (mostly China and Taiwan POC). The only national trade data are for US imports and exports (from LEMIS). A total of 420 wild-sourced individuals were imported by the USA between 2011 and 2018, from Egypt, France and Germany; and 11 wild-sourced individuals exported by the USA in 2012, originating from Egypt and Morocco. Additionally, 651 individuals reported as captive-bred were imported by the USA between 2011 and 2020, and 110 captive-bred and four captive-born individuals were exported by the USA during the same period, almost all since 2016.

A substantial portion of *T. chazaliae* individuals being offered for sale on online platforms are adult specimens, either labelled as wild-caught or captive-bred. Instances of illegal trade of *T. chazaliae* specimens have been recorded in recent years including a seizure of more than 500 wild-caught individuals in Sweden in 2018.

In Morocco, the capture, sale, acquisition and export of *T. chazaliae* without a permit is prohibited. No other legal instrument is currently in place for the protection of the species.

Analysis: No recent population size or trend estimates are available for *Tarentola chazaliae*; information on its status is conflicting. An IUCN Red List assessment in 2004 inferred likely declines owing to coastal development and collection, while more recent studies indicate that the species remains common and relatively widely distributed. The species is in demand as a pet and has featured in international trade. There is very little recent information on the scale of international trade or on any impact of collection for trade although there are indications that at least a portion of the demand for the species is now met through captive breeding. Overall, there is insufficient information to determine whether or not the species meets the criteria for inclusion in Appendix II set out in Res. Conf. 9.24 (Rev. CoP17).

Inclusion of the Desert Horned Lizard *Phrynosoma platyrhinos* in Appendix II

Proponent: United States of America

Summary: The Desert Horned Lizard *Phrynosoma platyrhinos* is one of around 21 species of small, horned lizard in the genus *Phrynosoma*. It occurs in the west of the USA, extending into northwestern Mexico and is found in desert shrublands and the lower reaches of interior chaparral and Great Basin conifer woodlands. The species was assessed as Least Concern on the IUCN Red List in 2016, with an estimated population size of over 100,000 and a stable or slowly declining population trend. There are anecdotal accounts of local population declines but quantitative information is lacking. Four species of *Phrynosoma* (*P. blainvillii*, *P. cerroense*, *P. coronatum* and *P. wigginsi*) are currently included in Appendix II. The entire genus *Phrynosoma* is the subject of a proposal (number 18) by Mexico for inclusion in Appendix II.

Horned lizards have specialised dietary requirements (they feed almost exclusively on ants) and relatively high productivity, maturing at 10–12 months and producing one or two clutches of around seven eggs annually. Annual survivorship of young has been assessed at 26–38%. *P. platyrhinos* is primarily affected by habitat loss and degradation due to anthropogenic development, invasive non-native grasses, and climate change. Habitat loss and fragmentation have locally reduced or eliminated previously suitable habitat within the range and climate change has reportedly resulted in a shift in range to higher elevations.

Phrynosoma platyrhinos is found in the pet and reptile trade but, because of its dietary requirements, is reportedly very difficult to keep alive in captivity. The species has been recorded in international trade, with the USA reporting commercial exports of just under 20,000 live wild-sourced individuals between 2008 and 2017, with an additional 900 reported as from captive sources. Since 2018 reported trade has effectively ceased, with only three individuals reported for export for commercial purposes. The reasons for this change are not clear, although there are indications that the challenge of keeping them alive in captivity has led to their virtual disappearance from trade. There is no indication of large quantities of the species or the genus in seizure records.

Collection and sale of the species is currently regulated in the six US states in which the species occurs, with bag and possession limits ranging from three *P. platyrhinos* (Utah) per person per day to no collection allowed (Oregon).

Analysis: Although recent information is lacking, available information indicates that the Desert Horned Lizard is a relatively abundant species with a large wild population. The species has featured in the international pet trade, but is evidently very difficult to keep alive in captivity with indications that demand has latterly declined. Negligible trade has been reported in recent years (post 2017). In the decade before this, reported trade averaged around 2,000 per year. Offtake from the wild is regulated in all six states in the USA where the species occurs. Were trade to increase to pre-2018 levels, it seems unlikely that the species would meet criteria for inclusion in Appendix II as set out in Res. Conf. 9.24 (Rev CoP17). None of the species currently included in Appendix II can be easily confused with *P. platyrhinos*.

Inclusion of Horned Lizards *Phrynosoma* spp. in Appendix II

Proponent: Mexico

Summary: Horned lizards *Phrynosoma* spp. are small insectivorous desert-dwelling lizards that occur in southern Canada, the United States of America (USA), and Mexico. There are up to 21 species currently recognised, however, taxonomic uncertainty remains with some authors recognising between 12 and 17 species. Four species are currently listed in Appendix II (*P. blainvillii*, *P. cerroense*, *P. coronatum* and *P. wigginsi*), although *P. coronatum* is no longer considered an accepted species by the CITES Standard Reference proposed. The USA has also proposed an individual listing of *P. platyrhinos*, CoP19 Prop. 17, which occurs in the USA and Mexico, in Appendix II.

Fifteen species have been assessed by the IUCN Red List at various times between 2007 and 2016. In 2007, one species (*P. ditmarsii*) was assessed as Data Deficient and another (*P. mcallii*) as Near Threatened; all others were assessed as Least Concern. *Phrynosoma* species are primarily affected by habitat loss and degradation due to anthropogenic development, invasive non-native grasses, and climate change. Due to climate change, some species (particularly *P. platyrhinos*, *P. hernandesii*, *P. mcallii*, and *P. blainvillii*) are thought to be declining at lower elevations with their ranges shifting to higher elevations. National assessments of *Phrynosoma* species record three vulnerable species in the USA and four threatened species in Mexico; *P. hernandesii* is considered endangered in Canada.

Thirteen of the species have been recorded in trade, most at a low or very low level. The most highly traded species is the Desert Horned Lizard *P. platyrhinos*; between 2008 and 2017 just over 2,000 live individuals were reported exported annually from the USA. Trade since then has been at a negligible level (see analysis of Prop. 17 for further discussion). Of the other species, Mexico has reported exports of just under 700 live wild-sourced *P. asio* individuals (see below). Of the four species listed in Appendix II, 90 live specimens in total were recorded in trade in the period 1991–2020. The only species currently classified as of conservation concern, (*P. mcallii* – Near Threatened) has been the subject of limited export for scientific specimens (51 imports and 53 exports reported by the US between 2011 and 2016).

The proponent seeks to include the genus *Phrynosoma* in CITES Appendix II in accordance with Res. Conf. 9.24 (Rev. CoP17), with *P. asio*, *P. braconnieri*, *P. modestum*, *P. orbiculare*, *P. platyrhinos*, *P. solare*, and *P. taurus* under Criterion A of Annex 2a and the remainder of the genus under Criterion A of Annex 2b.

- ***Phrynosoma asio*:** Endemic to Mexico, with an unknown population. Assessed as Least Concern on the IUCN Red List in 2012 with the population trend estimated to be stable. The USA reported importing 41 live captive-bred individuals between 2010 and 2014 and exporting 23 live captive-bred and 12 wild-sourced individuals (two originating from Mexico, and 10 from the USA) between 2011 and 2020. Mexico reported exporting 578 live wild-sourced individuals for commercial purposes in 2019–2021, with numbers increasing nearly 8-fold during this time, and 24 live individuals for scientific purposes in 2000–2017.
- ***Phrynosoma braconnieri*:** Endemic to Mexico and found in two states (Puebla and Oaxaca). Assessed as Least Concern on the IUCN Red List in 2007 with a stable population trend, but no population estimate available. Under special protection in Mexico. Negligible trade reported.
- ***Phrynosoma modestum*:** Occurs in Mexico and USA. Assessed as Least Concern on the IUCN Red List in 2007, with a stable population trend. No population information available. Just under 200 live wild-sourced individuals reported as exported by the USA between 2008 and 2020, most in 2014.
- ***Phrynosoma orbiculare*:** Endemic to Mexico. Assessed as Least Concern on the IUCN Red List in 2007 with a stable population trend and considered common in parts of its range. Nationally threatened in Mexico. Negligible trade reported.

- ***Phrynosoma platyrhinos***: (see analysis of CoP19 Prop. 17).
- ***Phrynosoma solare***: Occurs in USA and Mexico. Reported as widely distributed and one of the commonest *Phrynosoma* species in the Sonoran Desert. Assessed as Least Concern on the IUCN Red List in 2007, with a stable population trend. Negligible trade reported.
- ***Phrynosoma taurus***: Endemic to Mexico and occurring in four states (Morelos, Puebla, Oaxaca, and Guerrero). Assessed as Least Concern on the IUCN Red List in 2007 with a stable population trend. Assessed as nationally threatened in Mexico. Negligible trade reported.

Four species within the genus are currently listed in CITES Appendix II. However, these species are not thought to be easily confused with other species in the genus. Additionally, with minimal training the proposed species are not likely to be confused according to experts with a few exceptions of newly split and discovered species.

Analysis: Of the species of *Phrynosoma* proposed for inclusion in the Appendices, only one (*P. platyrhinos*—the subject of Proposal 17) is known to have featured in trade in notable numbers and even in this case reported trade has been at a relatively low level (around 2,000 per year from 2008–2017) with negligible trade since then. Other species have either not been recorded in trade or are recorded at a low level. This includes those species currently listed in Appendix II, in which minimal trade has been reported since 1991. With the exception of very limited export and import of scientific specimens of the Near Threatened *P. mcallii*, all species recorded in trade are not currently considered of conservation concern. Analysis of Proposal 17 indicates that *P. platyrhinos* is unlikely to meet the criteria for inclusion in Appendix II. It seems unlikely that any other *Phrynosoma* species meets these criteria.

Inclusion of Pygmy Bluetongue Lizard *Tiliqua adelaidensis* in Appendix I

Proponent: Australia

Summary: The Pygmy Bluetongue Lizard *Tiliqua adelaidensis* is a medium-sized skink endemic to South Australia, where it lives in empty spider burrows in isolated remnants of native temperate grassland. The species was considered extinct until rediscovered in 1992. It was classified as Endangered by IUCN in 2017. The species was included in CITES Appendix III in 2022 (effective 22 June). All known subpopulations of *Tiliqua adelaidensis* are wholly conservation dependent.

Formerly known from the southern suburbs of the city of Adelaide, north to the town of Mannanarie, *T. adelaidensis* now only survives in the northern part of its former range in 33 small (mostly less than 100 ha), broadly disjunct patches, indicating a loss of roughly 40% of its former distribution range. There is no detailed population information; estimates range from around 5,000 to under 10,000.

The species has limited dispersal ability and all known subpopulations are thought to be genetically distinct as well as physically separated with only limited gene flow between even very close subpopulations.

Ongoing habitat destruction and loss due to intensive agriculture and grazing, coupled with the unique ecological community the species is confined to (i.e., the critically endangered Iron-grass Natural Temperate Grassland of South Australia), have already resulted in a documented, marked decline of the wild population (including mature individuals) and in complete loss of certain subpopulations. Since 1992, no definite, consistent trends have been recorded across all subpopulations—while some local subpopulations have been stable, there have been marked decreases in others.

The species is protected under national legislation and there is no legal commercial trade. Instances of Pygmy Bluetongue Lizards offered for sale were first reported in late 2017. The actual volume of illegal trade remains unknown, but the species commands high prices.

Analysis: *Tiliqua adelaidensis* is believed to have a relatively small population and a restricted and fragmented area of distribution with the area and quality of its habitat in decline. Current population trends are unknown. Despite protection under Australian law, in recent years the species has been identified within the European and Japanese pet markets and has evidently been the subject of illegal export, although the extent of this trade and its impact on wild populations remains unknown. The species may therefore meet criteria for inclusion in Appendix I set out in Annex 1 of Res. Conf. 9.24 (Rev. CoP17). Inclusion of the species in Appendix I would be in line with existing national legislation. The benefits of an Appendix I listing are unlikely to be realised unless enforcement efforts are increased.

Transfer of Puerto Rican Boa *Epicrates inornatus* from Appendix I to Appendix II

Proponent: United States of America

Summary: *Epicrates inornatus* (now more widely known as *Chilabothrus inornatus*) is an adaptable semi-arboreal, non-venomous snake endemic to Puerto Rico, where it has a wide distribution. The population, currently considered stable at around 30,000 individuals, has recovered from historical declines attributed in part to deforestation in the early 20th century. This is thought to be due in part to the increase in forested areas in Puerto Rico. The species was assessed by IUCN (as *C. inornatus*) in 2015 as Least Concern on the basis of a large distribution, a lack of widespread threats, and an ability to inhabit altered environments. It is legally protected in Puerto Rico.

The species has been listed in CITES Appendix I since 1977. No exports of the species have been reported from Puerto Rico since the listing. Limited trade (192 items) in *Epicrates inornatus* has been reported by other Parties in the period 1975–2014, but none of these was reported to be wild-sourced or to have originated in Puerto Rico. No exports of the species have been reported in the CITES Trade Database by any Party since 2014.

The Virgin Islands Boa *Chilabothrus granti* (IUCN Endangered, assessed 2015) and Red-tailed Boa *Boa constrictor* (IUCN Least Concern, assessed 2014) also occur on Puerto Rico, as does an introduced population of reticulated python *Malayopython reticulatus* (IUCN Least Concern, assessed 2011). All three species are included in the CITES appendices, with *C. granti* in Appendix I and *B. constrictor* and *M. reticulatus* in Appendix II. There are no reported exports in the CITES trade database of these species from Puerto Rico in the most recent years of reported trade (2008–2018) from the USA.

This proposal is the outcome of a review conducted by the United States of America and considered by the 27th meeting of the Animals Committee (2014) as part of the *Periodic Review of the Appendices* under Res. Conf. 14.8 (Rev. CoP17). The Committee agreed that the species did not meet either the biological or trade criteria for inclusion in Appendix I and asked the United States to submit a proposal for consideration at CoP19 to transfer the species to Appendix II.

Analysis: The Puerto Rican Boa is classified as Least Concern on the IUCN Red List in 2015. It is widely distributed within Puerto Rico and has a stable population, with a recent estimate of 30,000 individuals. It does not have a small, or declining population, nor does it have a restricted distribution. No trade has been recorded from Puerto Rico since its listing in 1977 and no international trade in the species from any CITES Party has been reported since 2014, indicating low demand for the species, which remains legally protected in Puerto Rico. It does not meet the biological or trade criteria for inclusion in Appendix I and it is unlikely that a transfer of the species to Appendix II will stimulate trade in this or any other Puerto Rican boa. Transfer of the species to Appendix II is in line with the Precautionary measures in Annex 4 of Res. Conf. 9.24 (Rev. CoP17). This proposal is supported by the Animals Committee.

Inclusion of Timber Rattlesnake *Crotalus horridus* in Appendix II

Proponent: United States of America

Summary: The Timber Rattlesnake *Crotalus horridus* is a terrestrial long-lived ectotherm that inhabits a variety of habitats including temperate forest, inland wetlands, pastureland and rocky areas. The species is morphologically distinct from other rattlesnake species due to the presence of dark zigzag patterns on its back. The species is native to the USA where it is known to be extant in 21 states and is now extinct from its marginal range in southern Canada. The proponent makes a case for Appendix II listing to combat unsustainable use and illegal trade. The same proposal was submitted to both CoP10 and CoP11 in 1997 and 1999 respectively and withdrawn on both occasions.

The species was last assessed for inclusion on the IUCN Red List in 2007 and classified as Least Concern due to a wide distribution and presumed large population. The population size is not currently known but an assessment by NatureServe in 2014 stated that it was presumed to be at least 100,000 individuals and “Apparently Secure” across its range and common in some areas, despite the species being assessed as threatened in 23 (74%) states. The species has been extirpated from the states of Maine and Rhode Island in the USA. Prominent threats to the species identified by NatureServe, the IUCN Red List assessment, and a recent survey conducted across the USA are habitat loss and fragmentation, mortality from roadkill, hunting, and persecution. The species is known to be hunted domestically in unknown volumes during recreational rattlesnake roundups, and is also used in the tradition of serpent handling in Appalachian churches. The species is sold within the USA live and in the form of skins, venom, and novelty items including taxidermy specimens.

No global trade data exist, but the US has recorded exports of only 47 individuals between 2010 and 2015, the majority as captive sourced. No trade has been reported since 2015. Imports to the US from Germany of captive-bred specimens (mainly liquid forms of medicinal parts and products) between 2010 and 2020, suggest that there may be some captive breeding of the species for commercial purposes outside its range. Very few records of online advertisements have been found outside the USA, but included some for live individuals and for homoeopathic remedies containing extremely diluted quantities of snake venom in India. There is anecdotal evidence that live specimens of the species may be sold at reptile shows in Europe for over USD800, but this is based on information from one seizure in Florida in 2013. There are also reports of offers for sale at a reptile show in South Africa, but it is not clear how recently this was observed and whether the animals were wild-sourced.

International trade was not identified as a prominent threat to the species by the IUCN Red List nor the NatureServe 2014 assessments. According to the NatureServe 2014 assessment, the species was in demand for use as pets and in private collections, but it is not clear if this was internationally or domestically.

Harvest of the species is now prohibited in 18 out of 31 states in which it is extant, and some populations of the species inhabit protected areas.

Analysis: This species was most recently assessed as Least Concern on the IUCN Red List in 2007 and “Apparently Secure” across its range by NatureServe in 2014. The most recent status information available suggests that the population size was at least 100,000 and that a short-term decline of over 10% over three generations was possible. The species has been subject to considerable human induced mortality. Any trade appears to be predominantly domestic. Available evidence shows that international trade is minimal and is unlikely to be having a significant impact on the species’ population in comparison to other effects. There is no indication that regulation of international trade is necessary and therefore the species does not appear to meet the criteria for listing in Appendix II.

Inclusion of Amazon Matamata *Chelus fimbriata* and Orinoco Matamata *Chelus orinocensis* in Appendix II

Proponents: Brazil, Colombia, Costa Rica, Peru

Summary: *Chelus* is a genus of distinctive, relatively large (30–50 cm) highly aquatic freshwater turtles found in South America, formerly considered to comprise a single species, the Matamata *Chelus fimbriata*. Recently, the splitting into two separate species, the Amazon Matamata *Chelus fimbriata* and the Orinoco Matamata *Chelus orinocensis*, has been proposed. The proponents include discussion of the implications of this split in their Supporting Statement. This split is not recognised by current CITES standard nomenclature and there is no proposal to update the standard nomenclature for *Chelus* species submitted for CoP19. In this analysis, the current CITES standard nomenclature for this genus is followed, which recognises only one species *Chelus fimbriata* in the genus. Were the proposal to be accepted, standard CITES nomenclature would apply to the listing.

The Matamata *Chelus fimbriata* occurs in aquatic habitats in water systems including rivers, lagoons and flooded forests in nine range States in South America (Bolivarian Republic of Venezuela (henceforth Venezuela), Brazil, Colombia, Ecuador, French Guiana, Plurinational State of Bolivia (henceforth Bolivia), Suriname, Guyana, and Peru)). The species has an overall range calculated at close to 7 million km² but is likely to be restricted to only certain habitats within this area.

The species has not been assessed on the IUCN Red List. Its global conservation status was assessed as least concern by the IUCN SSC Tortoise and Freshwater Turtle Specialist Group (TFTSG) in 2011. The species is reported to be affected by pollution, habitat loss and fragmentation as well as disturbance of nesting sites through developments. Quantitative population data are not available for any range State, although in Venezuela it has been noted as locally common in some areas and one study in a protected area in Colombia found a density of 2.3 per 10 m² indicating that the species may be at least locally abundant.

The species is in some international demand from turtle and aquarium enthusiasts. There is very little information on the scale of this demand, although prices in online fora are relatively high compared with other turtle species (an average of USD340 for sites in the USA and UK, and USD60–285 in China). Information from online platforms publishing advice on keeping reptiles as pets indicates that this species is not suitable for beginners due to factors including its large size and carnivorous diet. Data from the US and Peruvian authorities show that most legal reported exports originate from Peru, with no reported trade or seizure reports from four range States (Brazil, Bolivia, Ecuador, and French Guiana) that together make up more than 70% of the estimated global distribution. USA data show over 2,000 individuals in direct exports from Peru with most (95%) between 2015 and 2020. The majority (60%) were reported captive-bred with 520 wild-sourced individuals and the remaining ranched. Commercial export of wild-collected individuals of this species is illegal in Peru. National trade data from Peruvian authorities show exports of nearly 64,000 live individuals of unknown sources for commercial purposes between 2010 and 2020 with China (~40,000) and the USA (fewer than 15,000) as prominent importers. There is a discrepancy between these data and those of the USA, with Peruvian national authority data reporting 12,000 more individuals in exports to the USA than are reported as imported by the USA for the same time period. The reason for this discrepancy is unknown. The USA has also reported some imports from Guyana (around 700 of wild origin between 2010 and 2020) and Venezuela (around 600 reported captive-bred between 2008 and 2012).

Most seizures reported occur within Colombia with over 7,000 individuals reported between 2019 and 2020; in 2013 and 2014 nearly 500 wild-sourced live individuals from Colombia were refused entry to the US and seized. There are reports of illicit trade routes operating from Colombia, Brazil, and Venezuela (via Colombia) into Peru.

Export of the species is reported to be prohibited from Brazil, Colombia, and Venezuela despite records of import from these countries into the USA. There are reported to be numerous Matamatas in captivity outside range States. Although there are no authorisations for captive breeding of the species in Colombia, the proponents indicate that individuals seized in Colombia appear captive-bred due to their uniformity in size and physical characteristics.

Analysis: The Matamata is a very widely distributed species, classified in 2011 as least concern by the IUCN TFTSG, with a global distribution of several million square kilometres. It is said to be at least locally common within this range.

The species is in some demand in the exotic pet trade, chiefly on account of its distinctive appearance (although maintaining large adults in captivity apparently presents challenges) and it has been reportedly exported in some numbers (low thousands per year) from range States (mainly Peru, but also Guyana, Venezuela and possibly Colombia) in the past decade. The origin of the specimens in trade is generally unclear. Some are reported as wild-collected, while others are reported as ranched or captive sourced. There is no information on the impact of wild collection on populations. However, given its very extensive range and predominance of juveniles in trade. The species would therefore appear not to meet the criteria for inclusion in Appendix II set out in Res. Conf. 9.24 (Rev. CoP17).

Other Considerations: Given the likely reclassification of *Chelus fimbriata* as two separate species, if Parties were to consider it necessary to list the taxon, it may be preferable to list the genus for any future taxonomic changes to be accommodated.

Inclusion of Alligator Snapping Turtle *Macrochelys temminckii* and Common Snapping Turtle *Chelydra serpentina* in Appendix II

Proponent: United States of America

Summary: *Macrochelys temminckii* and *Chelydra serpentina*, commonly referred to as snapping turtles, are large aquatic freshwater turtles, native to North America, with *M. temminckii* endemic to the USA. They inhabit a wide range of waterbodies including large rivers, major tributaries, bayous, canals, swamps, lakes, ponds, and oxbows. Currently, both species are listed in Appendix III and both are proposed for inclusion in Appendix II with *M. temminckii* proposed for inclusion under Article II, paragraph 2(a) and *C. serpentina* proposed as a lookalike under Annex 2b of Res. Conf. 9.24 (Rev. CoP17).

Macrochelys temminckii was estimated to have a total population of 361,213 individuals in 2021, with population estimates ranging from 68,154–1,435,825 individuals. Regional *M. temminckii* population estimates vary across its range from an estimated 200,000 individuals in a southern region to 213 individuals in a northern region. The northern populations of *M. temminckii* are also reported to be experiencing a greater level of range contraction and local extirpations than southern populations. The most recent IUCN Red List assessment for *M. temminckii* was conducted in 1996 and classified the species as Vulnerable. *Chelydra serpentina* was classified as Least Concern in 2010, with an estimated total population of between 10,000 and one million individuals.

Extensive historic commercial harvest for human food of *M. temminckii* in the USA led to population decreases. Due to the species' slow life history, populations in areas where harvesting occurred have either remained stable or decreased. Direct international trade in *M. temminckii* in the most recent ten years (2011–2020), was above 350,000 (averaging ~38,000 annually) with virtually all reported as live, wild-sourced individuals exported by the USA. However, most individuals in trade are immatures hatched (and presumed bred) in captivity, which are reported as wild-sourced because the legal acquisition status of founder stock remains unknown. Virtually all this trade was imported by Hong Kong SAR, Macao SAR, and mainland China. *Macrochelys temminckii* is affected across its range by a variety of factors including nest predation, mortality and injury associated with freshwater fishing and other recreational activities and adult harvest. It is unknown to what extent the international trade drives harvest in *M. temminckii* and what impact it has on the wild population, and expert opinions on this differ. The commercial harvest of wild *M. temminckii* is prohibited in all states within its range and restricted personal harvest is only permitted in Louisiana and Mississippi. Some illegal harvest of *M. temminckii* was reported still to occur in the USA, but seizures involving the species were infrequent and the scale and impact on wild populations unknown.

Extensive trade has also been reported in *Chelydra serpentina* (~570,000 for the period 2011–2020); this is almost entirely (98%) in individuals reported as captive-bred or captive-born. While adult *C. serpentina* can be readily distinguished from *M. temminckii*, immature individuals are similar in appearance.

Analysis: *Macrochelys temminckii* and *Chelydra serpentina* are relatively widespread freshwater turtles occurring in North America. Neither species has a small population, with *M. temminckii* the least abundant of the two, estimated to have a global population of over 300,000. The two species are both in international trade, with an average annual export of around 38,000 live *M. temminckii* individuals from the USA reported as wild-sourced. However, most of these comprise immature individuals hatched (and presumed bred) in captivity. *Macrochelys temminckii* populations had decreased due to commercial harvesting in the past, however, commercial trade in specimens harvested from the wild is now banned in all states in the USA with only limited personal harvest permitted in two states. Based on the information available it does not appear that *M. temminckii* meets the criteria for inclusion in Appendix II under Annex 2a of Res. Conf. 9.24 (Rev CoP17). This being the case *C. serpentina* would not meet the lookalike criteria set out in Annex 2b of the

Resolution, despite the difficulty in distinguishing between hatchlings, these being the principal specimens in trade.

Other Considerations: In November 2021, the U.S. Fish and Wildlife Service (USFWS) proposed including *M. temminckii* as a threatened species on the List of Endangered and Threatened Wildlife. This would extend the Endangered Species Act of 1973 (ESA) to this species. If adopted it would be illegal to import or export, take, possess, transport across states or USA borders or conduct activities with this species without an authorisation permit.

Inclusion of Map turtles *Graptemys barbouri*, *G. ernsti*, *G. gibbonsi*, *G. pearlensis*, and *G. pulchra* in Appendix II

Proponent: United States of America

Summary: Broad-headed map turtles *Graptemys* spp. are a clade of five species within a genus of 14 species of medium-sized freshwater turtles with characteristic map-like markings on the carapace. The five species proposed for inclusion in Appendix II, *G. barbouri*, *G. ernsti*, *G. gibbonsi*, *G. pearlensis*, and *G. pulchra*, commonly referred to as broad-headed map turtles, are all endemic to southeastern USA. They were included in Appendix III in 2006.

Graptemys barbouri occurs in several river systems across the states of Florida, Georgia, and Alabama. In 2014–2015 its population in Florida was estimated at between 11,000 and 28,000 individuals and considered secure, with evidence the species had expanded its range in the state. *G. barbouri* was classified as Vulnerable on the IUCN Red List in 2010 due to an inferred population decline caused by habitat degradation, overharvesting, predation and disease. Very little international trade is reported in CITES trade data (56 live captive-bred and captive-born exported from the European Union (EU27) to mainland China and Hong Kong SAR, 2011–2020). Commercial harvest is banned throughout its range.

Graptemys ernsti has a restricted range in western Florida and southern Alabama. No population estimates are available. The species was classified as Near Threatened on the IUCN Red List in 2010 as it was perceived to have been experiencing population declines caused by habitat degradation. No international trade was reported between 2011 and 2020. *Graptemys ernsti* is protected from commercial exploitation in Alabama; in Florida collection is prohibited and possession limited to two individuals.

Graptemys gibbonsi has a restricted range in the Pascagoula River system in the state of Mississippi. Its population was recently estimated at just over 34,000 individuals. *Graptemys gibbonsi* was classified as Endangered on the IUCN Red List in 2010 due to a restricted range and an inferred population decline attributed to threats including water pollution, habitat loss and degradation, collection for the pet trade, direct human persecution and predation. Very little international trade is reported in CITES trade data (101 captive-bred individuals exported by the EU to China and Hong Kong SAR, between 2011 and 2020). The species is protected from commercial exploitation in Mississippi, with licensed collection limited to four per year.

Graptemys pearlensis has a restricted range along a combined 940 km section of the Pearl and Bogue Chitto rivers in the states of Louisiana and Mississippi. Its global population was estimated at 22,000 in 2020. *Graptemys pearlensis* was assessed as Endangered on the IUCN Red List in 2010 due to an estimated population decline of 80–90% between 1950 and 2010 caused by habitat degradation and loss, pollution, overharvesting, persecution and predation. Minimal international trade in *G. pearlensis* has been reported. Harvest of *G. pearlensis* is regulated in the state of Mississippi, with licensed collection limited to four individuals per year.

Graptemys pulchra occurs in river systems in the states of Alabama, northeastern Mississippi and northwestern Georgia. No population estimates are available and, while not particularly abundant in its range, no marked declines have been observed. *Graptemys pulchra* was classified as Near Threatened on the IUCN Red List in 2010 as the species was experiencing unquantified levels of threat from habitat degradation and predation. No international trade in *G. pulchra* has been reported between 2011 and 2020. *Graptemys pulchra* is prohibited from commercial harvest in Alabama and Georgia, with harvesting regulated in the states of Tennessee and Mississippi where licensed collection is limited to four individuals per year during certain periods.

There was no available evidence of illegal trade or seizures for these species. These five *Graptemys* species all resemble one another, particularly as juveniles, and may be difficult to distinguish when in trade.

Analysis: These five species of *Graptemys* turtles are all endemic to the USA. Three of the species (*G. barbouri*, *G. gibbonsi*, and *G. pearlensis*) have populations numbering in the low tens of thousands. Abundance observations for *G. ernsti* and *G. pulchra* indicate their populations are not of conservation concern. Unlike some other *Graptemys* species not covered by this proposal, minimal international trade in wild-sourced individuals of any of these five species has been reported between 2011 and 2020, and only small numbers of captive-born individuals have been reported in trade. The proposed *Graptemys* species occurring in the US states of Alabama, Florida, and Georgia are protected and thus prohibited from harvesting. Those occurring in the states of Mississippi and Tennessee are subject to harvest regulations but harvesting is not regulated in Louisiana. Because of existing national trade and harvesting regulations in most states and a lack of international trade in wild-sourced individuals, it is unlikely that any of the species meet the criteria for inclusion in Appendix II in Annex 2a of Res. Conf. 9.24 (Rev. CoP17).

Other Considerations: In 2021, the U.S. Fish and Wildlife Service announced that it intends to list *Graptemys pearlensis* as Threatened under the Endangered Species Act, and the four additional broad-headed map turtle species (*G. barbouri*, *G. ernsti*, *G. gibbonsi*, *G. pulchra*) as Threatened due to the similarity of their appearance. If adopted, this would prohibit these species from being harvested, offered for sale or sold and imported or exported via interstate or international trade.

Transfer of Red-crowned Roofed Turtle *Batagur kachuga* from Appendix II to Appendix I

Proponent: India

Summary: *Batagur kachuga*, one of six species in the genus *Batagur*, is a large freshwater turtle, extant in India and thought to be extinct in Bangladesh. The most recent IUCN Red List assessment for the species, conducted in 2019, noted that the only reliable records of the species in the previous 12–13 years were in the National Chambal Sanctuary in northern India, where there were estimated to be around 500 mature individuals. The species was assessed as Critically Endangered on the basis of suspected historical decline and continuing adverse impacts of pollution, hydrological projects and local subsistence consumption. It was included in Appendix II in 2002. Currently *Batagur affinis* and *B. baska* are included in Appendix I and the remaining members of the genus in Appendix II.

The species is said to be in demand internationally for consumption as food and as pets, with the males more popular as pets due to their bright breeding colouration. Since 2016, the species has been reported in seizures within and outside India and in offers for sale on social media platforms. The CITES trade database reports only 14 live captive-bred specimens in commercial trade since the Appendix II listing in 2002 and no commercial exports since 2006. Although the species can be bred in captivity there are no known commercial captive breeding centres.

Analysis: The Critically Endangered *Batagur kachuga* has a small wild population with a highly restricted distribution in India. It is believed to have undergone a marked historical decline that is thought likely to be continuing. Despite legal protection there is international demand for the species and ongoing illegal trade is suspected. The species therefore appears to meet the criteria for inclusion in Appendix I in Res. Conf. 9.24 (Rev. CoP17).

All commercial exports of wild specimens of the species have been illegal in India since 1999. The benefits of an Appendix I listing are unlikely to be realised unless enforcement efforts are increased.

Transfer of the Indochinese Box Turtle *Cuora galbinifrons* from Appendix II to Appendix I

Proponents: European Union, Viet Nam

Summary: The Indochinese Box Turtle *Cuora galbinifrons* is a medium-sized terrestrial turtle occurring in forested areas between 300 and 1700 m altitude in southern China, Lao People's Democratic Republic (PDR), and Viet Nam. It is slow to mature (10–15 years) and has low fecundity, with a single clutch of 1–3 eggs produced annually.

Apparently once common, field encounters with *C. galbinifrons* are now rare even during dedicated surveys, indicating that populations have suffered severe declines, with calculated population densities of less than one per square km (km²) within protected areas and suitable habitat. The species is estimated to have undergone declines of over 90% over the past 60 years (three generations, at 20 years per generation) and was classified as Critically Endangered by IUCN Red List in 2018, with collection for food and the international pet trade identified as primary threats. The species reportedly continues to be in high demand in the international pet trade and the local and regional food markets.

Cuora galbinifrons was included in Appendix II at CoP11 in 2000 under a genus-level listing for all *Cuora* spp. A proposal to transfer the species to Appendix I was submitted at CoP16 (Prop 33), but an alternative proposal (CoP16 Prop. 32) was adopted resulting in a zero quota for wild specimens traded for commercial purposes (effective June 2013). At the time of the original listing, *C. galbinifrons* included three distinct subspecies. At CoP17 a standard reference adopted for this taxon recognised the subspecies as full valid species (*C. galbinifrons*, *C. bourreti*, and *C. picturata*). *Cuora bourreti* (CoP18 Prop. 33) and *C. picturata* (CoP18 Prop. 34) were transferred to Appendix I at CoP18.

CITES trade reports have been limited to a few thousand individuals since *C. galbinifrons* was originally listed, with some reported trade in earlier years likely to have been in *C. bourretii* and *C. picturata*. Most of the trade was reported to be from captive sources. Observations from markets indicate that actual volumes in trade may be several orders of magnitude greater than reported legal trade volumes, suggesting a high level of illegal, unreported and unregulated trade. Since the zero quota for wild commercial trade was adopted, no trade in wild specimens has been reported.

Analysis: *Cuora galbinifrons* is a relatively widespread species that has been harvested extensively and is now rarely found in the wild. The species has been assessed as Critically Endangered and appears to meet the criteria for inclusion in Appendix I. The population is likely to be small and individuals are slow growing, with limited annual reproductive output, making the species intrinsically vulnerable to exploitation and having experienced a marked decline of 90% in three generations as a result of collection for trade.

At CoP16 a zero-export quota for wild specimens for commercial purposes was adopted with the listing for *Cuora galbinifrons* and therefore all trade in wild specimens of *C. galbinifrons* is already illegal. Benefits of an Appendix I listing are not likely to be realised unless enforcement efforts are increased.

Inclusion of Neotropical Wood Turtles *Rhinoclemmys* spp. in Appendix II

Proponents: Brazil, Colombia, Costa Rica, Panama

Summary: Neotropical Wood Turtles *Rhinoclemmys* spp. occur in central and northern South America and include nine recognised species characterised by colourful patterns on their limbs, head, and carapace. The species can be found in riparian forests, streams, and Neotropical forests, with some species being more aquatic and others more terrestrial. *Rhinoclemmys* are slow-growing species and have a low reproductive output although they are reported to be relatively easily bred in captivity. The major identified threats to *Rhinoclemmys* include human development, contamination of waterways and fires, leading to habitat degradation and loss. *Rhinoclemmys* species are in demand for the pet trade, with juveniles and sub-adults thought to be more desirable, and human food. None of the species is currently included in the Appendices.

Five of the nine species have been assessed as Near Threatened by IUCN, however these assessments date from between 1996 and 2007. Population decreases have been inferred for *R. areolata* and *R. rubida*. No complete population estimates exist for any species, although some localised estimates have been made, often from protected areas, with indications of local abundance in several cases (*R. areolata*, *R. nasuta*, *R. pulcherrima*, *R. punctularia* and *R. rubida*). All species have relatively extensive presumed original distributions, ranging from ca 44,000 km² (*R. diademata*) to over 2 million km² (*R. punctularia*). Available trade information is largely restricted to records of imports and exports to the USA (LEMIS data) with some limited export data from range States. Online surveys have found several of the species offered for sale in Europe, apparently in small numbers. There is also some trade to East Asia.

- ***R. annulata*:** Occurs from Costa Rica south to Ecuador. Assessed as Near Threatened on the IUCN Red List in 1996, provisionally assessed as data deficient by the Tortoise and Freshwater Turtle Specialist Group (TFTSG) in 2011 and 2018. Assessed as nationally endangered in Ecuador. Minimal trade reported.
- ***R. areolata*:** Occurs from Mexico to Honduras. Assessed as Near Threatened on the IUCN Red List in 2007 with an inferred decreasing population trend. Assessed as nationally threatened in Mexico. Minimal trade reported (just under 1,000 exported from Mexico between 2013 and 2021).
- ***R. diademata*:** Occurs in Colombia and Venezuela. Not assessed on the IUCN Red List, provisionally assessed as vulnerable by the TFTSG in 2011. Has the smallest presumed range of all *Rhinoclemmys* species (44,000 km²) and is endemic to the Maracaibo River basin. Its habitat is considered threatened. Assessed as nationally endangered in Colombia and threatened in Venezuela. Limited trade has been reported into the USA (just over 700 captive-sourced individuals imported between 2008 and 2017, most from Nicaragua (not a range State)).
- ***R. funerea*:** Occurs from Honduras to Panama. Assessed as Near Threatened on the IUCN Red List in 1996. Limited trade to or from the USA reported in 2008–2020, including just under 700 exported as captive-sourced.
- ***R. melanosterna*:** Occurs in Colombia, Ecuador, and Panama. Not assessed on the IUCN Red List, provisionally assessed as least concern by the TFTSG in 2011. Nationally assessed as near threatened in Colombia and endangered in Ecuador. Minimal trade reported with the USA.
- ***R. nasuta*:** Occurs in Colombia and Ecuador. Assessed as Near Threatened on the IUCN Red List in 1996, and provisionally assessed as near threatened by the TFTSG in 2010. Assessed nationally as near threatened in Colombia and endangered in Ecuador.
- ***R. pulcherrima*:** Occurs from Mexico to Costa Rica. Not assessed on the IUCN Red List. Assessed as nationally threatened in Mexico. Reported to be the most abundant *Rhinoclemmys* sp. in trade with one subspecies, *R. p. manni* occurring in Nicaragua and

Costa Rica, being the most colourful and desirable. US trade data indicate imports of approximately 8,000 wild-sourced and about 64,000 captive-sourced live individuals, and re-exports of about 28,000 wild, and 34,000 captive-sourced live individuals in the period 2008–2020.

- ***R. punctularia***: Occurs from Venezuela to Brazil. Not assessed on the IUCN Red List, provisionally assessed as least concern by the TFTSG in 2011. Has a large presumed range of over 2 million km². Between 2008 and 2020 the USA reported imports of around 7,000 wild-sourced and 450 captive-bred animals, and exports of approximately 3,000 wild-sourced and 440 captive-bred animals. The majority was exported to China and Hong Kong SAR, and imports were mainly from Guyana and Suriname.
- ***R. rubida***: Endemic to Mexico. Assessed as Near Threatened on the IUCN Red List in 2007 with an inferred decreasing population trend. Nationally under special protection in Mexico. Endemic to Mexico with a presumed range of ca 80,000 km². Reported trade volumes are small (fewer than 300 in total, including export of 280 from Mexico between 2019 and 2021).

Experts note that the species are easily distinguished with minimal training, however, customs officials may need special training or guidance. Some records of wild-sourced individuals reported in direct trade are from non-range States. The species are considered to be easily bred in captivity.

Analysis: There is very little information on current population levels of any *Rhinoclemmys* species. Most are believed to have relatively extensive ranges and at least some to be locally common. Available trade data are limited and very largely confined to US import and export data. Drawing on this source, the only species for which there is any indication of extensive trade are *R. pulcherrima* and *R. punctularia*. The very extensive distribution of *R. punctularia* indicates that this species is also unlikely to meet the criteria for inclusion in Appendix II. Regarding *R. pulcherrima* there is insufficient information on the scale and impact of trade to determine whether or not the species meets these criteria. Given the low levels of known trade and their generally extensive distributions, it also seems unlikely that any of the other seven species currently meet the criteria for inclusion in Appendix II set out in Res. Conf. 9.24 (Rev. CoP17).

Experts note that the species are easily distinguished with training; there would therefore be little justification for listing species for lookalike reasons (Annex 2b A in Res. Conf. 9.24 (Rev. CoP17)).

Inclusion of Narrow-bridged Musk Turtle *Claudius angustatus* in Appendix II

Proponent: Mexico

Summary: The Narrow-bridged Musk Turtle *Claudius angustatus* is a medium-sized (10–12 cm carapace length) semi-aquatic turtle occurring in Mexico, Belize, and Guatemala, where it is found in a wide variety of permanent or semi-permanent freshwater aquatic habitats including ponds in agricultural areas and flooded pastures. *C. angustatus* was classified as Lower Risk/Near Threatened by IUCN in 1996. It is classified as “at risk of extinction” in Mexico and as endangered in Guatemala due to inferred population declines and local extinctions.

The species *Claudius angustatus* is proposed for inclusion in Appendix II under the criteria in Annex 2a paragraph A of Resolution Conf. 9.24 (Rev. CoP17).

There are no estimates of the global population. The majority of the range is in Mexico where it has a projected distribution of around 74,000 km². Local extinctions have been observed. Measured density levels in south-eastern Mexico in 2012–2014 varied from 2–16 ind./ha. There are anecdotal reports of population declines in areas where the species has been harvested in the past. The primary impacts on the species were reported to be illegal collection and trade of wild specimens as meat for human food and the pet trade, with additional impacts from habitat loss due to agricultural practices, livestock and urban development.

In Mexico, the species is mostly sold for its meat with local estimates of substantial harvest for this purpose (e.g., 4000–5000 harvested annually in the region of Lerdo de Tejada, Veracruz state). The species is also locally traded for use in traditional medicine.

Claudius angustatus is apparently among the most traded Mexican turtle species, along with *Terrapene yucatanana*, *T. mexicana*, *Staurotypus triporcatus*, and *S. salvinii* (the last two being the subject of CoP19 Prop. 30). Although under Mexican legislation the species can be harvested from the wild under specific circumstances, no authorisations have been issued by Mexico. Over 11,000 specimens reported as captive-bred were authorised for export by Mexican authorities from 2013–2019, although it is thought that a large proportion of these were likely to have been wild-collected. Most international export is destined for Asia (particularly mainland China and Hong Kong SAR) where it is found in trade for human food, the pet trade, and the traditional medicine market. There has been relatively limited trade with the USA (just over 1,000 imported from Mexico, more than 1,500 wild-sourced specimens in transit originating in Mexico and 3,400 exported (nearly 850 originating in Mexico) between 2008 and 2020, half of which were reported as ranched (the USA is not a range State).

The species commands relatively high prices in the international pet trade: online offers for sale range from EUR600–900 (equivalent to USD600–900 as of August 2022) in Europe and from USD200–695 for hatchlings or juveniles and USD600–2,500 for large adults in the USA, suggesting that demand for the species is mainly from specialist collectors. Most of the specimens offered in Asia appear to be individuals taken from the wild and therefore traded illegally. In 2020 just over 4,000 specimens of destined for mainland China were seized in Mexico in a larger consignment containing other turtle species as well, which may indicate a substantial parallel undeclared trade in turtles generally.

Analysis: *Claudius angustatus* is a relatively widespread species with most of its range in Mexico. There are no global population estimates but there are indications of low densities and declining numbers in at least parts of its Mexican range. Little is known of its status in Belize or Guatemala. In Mexico, the extent of suitable habitat is reported to be decreasing through degradation, although the precise impact on the species is unknown. There is demand in both domestic and international markets as food and in the pet trade. The high prices posted for juveniles and adults suggest a specialist market as pets. Indications, notably from seizures, are that a high proportion of the trade is

in (illegally) wild-collected specimens and there are anecdotal accounts of decreasing populations in areas subject to collection. Harvest is considered a driving threat, however the lack of data on current populations and on the extent of wild offtake for international trade (not authorised in Mexico) makes it difficult to assess the actual impact of harvest. Although the case for listing is not clear-cut, on balance the indications of impact of harvest and growing demand of chelonians from the region supports inclusion in Appendix II on the basis of Criterion B of Annex 2A Res. Conf. 9.24 (Rev. CoP17).

Inclusion of the genus *Kinosternon* in Appendix II and *K. cora* and *K. vogti* in Appendix I

Proponents: Brazil, Colombia, Costa Rica, El Salvador, Mexico, Panama, United States of America

Summary: *Kinosternon* is a genus of 22 species of small (10–20 cm carapace length) semi-aquatic turtles, known as mud turtles, endemic to the Americas. The highest diversity (17 species) is in Mexico; three species occur in South America. None are currently listed in the Appendices. Two recently described Mexican species (*K. vogti* and *K. cora*) are proposed for inclusion in Appendix I, and the remainder for inclusion in Appendix II.

- ***Kinosternon vogti*** has a very restricted distribution in Mexico with an area of occupancy of less than 100 km². The remaining habitat has been highly fragmented by housing development. The wild population size was estimated to total around 1,000 individuals and is believed to be decreasing. Since its description in 2018, three systematic surveys have been carried out resulting in only 56 live observations. The species was assessed as Critically Endangered on the IUCN Red List in 2022 owing to habitat loss and degradation. A decline in area of occupancy, as well as exploitation for the international live animal trade and competition from sympatric native and invasive turtle species was estimated to have reduced the population by more than 80%. The only reported use of this species was as live specimens for collectors, and there is an apparent growing demand in the international pet trade. It is legally protected in Mexico.
- ***Kinosternon cora*** is known from observations of only six individuals from an area of approximately 500 km² and is presumed to be rare. Waterbodies in its range are known to have been degraded and modified for agricultural purposes. It has not so far been assessed for the IUCN Red List. The species has been reported for sale in Asian markets.

Sixteen of the other 20 *Kinosternon* species have been assessed for the IUCN Red List: three as Vulnerable (*K. abaxillare*, *K. angustipons*, *K. dunnii*) three as Near Threatened (*K. acutum*, *K. herrerae*, and *K. sonoriense*), seven as Least Concern (*K. baurii*, *K. chimalhuaca*, *K. creaseri*, *K. flavescens*, *K. hirtipes*, *K. integrum* and *K. subrubrum*) and three as Data Deficient (*K. alamosae*, *K. durangoense*, and *K. oaxacae*). The remaining species (*K. scorpioides*—the most widespread member of the genus, *K. leucostomum*, *K. steindachneri* and *K. steinegeri*) have not been assessed.

Information on total population status and trends for most species of the genus is incomplete or lacking. In Mexico it is reported that most of the waterbodies they inhabit are isolated and, even for species with large areas of distribution, suitable habitats may be occupied by no more than 500 individuals. This fragmentation of populations is believed to increase their vulnerability to overcollection and there are anecdotal observations of this occurring.

Kinosternon species are harvested for both human food consumption and the pet trade. There are no global trade data for any of the species. Data from the USA mostly reflects trade in its native species, of which there are seven. Live *Kinosternon* individuals reported as wild-caught, ranched or from unknown sources have been exported from the USA in relatively large numbers between 2008 and 2020, e.g., (around 47,000 *K. baurii*, 10,000 *K. flavescens*, 38,000 *K. scorpioides* (not a native US species) and 145,000 *K. subrubrum*). The largest numbers reported in trade were the Eastern Mud Turtle *K. subrubrum*, a widespread species endemic to the USA where it is not considered threatened. During the same period just under 1,400 *K. acutum* (not a native US species) were exported from the USA, reported as either wild-caught or ranched. The main destination for US exports was East Asia, including China, Hong Kong SAR, Macao SAR, and Japan. Data show over 7,440 live wild or ranched *K. scorpioides* and just over 43,000 declared as from captive sources imported by the USA from El Salvador.

The main threats to the species in this genus have been identified as habitat loss and degradation, local human consumption for food (particularly in riverside communities), the introduction of invasive species, and collection for trade as pets for national and international markets. There has been no authorised collection of either *K. vogti* or *K. cora* and no reported legal exports. However, both species have been reported in Asian markets, where they appear to command high prices (reportedly up to USD10,000 in the case of *K. vogti*).

In Mexico, limited wild harvest of four *Kinosternon* spp. (*K. Integrum*, *K. acutum*, *K. leucostomum* and *K. scorpioides*) has been authorised with just under 700 licensed in total from 2010 to 2022. Captive breeding of some species occurs in El Salvador, Brazil, Mexico, and the USA, and is well established. In Mexico, just over 30,000 specimens were reported as captive bred from 2010–2020, primarily (>90%) *K. leucostomum* with low quantities of *K. integrum*, *K. abaxillare*, *K. scorpioides* and *K. hirtipes*. During this same period, nearly 33,000 *Kinosternon* spp. were exported from Mexico, largely (94%) comprising *K. leucostomum*. However, there is also evidence of illegal trade: nearly 20,000 (mostly *K. leucostomum*) have been seized in recent years, the majority in 2020 and most showing evidence of capture from the wild. There is no authorisation in Mexico for the collection of wildlife for export purposes, so an illicit origin is presumed. For illegal trade, larger adults with striking colouration are targeted, which may adversely affect population dynamics.

Customs officials are unlikely to be able to tell the difference between species of *Kinosternon*, particularly juveniles and hatchlings, without specialised training. Identification practices are often based on colouration, which is unreliable.

Analysis: *Kinosternon cora* and *K. vogti* both appear to have a restricted area of distribution in which habitat quality is declining as a result of development and agricultural activities. Wild population sizes of both species are unknown, but likely to be small or very small; both are believed to have declined or declined markedly (*K. vogti*), with these declines inferred to be continuing. Despite legal protection in Mexico, both species have been reported in pet markets in Asia indicating international demand. *K. vogti* and *K. cora* both appear to meet the criteria for inclusion in Appendix I in Res. Conf. 9.24 (Rev. CoP17).

With regards to other *Kinosternon* spp., in general information on levels of collection for trade, the impact of collection and the status of wild populations more generally, is lacking. Several species are known to be harvested for food and for the international pet trade, with data from the USA (the only country for which extensive trade data exist) indicating that wild-sourced or ranched animals of some species of the genus have been exported in notable numbers. Seizure data indicate that some of those in trade, notably *K. leucostomum* exports from Mexico declared as captive-bred may in fact be wild-collected. However, overall, there is insufficient information to determine whether or not any of the *Kinosternon* species proposed for Appendix II listing meets the criteria set out in Annex 2a of Res. Conf. 9.24 (Rev. CoP17).

Specimens of *Kinosternon cora* and *K. vogti* are reported to be similar in appearance to *K. angustipons*, *K. dunnii*, *K. herreraei* and *K. leucostomum*. Juveniles and hatchlings of all species are said to be difficult to distinguish from each other. If *K. cora* and *K. vogti* are accepted for inclusion in Appendix I, it would appear that all other members of the genus meet the criteria in Annex 2 b of Res. Conf. 9.24 (Rev CoP17) for inclusion in Appendix II on the basis of being lookalikes.

Inclusion of the Mexican Musk Turtle *Staurotypus triporcatus* and the Pacific Coast Giant Musk Turtle *Staurotypus salvinii* in Appendix II

Proponents: El Salvador, Mexico

Summary: *Staurotypus* is a genus of aquatic turtles, commonly known as giant musk turtles, Mexican musk turtles, or three-keeled musk turtles. The genus contains two recognised species: the Mexican Musk Turtle *Staurotypus triporcatus* found in Belize, Honduras, El Salvador, Guatemala, and Mexico, and the Pacific Coast Giant Musk turtle *Staurotypus salvinii* occurring in El Salvador, Guatemala, and Mexico. *Staurotypus salvinii* has been reported as an introduced species in Florida, USA; its current status there is unknown. *Staurotypus* species are typically much larger than other species of Kinosternidae. Both were categorised as Near Threatened on the IUCN Red List (1996), but these assessments may not reflect the species' current conservation status.

No recent population or status information is available for *S. triporcatus* or *S. salvinii*. Density estimates for *S. triporcatus* in 2009–2010 from the Rio Hondo region along the border of Belize and Mexico were relatively high (160 individuals/ha), but lower (40 individuals/ha) in areas near settlements. A 2013 study found that the species had virtually disappeared from the southern Mexican state of Chiapas. Another study in Veracruz state in Mexico found the population structure of *S. triporcatus* had changed from a high proportion of adults (80%) in 1997 to almost all juveniles (90%) in 2004.

The main threats to *S. triporcatus* have been identified as collection for human consumption and the pet market, as well as habitat loss. *Staurotypus triporcatus* is reported to be a favoured species for food in Mexico. Much of its potential habitat has been modified and fragmented by land-use changes. Habitat modification has increased harvest pressure on *S. triporcatus* by making small, localised populations more accessible to hunters. *S. salvinii* is likely to be affected by similar threats to *S. triporcatus*.

In Mexico, there are 14 captive breeding facilities registered for the management and use of *S. triporcatus*. Between 2013 and 2020 Mexico reported the export of just under 16,000 captive-bred live specimens of *S. triporcatus* mainly to mainland China (86%) and Hong Kong SAR (11%). Observations from seizures indicate that a proportion of specimens exported as captive-bred may in fact be wild-collected. In this period, but particularly from 2016 onwards, over 2,300 individuals exported from the USA (not a range State) were recorded as ranched. Illegal trade in *S. triporcatus* was reported in Mexico in 2020 with 503 individuals seized from a shipment at the Mexico City International Airport amongst a shipment of 15,000 turtles destined for China.

Little is known about trade in *S. salvinii*. USA data include records for nearly 3,000 individuals exported from the USA from 2008–2020, mostly registered as captive-bred, but also around 550 records of ranched and 40 of wild-sourced individuals originating in the USA. This same data show records for just over 100 wild-sourced individuals of this species imported by the USA from Guatemala from 2008–2010 (no imports from Guatemala have been recorded since then). This species is also globally available online, priced at USD140–995 (per hatchling) and advertised as captive-bred.

Differentiating between *S. triporcatus* and *S. salvinii* was reported to be difficult in adults and practically impossible in juveniles, and the defining characteristics were noted to be unreliable.

The species *Staurotypus triporcatus* is proposed for inclusion in Appendix II under the criteria in Annex 2a paragraph B of Resolution Conf. 9.24 (Rev. CoP17) and paragraph 2(a) of Article II of the Convention, and *S. salvinii* is proposed under the criteria in Annex 2b paragraph A.

Analysis: The giant musk turtles *Staurotypus* are relatively widespread Central American species that are harvested for food and for the international pet trade. Both have been assessed as Near

Threatened although these assessments have not been updated since 1996. *Staurotypus triporcatus* has been exported by Mexico in notable numbers (around 2,500 per year in the last ten years), principally to China. Exports are reported as captive-bred but there are indications that at least a proportion of these are wild-caught. Information on the wild status of both species is sparse but there are indications of population decreases in areas where the species is known to have been collected. It is not known how extensive wild collection is across the range of either species or what the impact of such collection is on their global populations. There is insufficient information to determine whether or not either species meets the criteria for inclusion in Appendix II in Res. Conf. 9.24 (Rev. CoP17). Juveniles of both species resemble each other: if either were considered to meet the criteria for inclusion in Appendix II, the other would meet lookalike criteria for inclusion in the Appendix.

Inclusion of all Musk turtles in the genus *Sternotherus* in Appendix II

Proponent: United States of America

Summary: The genus *Sternotherus* commonly known as musk turtles comprises four species (*Sternotherus depressus*, *S. minor*, *S. odoratus* and *S. carinatus*.), which occur in the freshwaters of the North American continent from southeastern Canada to eastern Florida. *Sternotherus* species are small aquatic turtles, with the largest species reaching a maximum shell length of 17 cm (*S. carinatus*). Musk turtles are in international trade, primarily for the pet trade in Asia. Unlike many other turtle species, these musk turtles are generally not used for human food as their musk glands secrete an odour when threatened, making them less appetising. *Sternotherus* spp. appear to be most impacted by habitat modification, degradation, and loss.

All *Sternotherus* species are proposed as meeting Criterion B of Annex 2a of Res. Conf. 9.24 (Rev CoP17).

- The Razor-backed Musk Turtle ***S. carinatus*** is endemic to the USA and has the second largest range of any *Sternotherus* (ca 365,000 km²), largely in Louisiana, as well as parts of Arkansas, Oklahoma, Texas, Alabama, and Mississippi. It was assessed as Least Concern on the IUCN Red List in 2010 although in a 2003 study was ranked highly as a species vulnerable to live capture. Population numbers are currently unknown but are thought to be generally stable. Records show that over 830,000 individuals have been exported by the USA since 2008 (~64,000 per year) with 85% reported as ranched or sourced from the wild. An unknown proportion of these may be captive-born or captive-bred.
- The Flattened Musk Turtle ***S. depressus*** has the most restricted range (~7,000 km²) of any *Sternotherus*, being restricted to the Black Warrior River watershed in north-central Alabama. It was listed as Critically Endangered on the IUCN Red List in 2010, with an unknown population size. Since the 1960s, *S. depressus* has declined severely throughout much of its range, largely attributed to habitat degradation. Since 1987, *S. depressus* has been listed as threatened on the US Endangered Species Act (ESA), and any import, export or take of the species is prohibited. USA LEMIS data show some export of ranched specimens in 2018 although this may be a reporting error.
- The Loggerhead Musk Turtle ***S. minor*** occurs mostly in east-central Georgia and has a range of over 150,000 km². It was listed as Least Concern on the IUCN Red List in 2010 and is typically found at densities of over 100 individuals/ha, with the highest densities reported at 2,857 individuals/ha in 1979 in northwestern Florida. Population numbers are currently unknown but are likely to be in the tens of millions. Records show that over 75,000 individuals have been traded since 2008 (>6,000 per year). Over 86% of these turtles exported by the USA were reported as ranched or sourced from the wild.
- The Common Musk Turtle ***S. odoratus***, occurring from southern Canada to Florida with an estimated range exceeding 2 million km², is the most abundant species in the genus, and is a popular choice of pet. The species was assessed as Least Concern on the IUCN Red List in 2010 with an overall stable population other than in southern Canada where it was reported as decreasing. It is abundant in suitable habitat across its range, with densities up to 700 individuals/ha. Records show that over 1,300,000 individuals have been exported by the USA for the international pet trade since 2008 (~100,000 per year) with 79% reported as ranched or sourced from the wild. An unknown proportion of these may be captive-born or captive-bred.

Musk turtles in the genus *Sternotherus* are very similar to the American mud turtles in the genus *Kinosternon* but tend to be larger and have a more domed carapace, with a distinctive keel along their centre. Musk turtles resemble other members of the family Kinosternidae (*Claudius angustatus* and *Staurotypus spp.*), however, close inspection of the plastron and other head characteristics and marginal scutes allow immature individuals to be differentiated between genera. The plastron can also be used to differentiate between the genera *Sternotherus* and *Kinosternon*.

Analysis: The four species of *Sternotherus* musk turtle are largely confined to the USA. One species, *S. depressus*, has a restricted range and fragmented distribution, and has been assessed by IUCN as Critically Endangered. The other three are widespread or very widespread species which may be at least locally abundant, capable of reaching high population densities (over 2,800 individuals/ha) in ideal conditions. It seems likely that their global populations are very large. The commonest of the species (*S. odoratus*) is a popular pet and has been exported in relatively large numbers (~100,000 per year). A significant proportion of these are recorded as wild-collected or ranched although indications from other chelonians in trade in the US indicate that some may be captive-born or captive-bred. There is no information available on the impact of collection for export on wild populations and harvest has not been specifically identified as a cause of concern for any of the species. *Sternotherus depressus* has been legally protected from collection for trade since 1987. Overall, none of the species of *Sternotherus* is likely to meet the criteria for inclusion in Appendix II in Res. Conf. 9.24 (Rev. CoP17).

Inclusion of Softshell Turtles *Apalone* spp. in Appendix II

Proponent: United States of America

Summary: The genus *Apalone* comprises three species (*A. ferox*, *A. mutica* and *A. spinifera*) of freshwater turtles from the family Trionychidae, all native to the USA, with *A. spinifera* also native to Canada, and Mexico. The species were included in Appendix III by the USA in 2016 and one subspecies of *A. spinifera* (*A. s. atra*) has been included in Appendix I since 1975.

Few population studies have been conducted on members of the Trionychidae family and the genus *Apalone* is one of the least studied softshell turtle genera in North America with no complete population estimates of any species.

- ***Apalone ferox*** inhabits shallow, still and brackish waters in South Carolina, Georgia, Alabama, and Florida. No population estimates are available, although the species was considered common across its range in 2010. Limited studies suggest some localised declines.
- ***Apalone mutica*** is restricted to medium to large rivers with sandbars widely distributed across 22 states in the USA. Despite a lack of empirical data on population size and trends of *A. mutica*, there are anecdotal reports of declining populations over the years.
- ***Apalone spinifera*** has the largest range in the genus, occurring in most of the USA east of the Rocky Mountains as well as southern parts of Canada and northern Mexico. Populations were considered to be generally stable in 2010, but historical declines have been postulated by a number of studies.

Apalone species are productive, with mature females capable of producing multiple egg clutches annually (up to 7 in the case of *A. ferox*). Average clutch size is highly variable but averages over 20 in mature *A. ferox*.

All three species were classified as Least Concern by IUCN in 2010. The Canadian population of *A. spinifera* was designated as endangered in 2016 by the Committee on the Status of Endangered Wildlife in Canada and is currently listed as threatened on Schedule 1 of the Species at Risk Act (SARA; Environment and Climate Change Canada 2018).

Turtles have a life history strategy that entails slow growth and late maturity (e.g., *A. mutica* males mature at four years and females at nine) and longevity (over 30 years).

Softshell turtle species can be readily farmed and freshwater turtle species from North America are generally viewed as easier to breed than most species native to Asia—this has resulted in increased demand for *Apalone* specimens from turtle breeding farms based in the USA. Demand for wild-caught specimens as breeding stock for such farms continues as these are considered generally of superior genetic stock.

Hatchlings, juveniles and adults of softshell turtles are traded for different purposes. Hatchlings either enter the pet trade or are exported to establish turtle breeding farms overseas. Turtles larger than 3.5 to 4.5 kg are generally sold as meat, whereas smaller turtles are killed, frozen, and sold whole. Turtles under 3 kg are usually sold live to be either used in the pet trade or to be raised and later killed for meat. From 2017 to 2020, exports of live turtles accounted for almost all trade (>99%).

According to US data, between 2008 and 2020 just over three million *Apalone* specimens were exported (87% *A. ferox*, 13% *A. spinifera* and >1% *A. mutica*). Over half of these (57%) were reported as ranched, followed by 28% captive-bred, 8% captive-born and 7% wild. The genus was listed in CITES Appendix III in 2016. Trade patterns appear to have altered since then. CITES trade data show just under 100,000 specimens of *Apalone* spp. in trade for the period 2017–2000, virtually all recorded as captive-born *A. ferox*, with negligible numbers of *A. spinifera*. Less than 1% of the total was reported as wild-collected and no trade was reported in *A. mutica*. Most live exports were destined for

mainland China, followed by Macao SAR and Hong Kong SAR. Analysis of US data found an overall decrease of 93.5% in the annual number of directly exported live *A. ferox* specimens for commercial purposes from the USA from 2010 to 2020. The shift in declaration of specimens from captive-bred to captive-born may reflect a stricter interpretation of the former source category, requiring closed-cycle breeding with no or minimal involvement of wild-caught founder stock.

There is evidence of some illegal trade, although this appears to be generally at a low level.

Regulations regarding harvest and trade of the three species vary across their distribution range. *Apalone* spp. are protected in Canada. In the USA, states have their own regulations. At present, Mexico has no legal instruments in place for either species, but use of all wildlife has been managed through the Wildlife Management and Sustainable Use Units (UMAs) since 1996.

The genus *Apalone* is proposed for inclusion in Appendix II under the criteria in Annex 2a paragraphs A and B of Resolution Conf. 9.24 (Rev. CoP17), with the exception of the subspecies (*Apalone spinifera atra*), already included in Appendix I.

Analysis: The three *Apalone* species are all widespread in North America and all were most recently (in 2010) assessed as Least Concern on the IUCN Red List. Two of the species (*A. ferox* and *A. spinifera*) have been exported in large numbers in the past, chiefly to East Asia where they are widely consumed as food. The great majority of recent trade is in *A. ferox* and most exports are reported as captive-born within the USA, with very small numbers declared as wild-collected. Production of captive-born stock may to some extent depend on input from wild-collected animals, but information on numbers of animals collected for this purpose is lacking and there is little indication of depletion of wild populations through over-collection. No recent trade has been reported in *A. mutica* and very little in *A. spinifera*. Little information is available on current populations or any impact of wild collection. Given their widespread distribution, local abundance and the predominance of captive sourced specimens in exports it seems unlikely that any species of the genus meets the criteria for inclusion in Appendix II in Res. Conf. 9.24 (Rev. CoP17).

Transfer of Leith's Softshell Turtle *Nilssonia leithii* from Appendix II to Appendix I

Proponent: India

Summary: Leith's Softshell Turtle *Nilssonia leithii* is a large freshwater turtle endemic to Peninsular India, where it occurs in east–west flowing rivers and large reservoirs. The species was assessed as Critically Endangered on the IUCN Red List in 2018 on the basis of a very large (>90%) estimated population decline over the past 30 years and a projected continuing decline. *Nilssonia leithii* was included in Appendix II in 2013. It is one of five species of softshell turtle in the genus *Nilssonia*, all included in the appendices.

No current population estimates are available. Formerly relatively widespread in India from the Ganges Basin and Andhra Pradesh south to Karnataka and Tamil Nadu, *N. leithii* populations are now only known to occur with certainty in the Kali River (Karnataka) and the Manjira and Shivaram Wildlife Sanctuaries in Telengana.

The species has been harvested for its meat for both Indian and international food markets. However, the largely domestic trade documented in the 1980s and 1990s appears to have declined as the species has become scarcer, and there are no recent records of international trade.

National legislation prohibits the export for commercial purposes of wild specimens, and authorisation is required for any non-commercial use. The species is the subject of surveys and other conservation measures undertaken by Madras Crocodile Bank Trust and the Turtle Survival Alliance.

Analysis: *Nilssonia leithii* populations are thought to have undergone a marked decline over the past 30 years which is likely to be continuing. Known remaining populations are fragmented and believed small. The species appears to meet the biological criteria for inclusion in Appendix I in Res. Conf. 9.24 (Rev CoP17). There is little indication of current harvest, apparently because population levels are now too low to make hunting worthwhile, and no recent records of international trade exist. Export of wild specimens for commercial purposes is banned. It appears that the species is not currently affected by international trade, however any level of international demand is likely to be detrimental to the species. An Appendix I listing would reflect the national regulations in place for this species.

Inclusion of glass frogs Centrolenidae in Appendix II

Proponents: Argentina, Brazil, Costa Rica, Côte d'Ivoire, Dominican Republic, Ecuador, El Salvador, Gabon, Guinea, Niger, Panama, Peru, Togo, United States of America

Summary: Glass frogs, the collective term for species within the family Centrolenidae, are charismatic nocturnal frogs with large eyes and transparent skin inhabiting lowland and montane moist tropical forests. Their taxonomy is in a state of flux: currently, there are 12 genera in the Centrolenidae family with around 158 species widely distributed in 19 countries across Central and South America. The whole family Centrolenidae is proposed for inclusion in Appendix II. Twelve lead species (*Cochranella euknemos*, *Cochranella granulosa*, *Espadarana prosoblepon*, *Hyalinobatrachium aureoguttatum*, *Hyalinobatrachium fleischmanni*, *Hyalinobatrachium valerioi*, *Hyalinobatrachium iaspidiense*, *Hyalinobatrachium mondolfii*, *Sachatamia albomaculata*, *Sachatamia ilex*, *Teratohyla pulverata*, and *Teratohyla spinosa*) from five genera have been identified in trade and are proposed under criterion B in Annex 2a of Res. Conf. 9.24 (Res. Conf. CoP17), with the remaining species within the family proposed for inclusion as lookalikes under criterion A of Annex 2b.

There are no quantitative population data available for any species in the family. Of the 12 lead species, 10 are classified as Least Concern on the IUCN Red List (assessed 2019). *Hyalinobatrachium mondolfii* and *H. iaspidiense* were assessed in 2004 as Least Concern and Data Deficient respectively, but both will be classified as Least Concern in the IUCN Red List update in December 2022. All species listed as Least Concern are stated to have a wide distribution, and are therefore presumed to have large populations, with *H. iaspidiense* stated to be “not uncommon”. Five of the 12 species are assessed as having stable populations, five decreasing populations, and two with unknown population trends. None of the Red List assessments identify trade as a threat and only one (for *H. valerioi*) mentions the species is traded. The other species of glass frog include 10 species assessed as Critically Endangered, 34 as Endangered, 20 as Vulnerable, 11 as Near Threatened, 26 as Data Deficient, and 44 as Least Concern, while 11 species have not yet been assessed.

Glass frogs are in demand for international trade mainly as pets. Prices vary according to species, location and market type, and are reported to range from USD25–USD950. Global trade data are not available for any glass frog species. Four species (*Cochranella granulosa*, *Hyalinobatrachium fleischmanni*, *H. valerioi*, and *Teratohyla pulverata*) have records of live individuals being imported into the USA for commercial purposes. In total, around 9,200 live individuals of these four species were imported between 2010 to 2020. Almost all imports were reported since 2017. This may indicate increasing supply or demand but could also reflect improved reporting. Almost all (98%) of the trade was reported to be in captive-bred specimens, with records of around 200 wild-sourced individuals, all of which were *Hyalinobatrachium fleischmanni*. This species accounted for 84% of all reported imports, almost all of which originated from Nicaragua. This species has been assessed as having a stable population and is described by one expert as locally common. It was assessed as Least Concern by the IUCN in 2019 on account of its wide distribution and presumed large population, and its due to be reclassified as Least Concern in December 2022. No evidence for any other wild-sourced specimens of glass frog species was recorded in US trade data.

There is additional evidence of trade for all 12 lead species from a combination of seizures, surveys of online advertisements, and records from physical markets in Tokyo and Europe. Only one other species in the family, *N. grandisone*, is recorded as offered for sale online in one survey but the volume of individuals for sale and frequency of advertisements are not stated. This species was classified on the IUCN Red List as Least Concern in 2004 and is due to be reclassified as Least Concern in December 2022. Quantitative data are available for seizures reported from the proponents' research, with a total of 95 individuals from species including *Hyalinobatrachium valerioi*, *Sachatamia ilex*, and *Teratohyla spinosa*. The only other quantitative data are from a TRAFFIC report,

where surveyors observed 15 live individuals of species including *H. fleischmanni*, *H. valeroi*, *Teratohyla pulverata*, and *Cochranella granulosa* offered for sale at a reptile fair in Tokyo in 2020.

For most online advertisements the count of individuals offered for sale is not stated and in most cases it is difficult to clarify if the animals are captive-bred or wild-sourced. A survey by UNEP-WCMC identified a total of 28 advertisements, 12 of them for *Hyalinobatrachium fleischmanni*. The proponents state that they have found 75 advertisements in a preliminary analysis of species for sale online. A brief online survey for this analysis identified four pet stores hosted in the USA with glass frogs for sale, with all only offering *H. fleischmanni* and half of the stores explicitly stating the species was captive-bred. *Hyalinobatrachium fleischmanni* is the species most frequently offered for sale online. It is known that two other glass frog species can be bred in captivity (*H. valeroi* and *Sachatamia albomaculata*) and there is evidence of commercial captive breeding of glass frog species for export in Canada (*H. valeroi*), Nicaragua (species unknown), and Ecuador (*H. aureoguttatum*).

There is no evidence of large volumes involved for some of the 12 species identified as being in trade; for example, *Hyalinobatrachium iaspidiense* and *H. mondolfi* have been found advertised online in one EU survey, with unknown volumes offered for sale. Only six of the 12 species have any form of quantitative trade data to indicate potential volumes. For two of these, the only available data are from seizures with relatively low numbers reported seized: 63 individuals for *Sachatamia ilex* and 14 for *Teratohyla spinosa*.

In most range States, harvest of glass frogs from the wild for commercial trade is currently prohibited or requires a permit. Glass frog experts state that species within the Centrolenidae family cannot be easily distinguished based on morphological features, even by specialists.

Analysis: There are few quantitative data available on populations of glass frog species and no population estimates for the 12 species identified by the proponents as being in trade. Recent and forthcoming IUCN Red List assessments classify all these 12 species as Least Concern, with large population distributions. None of the Red List assessments identifies trade as a threat: identified threats are habitat loss, fragmentation, and disease.

There are limited data for trade volumes and no information on the impact of wild harvest on species' populations. US import data at the species level are only available for four out of the 12 species proposed under criterion B in Annex 2a of Res. Conf. 9.24 (Rev. CoP17), with the majority reported from captive sources. *Hyalinobatrachium fleischmanni* is the species most frequently reported in trade from all available sources and has the greatest volume of imports reported by the USA (averaging almost 2,000 a year for the period 2017–2020 with almost no trade from 2010 until that time). Almost all of those in trade were reported to be captive-bred. The 2019 Red List assessment for this species stated that it had a stable population with a wide distribution. A reassessment of the species for the Red List update in December 2022 will reaffirm the previous (2019) assessment of Least Concern. There is little information on trade in this species to other known markets for glass frogs in Europe and Asia. There is minimal evidence of large trade volumes for the other 11 species and minimal evidence of any trade in the other species in the family.

Based on available information it does not appear that any of the 12 lead species identified in the proposal or any other species in the family Centrolenidae are likely to meet the criteria for inclusion in Appendix II set out in Res. Conf. 9.24 (Rev. CoP17). Had any of the species been considered to meet the criteria in Annex 2a other species would meet the criteria in Annex 2aB as it appears that it is difficult to differentiate between species of glass frogs.

Inclusion of Lemur Leaf Frog *Agalychnis lemur* in Appendix II with a zero annual export quota for wild-taken specimens traded for commercial purposes

Proponents: Colombia, Costa Rica, European Union, Panama

Summary: The Lemur Leaf Frog *Agalychnis lemur* is a moderate-sized, canopy-dwelling nocturnal green tree frog that inhabits sloping areas in humid lowland and montane primary forests in Colombia, Costa Rica, and Panama. Females have an average clutch size of 22 eggs in the wild, although clutches of 15 to 70 eggs have been observed in captivity.

Overall extent of occurrence is estimated to be around 80,000 km². The species was assessed by the IUCN Red List in 2019 and classified as Critically Endangered due to an estimated population decline of 80–95% in three generations since 1998, ascribed to habitat loss and potentially the disease chytridiomycosis. The current population is extremely fragmented and restricted mainly to western and central Panama and three reserves in Costa Rica, with the status of subpopulations in Colombia unknown and thought to be rare.

The genus *Agalychnis* was included in Appendix II at CoP15 in 2010. At that time the CITES Standard Reference, Frost (2004), recognised five species. There are currently 14 recognised species in the genus, some of which, including *A. lemur*, were considered to belong to other genera at CoP15 and therefore not included in the original listing. *A. lemur* was not recognised as belonging to this genus until 2010 after CoP15, having previously been included in the genera *Hylomantis* and (before 2005) in *Phyllomedusa*.

No global international trade data exist for this species. US data for this taxon comprised imports for commercial purposes of over 150 live, captive-bred individuals between 2008 and 2020, mostly from non-range States. Around 800 wild-sourced *Agalychnis* individuals, not identified to the species level, were additionally directly exported from range States of *A. lemur* between 2000 and 2014, with most of these exported from Panama (87%) for commercial purposes in 2001.

There are no clear reports of illegal trade in or seizures of the species but there is evidence of demand through the presence of some online advertisements. However, most explicitly state that individuals offered are captive-bred. There is demand for similar species demonstrated through over 46,000 exports of *A. callidryas* between 2010 and 2020 reported in the CITES Trade Database. Trade is not highlighted as a threat to the species in the IUCN Red List assessment and although the assessors indicate that there is demand for the species as pets, it is not clear if individuals are currently being collected from the wild for international trade.

The species is protected from wild harvest for commercial purposes in Costa Rica and Colombia. In Panama the use and transport of wildlife, including *A. lemur*, is prohibited without prior authorisation from the National Directorate of Protected Areas and Wildlife.

Agalychnis lemur is distinguishable from other *Agalychnis* species due to a lack of webbing between its toes, and there are identification guides available for all species in this genus. The species is proposed for listing in Appendix II with a zero annual export quota for wild-taken specimens traded for commercial purposes.

Given recent taxonomic changes, it may be prudent to assess the other species newly reclassified in the genus against CITES listing criteria, particularly as some species are listed as threatened on the IUCN Red List (*A. medinae* has been classified as Endangered).

Analysis: *Agalychnis lemur* has undergone a marked recent population decline in the wild, primarily due to habitat loss. It was assessed as Critically Endangered on the IUCN Red List in 2019. The species already meets the biological criteria for inclusion in Appendix I.

Although *Agalychnis* frogs are popular in the pet trade, there is little evidence of international trade in wild-sourced individuals of this species. However, given the vulnerability of this species to any degree of wild harvest, it meets the criteria for inclusion in Appendix II Criterion A of Annex 2a of Res. Conf. 9.24 (Rev.CoP17). The inclusion of a zero annual export quota for wild-taken specimens traded for commercial purposes would afford the species equivalent protection to an Appendix I listing. Any amendment to this zero quota would need the approval of a future Conference of the Parties.

Inclusion of Laos Warty Newt *Laotriton laoensis* in Appendix II with a zero export quota for wild-taken specimens traded for commercial purposes

Proponent: European Union

Summary: The Laos Warty Newt *Laotriton laoensis* is a large strikingly marked newt endemic to Lao People's Democratic Republic (PDR), where it inhabits pools at the head of shallow streams at elevations of over 1,000 m. It has a restricted range with a maximum estimated extent of occurrence of 4,800 km², likely in relatively isolated subpopulations. Captive individuals take around four years to reach sexual maturity; this is predicted to take longer in the wild. The species was initially assigned to the genus *Paramesotriton* and named *Paramesotriton laoensis* before being transferred to the monotypic genus *Laotriton* in 2009. The genus *Paramesotriton* was listed in Appendix II in 2019 at CoP18. Commercial trade of *Laotriton laoensis* (as *Paramesotriton laoensis*) has been prohibited in Lao PDR since 2008.

The species was classified as Endangered on the IUCN Red List in 2013 due to its restricted range, continued declines in habitat quality, and extremely restricted population. It was inferred that the species had experienced a population decline of at least 50% in the ten years prior to 2013. There are no quantitative data available on the population size for the species across its distribution. The species is likely distributed in relatively isolated subpopulations as it only occurs in pools at the headwaters of streams, but it can be locally abundant in these; one available population study (2012) in a single area estimated 1,200 individuals in a stream of approximately 5 km.

Overharvesting, mainly for international trade, is stated to be the primary threat to the species. Other factors include habitat loss and fragmentation, and harvest of much smaller volumes for domestic consumption as food and medicine. No populations are known to occur in protected areas.

Live individuals are in demand for international trade, mainly as pets amongst hobbyists in countries including the USA, the UK, Germany, Japan, and Spain. This is thought to be the primary cause of harvest but there is evidence of international trade in dried specimens or specimens soaked in alcohol for use in traditional medicine. The species is vulnerable to overharvesting when populations accumulate in large numbers in accessible pools during the breeding season.

No global trade data exist. The EU recorded exports of 41 live individuals of unknown source in 2013 for commercial purposes from Germany to Japan. Wild-sourced individuals have been observed for sale at fairs in Germany. US data recorded imports of 252 live wild-sourced individuals for commercial purposes from Thailand in 2011. As the species is endemic to Lao PDR, it seems likely that these individuals were first exported (illegally) from Lao PDR into Thailand. There is anecdotal evidence of markets in Thailand where individuals are offered for sale and no evidence of captive breeding of the species in Thailand could be found. A seizure of 120 individuals dried for medicinal purposes from Lao PDR was made at an airport in the USA in 2005. Some exchange of scientific specimens has also been recorded by the USA.

Limited numbers of individuals have been observed offered for sale online (~20 adverts, minimum 65 individuals from 2011–2020). There were anecdotal reports from local Lao residents that over 400 individuals of the species had been offered for sale to collectors from Europe, Japan, and China in domestic markets in 2008 and 2009. More recently, in 2015, there were reports of traders placing orders with local residents for the purchase of the species in unknown quantities at another domestic market. Prices for live individuals vary from an average of USD100 in online advertisements to USD1 in markets in Lao PDR, although there is one instance of a captive-bred juvenile offered for sale online for USD250.

The species is captive-bred by zoos in Europe and North America and there is thought to be a

sufficient supply of offspring in Europe from private captive breeders. In Lao PDR, there are no captive breeding facilities.

Analysis: The endemic *Laotriton laoensis* is classified as Endangered due to its limited distribution and very restricted population, believed to have undergone a marked decline. Although evidence of international trade in wild-sourced individuals of this species is largely anecdotal, it is clear that there is international demand. Recent information on the impact of trade on the wild population is lacking; however, large population accumulations in the breeding season make them vulnerable to overharvesting and the species may already be close to meeting the biological criteria for inclusion in Appendix I. The species therefore appears to meet the criteria for inclusion in Appendix II under Criterion A of Annex 2a, in Res. Conf. 9.24 (Rev.CoP17). A zero-export quota of wild specimens for commercial purposes would afford the species equivalent protection to an Appendix I listing and reflect the prohibition of trade from Lao PDR.

Inclusion of Requiem Sharks (Family Carcharhinidae) in Appendix II

Proponents: Bangladesh, Colombia, Dominican Republic, Ecuador, El Salvador, European Union, Gabon, Israel, Maldives, Panama, Senegal, Seychelles, Sri Lanka, Syrian Arab Republic, United Kingdom of Great Britain and Northern Ireland

Summary: Two members of the family Carcharhinidae are currently included in Appendix II (*Carcharhinus longimanus*, included at CoP16 and *Carcharhinus falciformis* at CoP17). The remaining 54 members of the family (in twelve genera) are now proposed for inclusion in Appendix II; 19 in accordance with Article II, paragraph 2(a) of the Convention (from here onwards referred to as lead species), and all remaining species in accordance with Article II paragraph 2(b) (as lookalike species). The species included in this Proposal occur in tropical to temperate oceans and are found in coastal, pelagic, and riverine environments. Most of the lead species are found inshore along continental and insular shelves in relatively shallow water (< 150 m), although some (*C. obscurus* and *C. signatus*) are semi-oceanic and found at depths of 500–600 m.

All lead species proposed are known, or inferred, to have low productivity. Most species reach a maximum size of under 200 cm, although *C. obscurus* reaches 420 cm. The frequency of reproduction is typically annual to biennial, with most species producing between 2 and 10 pups per litter (*C. signatus* can produce up to 15 pups). The estimated three generation period is under 30 years for most of these species, although *C. plumbeus* (60–78 years) and *C. obscurus* (90–114 years) are exceptions.

All members of the family Carcharhinidae are subject to targeted and incidental catch by commercial, artisanal, and recreational fishers. Their fins and, increasingly their meat, feature prominently in international trade. Species in the family together comprise one-third of the annual global chondrichthyan (cartilaginous fish) catch and two-thirds of the shark fin trade of coastal sharks. One species alone (*Prionace glauca*, not a lead species) was estimated to make up one sixth of all shark landings in 2017 and may now dominate the international shark meat trade. Other products such as liver oil, skin, and jaws are also used. While some species are common in trade, other carcharhinids are extremely rare and have not been found in surveys of large fin trading hubs.

Three recent fin surveys in Hong Kong SAR and Guangzhou, China, confirmed the dominance of the family Carcharhinidae in the fin trade. *Prionace glauca*, *Carcharhinus falciformis*, and the Blacktip complex (*C. limbatus*, *C. amblyrhynchoides*, *C. leiodon*, and *C. tilstoni*) constituted the top three most-sampled species or species groups in Hong Kong SAR in 2014–2015. Another study in Hong Kong SAR and Guangzhou in 2015–2017, found that *P. glauca*, *C. falciformis*, and *Carcharhinus* spp. constituted the top three most-sampled species or species groups. A recent survey of small, low-value fins from 2018–2019 in Hong Kong SAR reported *Rhizoprionodon acutus*, *C. sorrah*, and the Blacktip complex as three of the top four most sampled species or species groups.

All 19 lead species are classified as either Endangered or Critically Endangered on the IUCN Red List. Twelve (*Carcharhinus acronotus*, *C. amblyrhynchos*, *C. dussumieri*, *C. leiodon*, *C. obscurus*, *C. perezi*, *C. plumbeus*, *C. signatus*, *Lamiopsis temmincki*, *L. tephrodes*, *Nasolamia velox*, and *Negaprion acutidens*) are globally listed as Endangered due to steep recent population reductions (>50% over three generations) mainly due to overfishing. Seven species (*C. borneensis*, *C. cerdale*, *C. hemiodon*, *C. porosus*, *C. obsoletus*, *Glyphis gangeticus*, and *Isogomphodon oxyrhynchus*) are globally listed as Critically Endangered resulting from recent population reductions of >80% over three generations inferred from overfishing and habitat loss. Four of these (*C. borneensis*, *C. hemiodon*, *C. obsoletus*, and *Glyphis gangeticus*) are thought to be locally, regionally or globally extinct throughout much or all of their range.

Species-specific reductions have been estimated from three main sources: fisheries agency stock assessments (*C. acronotus*, *C. obscurus*, *C. plumbeus*): Global FinPrint spatial depletion estimates on coral reef habitats (*C. amblyrhynchos*, *C. perezi*): or catch landings and effort data (*C. cerdale*,

C. dussumieri, *C. leiodon*, *C. porosus*, *C. signatus*, *Isogomphodon oxyrinchus*, *Lamiopsis temminckii*, *L. tephrodes*, *Nasolamia velox*, and *Negaprion acutidens*).

Legislation and regulations are in place in some countries for some of the lead species in this proposal; particularly for *C. obscurus*, *Glyphis gangeticus*, and several species found in Brazilian waters (*C. perezii*, *C. plumbeus*, *C. signatus*, and *Isogomphodon oxyrinchus*). A recent study examined management risk for 18 carcharhinid species and reported that the best managed were *C. acronotus*, *C. porosus*, and *C. tilstonii* (not a lead species), while the most poorly managed were *C. leiodon*, *C. dussumieri*, and *C. melanopterus* (not a lead species). Beyond a limited set of management measures, it is assumed that most species in this proposal are unmanaged throughout their respective ranges. A recent study found that the family Carcharhinidae is inadequately managed worldwide, both by nations and Regional Fisheries Management Organizations (RFMOs), with only half of the necessary management in place.

While fins are the most conspicuous and widely recognised shark products in trade, other products are also used, including meat, oil, skins, and jaws. The meat trade is recognised as a growing threat to many shark and ray species, although there are limited data on species composition. Genetic identification is necessary to identify traded meat to species level, although this is not possible within the Blacktip Complex. While identification of attached fins is possible, dried fins (the form in which fins are traded) from different species resemble those of other species of shark. Trained personnel can identify many dried fins to species level; however, it can be difficult for untrained people to do this. Species included in this proposal were considered lookalikes based primarily on “similar species” that shared dried fin characteristics.

Analysis: The family Carcharhinidae dominates the global chondrichthyan catch and fin trade. Declines are consistent with the indicative guidelines for inclusion in Appendix II of commercially exploited low-productivity aquatic species suggested in the footnote to Annex 5 of Resolution Conf. 9.24 (Rev. CoP17) for 11 of the 19 lead species identified in the current proposal (*C. borneensis*, *C. cerdale*, *C. hemiodon*, *C. leiodon*, *C. obscurus*, *C. obsoletus*, *C. plumbeus*, *C. porosus*, *Glyphis gangeticus*, *Isogomphodon oxyrinchus*, and *Nasolamia velox*). While there was no evidence of international trade in fins of *C. borneensis*, *C. cerdale*, *C. hemiodon*, *C. obsoletus*, and *Isogomphodon oxyrinchus*, these are exceptionally rare and possibly extinct, but have the potential to enter international trade if caught and may already meet the criteria for inclusion in Appendix I.

Available information for four of the 19 species (*C. acronotus*, *C. amblyrhynchos*, *C. dussumieri*, and *Negaprion acutidens*), indicates that at present these do not meet the criteria in 2a A when following the footnote in Annex 5 of the Resolution. However, evidence of ongoing declines and the presence of fins in international trade of these and *Lamiopsis temminckii* implies that regulation is needed to ensure that the harvest is not reducing the wild populations of these to a level at which their survival may be threatened by continued harvesting or other influences, indicating that these species meet the criteria for inclusion in Appendix II in Annex 2aB of the Resolution.

Two species, *C. signatus* and *C. perezii*, did not appear to meet the Annex 2a criteria for inclusion in Appendix II as there was no evidence of these species in international trade and estimated declines did not meet the indicative guidelines for inclusion in Appendix II of commercially exploited low-productivity aquatic species suggested in the footnote to Annex 5. However, both species are declining globally. These species meet the criteria for listing in Annex 2bA, based on the difficulty of distinguishing their fins from at least one of the species that met Annex 2aA in this proposal, as well as two species that are already included in Appendix II (*Sphyrna mokarran* and *Carcharhinus falciformis*).

When considering all other (non-lead) species in the family Carcharhinidae, 27 species have been assessed for the IUCN Red list as Near Threatened or Vulnerable (declining in some or all areas of their range), and there was evidence of these species in international trade (these were: *Carcharhinus altimus*, *C. albimarginatus*, *C. amblyrhynchoides*, *C. amboinensis*, *C. brachyurus*, *C. brevipinna*, *C. isodon*, *C. leucas*, *C. limbatus*, *C. macloti*, *C. melanopterus*, *C. sealei*, *C. sorrah*, *Glyphis garricki*, *Glyphis glyphis*, *Loxodon macrorhinus*, *Negaprion brevirostris*, *Prionace glauca*,

Rhizoprionodon acutus, *R. lalandii*, *R. longurio*, *R. oligolinx*, *R. porosus*, *R. taylori*, *Scoliodon laticaudus*, *S. macrorhynchus*, and *Triaenodon obesus*). These species may also meet the criteria for inclusion in Appendix II in Annex 2aB in that regulation is needed to ensure that the harvest of specimens from the wild is not reducing the wild populations to a level at which their survival may be threatened by continued harvesting or other influences.

Some 16 of these species (*Carcharhinus altimus*, *C. albimarginatus*, *C. amboinensis*, *C. brevipinna*, *C. leucas*, *C. limbatus*, *C. sorrah*, *Negaprion brevirostris*, *Prionace glauca*, *Rhizoprionodon acutus*, *R. lalandii*, *R. longurio*, *R. oligolinx*, *R. porosus*, *R. taylori*, and *Triaenodon obesus*) and two additional species (*C. galapagensis* and *Rhizoprionodon terraenovae*) also have fins that are difficult to distinguish from some of the lead species above as well as species already included in the Appendices (*Sphyrna mokarran* and *Carcharhinus falciformis*). These appear to meet the (lookalike) criteria for listing in Annex 2bA.

Seven species, *C. cautus*, *C. coatesi*, *C. fitzroyensis*, *C. humani*, *C. tjtjtjot*, *C. tilstoni*, and *Lamiopsis tephrodes* clearly did not meet criteria for listing in either Annex 2a or Annex 2b. *Lamiopsis tephrodes* (a lead species) is listed as Endangered, *C. cautus*, *C. coatesi*, *C. fitzroyensis*, and *C. tilstoni* were globally listed as Least Concern, *C. tjtjtjot* was globally listed as Vulnerable, and *C. humani* as Data Deficient. Of these only *C. coatesi*, *C. fitzroyensis*, and *C. tilstoni* have been detected in international trade but harvest for trade is not considered a major conservation concern.

In summary, the great majority of species in the family Carcharhinidae appear to meet the criteria for inclusion in Appendix II, either because regulation is needed to ensure that the harvest is not reducing the wild populations to a level at which their survival may be threatened by continued harvesting or other influences (Annex 2a of the Resolution) or as lookalikes (Annex 2b of the Resolution). Inclusion of the remaining seven species in the Appendices would facilitate compliance.

Summary Table

Table 1. Scientific and common names of the family Carcharhinidae. Criteria met in this Analysis of Resolution 9.24 (Rev. CoP17) are indicated in the three columns to the right.

	Lead Species		Analysis Criteria Met		
	Scientific name	Common name	Annex 2aA	Annex 2aB	Annex 2bA
1	<i>Carcharhinus acronotus</i>	Blacknose Shark		✓	
2	<i>Carcharhinus amblyrhynchus</i>	Grey Reef Shark		✓	✓
3	<i>Carcharhinus borneensis</i>	Borneo Shark	✓		
4	<i>Carcharhinus cerdale</i>	Pacific Smalltail Shark	✓		
5	<i>Carcharhinus dussumieri</i>	Whitecheek Shark		✓	
6	<i>Carcharhinus hemiodon</i>	Pondicherry Shark	✓		
7	<i>Carcharhinus leiodon</i>	Smoothtooth Blacktip Shark	✓	✓	
8	<i>Carcharhinus obscurus</i>	Dusky Shark	✓	✓	✓
9	<i>Carcharhinus obsoletus</i>	Lost Shark	✓		
10	<i>Carcharhinus perezi</i>	Caribbean Reef Shark			✓
11	<i>Carcharhinus plumbeus</i>	Sandbar Shark	✓	✓	✓
12	<i>Carcharhinus porosus</i>	Smalltail Shark	✓	✓	
13	<i>Carcharhinus signatus</i>	Night Shark			✓
14	<i>Glyphis gangeticus</i>	Ganges Shark	✓	✓	
15	<i>Isogomphodon oxyrinchus</i>	Daggernose Shark	✓		
16	<i>Lamiopsis temminckii</i>	Broadfin Shark		✓	
17	<i>Lamiopsis tephrodes</i>	Borneo broadfin Shark			
18	<i>Nasolamia velox</i>	Whitenose Shark	✓		
19	<i>Negaprion acutidens</i>	Sharptooth Lemon Shark		✓	
Other Carcharhinidae					
	<i>Carcharhinus altimus</i>	Bignose Shark		✓	✓
	<i>Carcharhinus albimarginatus</i>	Silvertip Shark		✓	✓
	<i>Carcharhinus amblyrhynchoides</i>	Graceful Shark		✓	

	<i>Carcharhinus amboinensis</i>	Pigeye Shark		✓	✓
	<i>Carcharhinus cautus</i>	Nervous Shark			
	<i>Carcharhinus brachyurus</i>	Bronze Whaler		✓	
	<i>Carcharhinus brevipinna</i>	Spinner Shark		✓	✓
	<i>Carcharhinus coatesi</i>	Coates's Shark			
	<i>Carcharhinus fitzroyensis</i>	Creek Whaler			
	<i>Carcharhinus galapagensis</i>	Galapagos Shark			✓
	<i>Carcharhinus humani</i>	Human's Whaler Shark			
	<i>Carcharhinus isodon</i>	Finetooth Shark		✓	
	<i>Carcharhinus leucas</i>	Bull Shark		✓	✓
	<i>Carcharhinus limbatus</i>	Blacktip Shark		✓	✓
	<i>Carcharhinus macloti</i>	Hardnose Shark		✓	
	<i>Carcharhinus melanopterus</i>	Blacktip Reef Shark		✓	
	<i>Carcharhinus sealei</i>	Blackspot Shark		✓	
	<i>Carcharhinus sorrah</i>	Spottail Shark		✓	✓
Other Carcharhinidae					
	<i>Carcharhinus tilstoni</i>	Australian Blacktip Shark			
	<i>Carcharhinus tjtjtjot</i>	Indonesian Whaler			
	<i>Glyphis garricki</i>	New Guinea River Shark		✓	
	<i>Glyphis glyphis</i>	Speartooth Shark		✓	
	<i>Loxodon macrorhinus</i>	Sliteye Shark		✓	
	<i>Negaprion brevirostris</i>	Lemon Shark		✓	✓
	<i>Prionace glauca</i>	Blue Shark		✓	✓
	<i>Rhizoprionodon acutus</i>	Milk Shark		✓	✓
	<i>Rhizoprionodon lalandii</i>	Brazilian Sharpnose Shark			✓
	<i>Rhizoprionodon longurio</i>	Pacific Sharpnose Shark		✓	✓
	<i>Rhizoprionodon oligolinx</i>	Grey Sharpnose Shark		✓	✓
	<i>Rhizoprionodon porosus</i>	Caribbean Sharpnose Shark		✓	✓
	<i>Rhizoprionodon taylori</i>	Australian Sharpnose Shark		✓	✓
	<i>Rhizoprionodon terraenovae</i>	Atlantic Sharpnose Shark			✓
	<i>Scoliodon laticaudus</i>	Spadenose Shark		✓	
	<i>Scoliodon macrorhynchus</i>	Pacific Spadenose Shark		✓	
	<i>Triaenodon obesus</i>	Whitetip Reef Shark		✓	✓

Inclusion of Hammerhead Sharks Family Sphyrnidae in Appendix II

Proponents: Brazil, Colombia, Ecuador, European Union, Panama

Summary: Three members of the family Sphyrnidae were listed in Appendix II at CoP16. The remaining six members of the family are now proposed for inclusion in Appendix II; *Sphyrna tiburo* in accordance with Article II, paragraph 2(a) of the Convention, and all remaining species (five are named by the proponents), as well as any other yet to be identified species of the Family Sphyrnidae, as lookalikes. The species included in this proposal occur in coastal warm temperate and tropical continental shelves between 42°N and 34°S to depths of 100 m. *Sphyrna tiburo* and *S. media* are found in both the western Atlantic and eastern Pacific Oceans. *Sphyrna tudes* occurs only in the western central and southwestern Atlantic and *S. corona* occurs only in the Eastern Central and Southeast Pacific. *Sphyrna gilberti* is known to occur in the northwestern Atlantic and possibly through the western central and southwestern Atlantic, although its distribution is uncertain. *Eusphyra blochii* is an Indo-West Pacific species that ranges from the Arabian Gulf through southern Asia to northern Australia and Papua New Guinea.

Sphyrna tiburo is one of the most productive shark species; maximum age, age-at-maturity, size-at-maturity, and offspring size increase with increasing latitude. Males mature at 2 and 4 years and females between 2–3 and 6–7 years, both reaching a maximum age of 5–6 and 6–18 years, with the older ages at higher latitudes. This species has a litter size of 4–16 pups following one of the shortest known gestation periods observed in sharks lasting 4.5–5 months. *Sphyrna media*, *S. tudes*, and *S. corona* are suspected to have similar life history parameters to *S. tiburo* given relatively similar geographic distribution and maximum size, although *S. tudes* has a 10-month gestation period (producing 5–12 pups per litter) and *S. corona* produces only two pups per litter. *Eusphyra blochii* has much lower productivity. The maximum age is estimated to be 21 years with males maturing at 5.5 years and females maturing at 7.2 years. The gestation period is 7–11 months with a litter size of 6–25 pups. When considering the footnote on commercially exploited marine species in Annex 5 of Res. Conf. 9.24 (Rev. CoP17), all Sphyrnidae can be regarded as having low productivity.

All members of the family Sphyrnidae are subject to targeted and incidental catch by commercial, artisanal, and recreational fishers. Due to the coastal nature of *Sphyrna tiburo* and *Eusphyra blochii*, *S. tudes*, *S. corona*, *S. media*, and (probably) *S. gilberti*, these species are often caught in gillnets, demersal trawls, and longlines with no deepwater refuge. They are used for their meat, which is typically consumed domestically, and their fins that are traded internationally. Fin-trimming surveys in Hong Kong SAR from 2014–2015 found that *S. tiburo* and *E. blochii* comprised 0.06% and 0.02% of samples respectively. Another study in Hong Kong SAR and Guangzhou found that *S. tiburo* and *S. tudes* comprised 0.04% and 0.03% of samples respectively; *E. blochii* comprised 0.01% in Hong Kong SAR and 0.06% of samples in Guangzhou. A recent study in Hong Kong SAR that surveyed retail markets for small, low-value fins in 2018 and 2019 reported that *S. tiburo* and *E. blochii* each comprised 0.4% of samples. None of these studies reported *S. corona*, *S. media*, or *S. gilberti* in samples, but fins from these species may also be traded internationally.

The most detailed information on population trends is available for *Sphyrna tiburo*. In the Northwest Atlantic (Atlantic Ocean, Gulf of Mexico, and US Caribbean Sea), the stock was last assessed in 2013 as not overfished and not experiencing overfishing having recovered due to management; the current status of the stock in the region is unknown. Since the previous stock assessment, two distinct stocks have been identified in US waters (Gulf of Mexico and Atlantic) and the next stock assessment will examine each separately. Further south in the western central and southwestern Atlantic *S. tiburo* is among the most caught sharks in Quintana Roo (Mexico), Panama, and Venezuela. It has experienced a substantial population reduction in Caribbean Colombia and Brazil (where it is now considered regionally extinct off Rio de Janeiro). In the eastern central and southeastern Pacific, this formerly abundant species has experienced significant reductions and is now considered locally extinct in the Gulf of California. It has not been observed since the 1980s in Central America, and is

rare in South America.

Less information is available for *Sphyrna media*, *S. tudes*, *S. corona*, and *Eusphyrna blochii*, and no species-specific data are available for *S. gilberti*. *Sphyrna media* was historically abundant in Mexico, but it is now considered locally extinct in the Gulf of California and possibly in Pacific Central America (last recorded in the 1980s). In the remainder of its eastern central and southeastern Pacific range *S. media* is absent or exceptionally rare. In Atlantic South America, *S. media* was formerly common or even abundant in the 1970s but is now rarely encountered. Little species-specific information is available for *S. tudes*, but intensive fisheries throughout its range suggest population reductions. Similarly, intensive, and largely unmanaged fisheries exist throughout the range of *S. corona*, although the species remains relatively common in Pacific Colombia. There is no species-specific information available for *E. blochii*, except for Australian gillnet fisheries where the species is rarely caught and believed to be relatively stable. In South-East Asia and elsewhere in the Indo-West Pacific, *E. blochii* is inferred to have experienced population reductions due to intensive and largely unmanaged fisheries, and evidence of significant reductions in other shark and ray populations throughout the region.

Sphyrna tiburo and *Eusphyrna blochii* are listed globally as Endangered on the IUCN Red List. *Sphyrna media*, *S. tudes*, and *S. corona* are all globally listed as Critically Endangered, having undergone population reductions assessed as over 80% over three generations, inferred on the basis of overfishing and habitat degradation. *S. gilberti* has been assessed as Data Deficient.

In the US, *Sphyrna tiburo* is managed under the Consolidated Atlantic Highly Migratory Species Federal Management Plan, which was initially developed in 2006 and amended in 2021. Management measures in the plan include seasonal closures and quotas. In addition to species-specific management in the United States, state gillnet bans probably also provide protection for this species. Atlantic Mexico has month-long shark fishery closed seasons applicable to *S. tiburo*. Several South American and Caribbean countries have general shark finning prohibitions, closed seasons for shark fisheries or are shark sanctuaries. There are no species-specific management measures in place for *S. gilberti* and *Eusphyrna blochii* although both species may indirectly benefit from other more general management measures for fisheries in their respective ranges.

Within the family Sphyrnidae identification of the principal products in trade (dried fins) is challenging given the similarities of small-to-moderate sized dorsal and pectoral fins.

Analysis: Overexploitation has led to significant population reductions for all species within the family Sphyrnidae. Declines observed for *Sphyrna tiburo* overall are not consistent with the indicative guidelines for inclusion in Appendix II of commercially exploited medium-to-low productivity aquatic species suggested in the footnote to Annex 5 of Res. Conf. 9.24 (Rev. CoP17). However, the widespread disappearance of this species from significant parts of its range in the Pacific and South Atlantic portions of its range, combined with evidence that fins are traded internationally, imply that regulation of trade is needed to ensure that the harvest of specimens is not reducing the wild population of *S. tiburo* to a level at which its survival might be threatened by continued harvesting or other influences. This indicates that the species meets the criteria for inclusion in Appendix II in Annex 2aB of the Resolution. The recovery of the species in the Northwest Atlantic portion of its range indicates that *S. tiburo* is very responsive to management, which has had a significant effect on the health of its populations.

The Critically Endangered *Sphyrna corona*, *S. media*, and *S. tudes* likely meet or are near to meeting the criteria for inclusion in Appendix II in Annex 2aA of Res. Conf. 9.24 (Rev. CoP17), taking into account the footnote to Annex 5 for medium-to-low productivity (*S. media* and *S. tudes*) and low productivity (*S. corona*) commercially exploited aquatic species. While severe reductions in landings have been reported in some parts of the range of *Eusphyrna blochii*, in other parts population reductions are assumed to be minimal. It is unclear therefore whether this species does or does not meet the criteria for inclusion in Appendix II in Annex 2a.

Many species in the family Sphyrnidae are harvested for international trade of their fins, including *Sphyrna tiburo*, *Eusphyrna blochii*, and *S. tudes* and are present in international shark fin trade hubs.

Although data are lacking it is suspected that fins of *S. corona*, *S. media*, and *S. gilberti* are also traded internationally.

Small-to-moderate sized dorsal and pectoral fins of all members of the family Sphyrnidae resemble each other. *Sphyrna tiburo*, *S. tudes*, *S. corona*, *S. media*, and *S. gilberti* meet the criteria for inclusion in Appendix II in Annex 2 bA of Res. Conf. 9.24 (Rev. CoP17) based on the difficulty of distinguishing their fins from those of juvenile Appendix II listed *S. lewini* and *S. zygaena*. There is difficulty distinguishing the fins of *Eusphyra blochii* from those of juvenile Appendix II listed *S. mokarran* and *S. zygaena*, indicating that this species too meets the criteria for inclusion in Appendix II.

It appears therefore that all species in the Family Sphyrnidae meet the criteria for inclusion in Appendix II either under Annex 2a or 2b of the Resolution.

Inclusion of the following species of Freshwater Stingray in Appendix II: *Potamotrygon wallacei*, *P. leopoldi*, *P. albimaculata*, *P. henlei*, *P. jabuti*, *P. marquesi*, and *P. signata*

Proponent: Brazil

Summary: *Potamotrygon* is a genus of South American freshwater stingrays with complex taxonomy, currently recognised as comprising around 30 species. The Brazilian populations of *Potamotrygon* spp. and eight Colombian species were listed in Appendix III in 2017. *Potamotrygon wallacei* and *P. leopoldi* are now proposed for inclusion in Appendix II in accordance with Article II, paragraph 2(a) of Res. Conf. 9.24 (Rev. CoP17), and *P. albimaculata*, *P. henlei*, *P. jabuti*, *P. marquesi*, and *P. signata* in accordance with Article II paragraph 2(b) as lookalikes.

The species proposed are neotropical freshwater stingrays that are endemic to the Amazon and Parnaíba River Basins and are predominantly found in water shallower than 3 m. *Potamotrygon leopoldi* is endemic to the Xingu River drainage in the lower Amazon Basin, in Mato Gross and Pará states, Brazil. *Potamotrygon wallacei* is endemic to the middle Rio Negro drainage in Amazonas State, Brazil. *Potamotrygon leopoldi* and *P. wallacei* are considered to have low productivity. Age at maturity is not known for all species, however the youngest age reported for females is two years for *P. wallacei*, while the oldest is six to seven years for *P. leopoldi* females, while *P. leopoldi* males mature at four to five years. Female *P. wallacei* produce two embryos while *P. leopoldi* produce an average of 4.84 pups. Gestation length ranges from three to four months. *Potamotrygon leopoldi* and *P. wallacei* have annual reproductive cycles, often corresponding with cyclic hydrologic conditions. Maximum age is estimated to be five years for *P. wallacei*, ten years for *P. albimaculata* and *P. jabuti*, and 14 years for *P. leopoldi*.

Freshwater stingrays, including other *Potamotrygon* species not covered by this proposal, have been in demand for the ornamental aquarium trade since the late 1970s. The black rays (typically species with white or pale markings on a black background here represented by *P. leopoldi*, *P. albimaculata*, and *P. henlei*, and sometimes *P. jabuti*, a variable species) are the most sought-after ornamental freshwater stingrays in all ornamental markets (Asia, Europe, and North America). *Potamotrygon leopoldi* is the most valued species exported and the most popular stingray in Asian countries, followed by *P. jabuti*. *Potamotrygon leopoldi* is also the most popular stingray in the United States of America (USA) and Canada. This species was intensively fished for the international ornamental aquarium trade from the 1990s to 2006. Adult *P. leopoldi* were first captured for breeding stock in Asia, the European Union, and North America in the early 2000s, with captures intensifying between 2005 and 2011. Hybridisation involving these and other *Potamotrygon* species (mostly *P. albimaculata* and *P. jabuti*) began in 2000 by Asian breeders mainly in Thailand. Some of these hybrids are considered more attractive and of higher value than wild-caught individuals, resulting in a reduction in demand for the latter. Trade data from the USA (2011–2020) show that most imports (94%) were captive-bred, mainly from Thailand (80%). CITES data since the Appendix III listing show similar patterns. There is also evidence of some illegal trade. *Potamotrygon leopoldi* is the most encountered species in Brazil's official record of stingray seizures. Over half of all freshwater stingray seizures between 2002 and 2018, comprised *P. leopoldi* (55%), although actual quantities are unknown. Additionally, 30% of stingray individuals exported from Amazonas State and reported as *P. motoro* (an Appendix III listed species) were *P. leopoldi*. No recent seizure records were reported for *P. wallacei*.

Threats include capture for ornamental trade, habitat loss and degradation caused by fire in flooded-forest habitat, anthropogenic development such as agricultural expansion, ranching, mining, hydroelectric powerplant development, as well as persecution and local consumption by humans. Fishing mortality combined with other anthropogenic activities has led to *P. leopoldi* population reductions. Overall, international demand for wild-caught individuals for the ornamental trade has declined due to captive breeding facilities supplying the aquarium market. *P. wallacei* is said to be

more difficult to breed in captivity and therefore the shift in supply for the aquarium market seen for *P. leopoldi* may not be the same for *P. wallacei*. However, demand for this species is apparently lower than for other species and quotas set are not being fully used according to export records.

IUCN Red List assessments for *P. wallacei* and *P. leopoldi* are currently being completed and are pending review. Both are provisionally assessed as Vulnerable with estimated population reductions of 33% and 30–49% over the past three generations, respectively. Population trend data for these species vary. One study of *P. leopoldi* in a harvested area detected a marked decrease in catch rates between 2004/5 and 2021; other surveys have detected no clear trends. Eleven out of 14 separate subpopulations of *P. wallacei* in the Rio Negro region were assessed as stable. *Potamotrygon albimaculata*, *P. jabuti*, *P. marquesi*, *P. signata*, and *P. henlei* are currently undergoing assessment. *P. signata* is believed to have a restricted distribution; the other species are relatively widespread in different river systems in the Amazon basin.

Since 2017, all Brazilian populations of *Potamotrygon* spp. have been listed in CITES Appendix III. Within Brazil, six species of freshwater stingray (*Potamotrygon henlei*, *P. motoro*, *P. orbigny*, *P. leopoldi*, *P. schroederi*, and *P. wallacei*, (as *P. hystrix*, taxonomy now superseded)) are regulated under an export quota, which also specifies a species-specific maximum disc width export size. The Brazilian export quota system was established in 2003. However, since April 2021 Brazil has instituted a prohibition in legal exports of all CITES listed species, including all freshwater stingray populations. In the years leading up to this, numbers of legally exported wild specimens were well below the export quotas.

All species of the genus *Potamotrygon* exhibit polychromatism, making identification to species level based on colour patterns challenging. However, the species in this proposal can be divided into two general groupings: the black rays (*P. leopoldi*, *P. albimaculata*, *P. henlei* (and sometimes *P. jabuti*)); and the brown rays (*P. wallacei*, *P. signata*, and *P. marquesi*).

Analysis: The seven Brazilian *Potamotrygon* species proposed are freshwater rays endemic to river systems in the Amazon basin. Most are relatively widespread; one (*P. signata*) has a restricted distribution. In the past some species, particularly *P. leopoldi* but also *P. wallacei* under its earlier name of *P. hystrix*, have been exported in significant numbers for the aquarium fish trade. Population decreases have been detected in both these species and may be ongoing, although population trend data are often conflicting and it is unclear whether decreases can be ascribed to harvesting for export or other factors such as habitat degradation. Since 2000 *P. leopoldi* has been hybridised, principally in Thailand, with other species to produce forms that are sometimes more desirable than wild-caught forms and command premium prices. This has reduced demand for wild-caught individuals. From 2008, Brazilian authorities set export quotas for six native *Potamotrygon* spp., but declared exports remained far below these limits. Since 2021 all export of CITES-listed species has been banned so that there is currently no legal export trade. There are indications of some illegal export, including reports of seizures, but there no indications of large scale illegal trade and species other than *P. leopoldi* and its hybrids rarely appear on the open market (*P. signata* has not been detected in trade recently). It seems unlikely that harvest for such trade has a significant impact on *Potamotrygon* populations.

On this basis, it does not appear that regulation of trade will contribute to threat reduction for these species, so they do not appear to meet the criteria for listing in Appendix II in Annex 2a of Res. Conf. 9.24 (Rev. CoP17).

Of the species proposed, the black rays (*P. albimaculata*, *P. henlei*, *P. leopoldi* and *P. jabuti*) may resemble each other but should be relatively easy to distinguish from the brown rays (*P. wallacei*, *P. signata*, and *P. marquesi*).

Inclusion of Guitarfish (Family Rhinobatidae) in Appendix II

Proponents: Israel, Kenya, Panama, Senegal

Summary: Guitarfish are shark-like rays in the Order Rhinopristiformes and family Rhinobatidae. Three other families within the Order Rhinopristiformes are listed in Appendix I (Pristidae at CoP14) and Appendix II (Glaucostegidae and Rhinidae at CoP18). There are 37 species within the family Rhinobatidae in three genera (*Acroteriobatus*, *Pseudobatos*, and *Rhinobatos*). These demersal species occur mostly in shallow (<50 m) coastal continental shelves to depths of up to 366 m.

Six of the species now proposed for listing (*Acroteriobatus variegatus*, *Pseudobatos horkelii*, *Rhinobatos albomaculatus*, *Rhinobatos irvinei*, *Rhinobatos rhinobatos* and *Rhinobatos schlegelii*), have recently been assessed as Critically Endangered on the IUCN Red List. These species have undergone population declines suspected or inferred to be at least 80% over the past three generations, except *A. variegatus* for which declines are projected. These six species are proposed for listing in Appendix II in accordance with Article II, paragraph 2(a) of the Convention (from here onwards referred to as lead species). All remaining species in the family are proposed in accordance with Article II paragraph 2(b) (as lookalike species).

Maximum total length ranges from 65 cm (*A. variegatus*) to 138 cm (*P. horkelii*). The shortest inferred generation length is 5 years (*A. variegatus*), and the longest is 18.5 years for *P. horkelii*. *A. variegatus*, *R. albomaculatus*, and *R. irvinei* typically produce relatively small litters ranging from 1–4 pups, while *P. horkelii*, *R. rhinobatos* and *R. schlegelii* produce larger litters on average, ranging from 1–14 pups. Maximum annual intrinsic rates of population increase have been estimated for *P. horkelii* and *R. rhinobatos*, and these rates suggest moderate and moderate-to-high productivity relative to other guitarfishes. However, relative to aquatic fishes more generally, productivity is medium-to-low for the family Rhinobatidae.

Three of the lead species, have restricted distributions within the western Indian Ocean (*A. variegatus*), southwestern Atlantic Ocean (*P. horkelii*) and northwestern Pacific Ocean (*R. schlegelii*). *R. albomaculatus*, *R. irvinei*, and *R. rhinobatos* have larger overlapping distributions from Angola to Mauritania, with *R. irvinei* extending northwards to Morocco, and *R. rhinobatos* extending into the Mediterranean Sea.

The primary threat to the family Rhinobatidae is targeted or incidental catch for meat and fins in unmanaged and unregulated fisheries. Due to their coastal, inshore nature, these species are often caught in a variety of fishing gear especially artisanal and semi-industrial gillnets, trawls, line, trammel nets and seine nets, including as incidental catch in demersal trawls and gillnets.

Global population sizes are unknown for all species in the family. There is little species-specific information, and recent taxonomic revisions mean that available data for Rhinobatidae are sometimes inferred from other Rhinidae and Glaucostegidae species. Available catch-per-unit-effort (CPUE) data for *P. horkelii* in Brazil, as well as decreased catches in Uruguay, suggest population reductions of >99% and >80% over the last three generations, respectively. When available data for *R. schlegelii* are scaled to three generation lengths, they represent reductions of 63%, 88%, 40%, and 90% in Taiwan POC, Japan, China, and the Republic of Korea, respectively.

For other species, information on population trends is patchy. There is evidence of population reductions for *R. rhinobatos* in Senegal (90% reduction in landings over three generation lengths), Mauritania (85% population reduction over three generation lengths) and Ghana with fishers estimating 80–90% decreases. *Rhinobatos rhinobatos* appears to be rare in Cameroon and absent in Angola. In the northern part of its range, *R. rhinobatos* is considered locally extinct in western and central Mediterranean waters. It is still caught and is considered relatively common in the eastern Mediterranean, especially in Lebanon.

In Ghana, *R. irvinei* is relatively common, although Guitarfish fishers interviewed reported a 40–60% decrease in catches. In these target fisheries, *R. irvinei* was the most landed species (70% of the relative catch). *Rhinobatos irvinei* was found to be present in low numbers during landing surveys in Cameroon and Angola.

While *R. albomaculatus* was absent during trawl surveys from Guinea. In the southern extent of this species' ranges, it appears to be relatively common in Cameroon (7% of all shark and ray records over a two-year survey).

No specific population trend data are available for *A. variegatus*; general reductions in Rhinidae, Glaucostegidae, and Rhinobatidae have been used to infer future population declines.

Information on international trade in guitarfish fins is sparse. The fins of Rhinobatidae, Rhinidae, and Glaucostegidae are considered together as a single category known as “white” shark fins or “Qun chi”, which has one of the highest values of any fin category. However, references to trade in any members of the Rhinobatidae are rare. Researchers have reported the presence of *A. variegatus* in a 2020 survey of low-value fins in Hong Kong SAR, noting that this was the first time this species had been recorded in trade despite extensive earlier sampling (over 9,000 samples between 2014 and 2016). There are also reports that in Ghana fins of landed *R. s rhinobatos* are detached and sold separately to traders from Nigeria, Togo, Mali, The Gambia, and Senegal, presumed to be supplying Asian markets. There is also evidence from fish market interviews of small guitarfish fins, likely of *R. albomaculatus* and *R. irvinei*, being sold. However, quantitative data are lacking and these species have not been detected in fin hub surveys. The meat and fins of *R. schlegelli* are low-value and are likely consumed domestically. There is no evidence of *P. horkelii* in trade, and meat, which is considered valuable, is consumed domestically.

National instruments in place for Rhinobatidae vary by range State. Some instruments are species-specific, and others may indirectly benefit Rhinobatidae species (such as finning bans, fishing gear restrictions, and area and closed seasons). The Mediterranean population of *R. rhinobatos* is included in several environmental agreements including the Convention on Migratory Species (CMS), where it is listed in Appendix I, and the Barcelona Convention.

Analysis: Guitarfishes are, or have been, subject to targeted and incidental fisheries throughout their range. Of the six species proposed as lead species five are already suspected or inferred to have undergone marked declines, with *A. variegatus* considered to have been impacted by intense fishing and projected to decline markedly by 2032. These species would appear to meet the biological criteria for inclusion in Appendix I in Res. Conf. 9.24 (Rev CoP17). Any trade could be considered to require regulation meeting the criteria for inclusion in Appendix II in Annex 2aA of the Resolution. There is very little quantitative evidence of products (fins) of any of these species in fin hub surveys, although there are reports from fishers of *R. rhinobatos*, *R. albomaculatus* and *R. irvinei* apparently entering trade. *Acroteriobatus variegatus* was identified in surveys in fin markets in Hong Kong SAR for the first time in 2020. While some of the targeted harvest of these species may be driven by international trade, domestic consumption is likely to be the dominant driver.

Within the family Rhinobatidae, it can be challenging to identify parts and derivatives to species level. Juveniles of Rhinidae and Glaucostegidae are often difficult to distinguish from Rhinobatidae both whole and when traded as parts and derivatives. Parts and derivatives of juvenile Pristidae are also difficult to distinguish from Rhinobatidae. As such, all members of the family Rhinobatidae meet the criteria for listing in Annex 2bA of Res. Conf. 9.24 (Rev CoP17) based on the difficulty of distinguishing whole carcasses as well as parts and derivatives from those of species already listed in the Appendices (Rhinidae, Glaucostegidae, and Pristidae). This would ensure that already listed species could not be traded illicitly under the names of non-listed Rhinobatidae species that resemble them.

Inclusion of the Zebra Pleco *Hypancistrus zebra* in Appendix I

Proponent: Brazil

Summary: *Hypancistrus zebra* is a highly distinctive small freshwater fish, endemic to shallow waters (<1–10 m) along a restricted stretch of the Xingu River, a tributary of the Amazon, in the state of Pará, Brazil. Its known area of occupancy has been estimated at just under 400 km². It was discovered in 1987: captive breeding started in the early 1990s and commercial captive breeding from the early 2000s. Observations in the 1990s indicated its population was decreasing, apparently due to overcollection for the aquarium trade and by 2004 the species was nationally considered to be vulnerable. Capture was prohibited in 2004 after which the population was believed to have recovered. The construction of the Belo Monte hydroelectric dam in 2016 affected the entire range of the species, which was assessed for the IUCN Red List in 2018 as Critically Endangered on the basis of a projected population decline of more than 80% over 10 years. Since then, observations suggest that the impact of the dam has been less severe than anticipated.

Hypancistrus zebra is a desirable fish with hobbyists and is widely available in the international pet trade with much of the supply coming from captive breeding, largely supplied by companies in Indonesia. Since 2000 large quantities of *H. zebra* have been produced with prices lower than those of illegally sourced wild individuals. However, illegal trade in *H. zebra* is evident. Over the last decade, over 4,100 individuals were reported as seized by the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). Interviews with exporters indicate that hundreds to thousands of individuals per month, during peak season, have been smuggled out of Brazil into neighbouring countries. In 2017, the species was included in CITES Appendix III by Brazil. The majority of trade reported since then has been in captive-bred individuals from Indonesia (reporting nearly 30,000 exported specimens). In captivity individuals live for 10–15 years so that brood stock for captive breeding could have been legally acquired before Brazil's 2004 export ban.

Analysis: *Hypancistrus zebra* has a relatively restricted distribution in Brazil with a range of less than 400 km². Construction of the Belo Monte Dam in 2016 has divided the population into two subpopulations and resulted in a decrease in habitat quality, although it appears that this has had a less severe effect on the population than anticipated. The species is in demand and, despite a ban on exports since 2004, seizure data indicate that illegal exports take place, although there is little information on the scale of such exports or of the impact of collection on wild populations. The restricted range with declining habitat quality and continuing presence in trade indicate the species appears to meet the criteria for inclusion in Appendix I in Res. Conf. 9.24 (Rev CoP17). This would reflect Brazil's national regulations covering the species. Any additional benefits of an Appendix I listing would depend on an increase in enforcement efforts and there is a risk that negative regulatory impacts on the currently dominant supply from captive breeding could actually increase pressure on the wild population. An Appendix II listing with a zero-export quota for trade in wild specimens for commercial purposes would have the same regulatory effect. This would ensure that breeding operations would still be able to trade captive-bred individuals without their needing to be registered in CITES under Res. Conf 12.10 (Rev CoP15).

Inclusion of Sea Cucumbers *TheleNOTA* spp. in Appendix II

Proponents: European Union, Seychelles, United States of America

Summary: Sea cucumbers or holothurians are a class (Holothuroidea) of marine echinoderm with a worldwide distribution, comprising around 1,700 species. In dried form, known as trepang or bêche-de-mer, they are traded and used for food and in traditional medicine, particularly in China. *TheleNOTA* is a genus of three species (*T. ananas*, *T.anax*, and *T. rubralineata*) of large bodied, widely distributed Indo-Pacific sea cucumbers. *TheleNOTA ananas*, which may weigh up to 6 kg, is found on sandy sea floors at depths of 0–30 m off the coast of east Africa, the Indo-Pacific region and Australia. *TheleNOTAanax*, the largest known holothurian, often exceeding 7 kg in weight, is found on sandy portions of the ocean floor at depths of 5–25 m off the coast of eastern Africa, the Indo-Pacific region and Australia. *TheleNOTA rubralineata* is found on outer coral reef slopes at depths below 20 m in the west Pacific.

Holothurians are sedentary animals that are particularly vulnerable to overexploitation because they are large, typically occur in shallow waters, and do not require sophisticated fishing techniques. Specimens in shallow water can be collected through free-diving, but SCUBA or hookah equipment are needed to access those in deeper water. Most sea cucumbers are broadcast spawners, releasing their gametes into the water column. The success of reproduction depends directly on the density of adults to ensure high enough concentrations of sperms and eggs so that fertilisation takes place. Very little is known about generation length and recruitment of most species; it is thought that some *TheleNOTA* spp. can live for several decades in a natural undisturbed environment.

Consumption of sea cucumbers for food is common throughout many Asian countries. Sea cucumber fisheries have developed in many parts of the world, and most have declined as a result of overfishing. Aquaculture of sea cucumbers has increased in China since the 1990s, with production of over 160,000 t reported in 2021 and similar production expected in 2022. Publication of a paper in 2020 claiming that sulphated polysaccharides from sea cucumbers could inhibit the activity of the COVID-19 virus has reportedly led to explosive growth in sea cucumber consumption in parts of China.

No global population estimates are available for any of the species. There are indications of localised decreased populations throughout *T. ananas*'s range. Local declines have been reported for *T. ananas* in New Caledonia between the 1980s and 2013, in Tonga between 1984 and 2004, in the Red Sea between 2000–2016 (when none were observed in surveys), and for *T.anax* in Tonga between 1984 and 1996. In Fiji surveys of both species in 2012 and 2013 found markedly depleted population densities (one individual per ha or less, compared with expected densities of 10–20 per ha). A survey in Fiji between 2014–2015 recorded no *TheleNOTA* spp. *T. rubralineata* is rarely recorded and very few population density estimates are available.

TheleNOTA ananas was assessed as Endangered on the IUCN Red List in 2010; at that time populations were estimated to have declined by 80–90% across at least half of its range. Both *T.anax* and *T. rubralineata* were assessed as Data Deficient on the IUCN Red List (2010), with *T.anax* reported as uncommon.

Sea cucumbers are generally traded without taxonomic identification so that it is difficult to assess volumes of individual species in trade. There are no reliable estimates of the volume of *TheleNOTA* species in international trade although a low volume is inferred from the frequency of sale in wholesale and retail stores in China. One 2016 market study found *T. ananas* to be relatively widely available in shops (present in 22 out of 59 surveyed). This species is reported to have high nutritional value and is one of the highest value species in international trade (up to USD219 per kg (dried)). In the same survey *T.anax* was found at low frequency (3 out of 59). However, *T.anax* is apparently becoming increasingly popular as stocks of other species have been depleted. It was

sold in Chinese markets for USD31 per kg in 2016, a 70% price increase in five years. In Fiji, exporters indicated that *T. anax* was the most exported species by volume in 2014. In 2004, *Thelenota rubralineata* was identified along with 28 other species of sea cucumber as having commercial value in the Solomon Islands; the species is reported to be harvested there but there is no information on harvest levels.

Illicit trade in sea cucumbers is known to occur, however, there is little specific documentation of illegal trade in *Thelenota* species.

Numerous countries have instituted area closures in response to overexploitation of sea cucumbers. Egypt has employed no take zones (NTZ) and India employed a total ban on sea cucumber fishing, but these are not widely adopted strategies and there have been issues with implementation. Harvest of *Thelenota ananas* is prohibited in Mozambique. Limited-access fisheries in Australia have also restricted the number of vessels/harvesters in a given area. Total Allowable Catches (TACs) or quotas have also been established in Australia and Papua New Guinea. Minimum catch sizes are in force in Australia, Papua New Guinea, Fiji, and Tonga. However, large parts of the ranges of *Thelonota* spp. are not protected or regulated.

Analysis: *Thelenota* sea cucumbers are prone to overexploitation due to their limited mobility as adults, late sexual maturity, density-dependent reproduction, habitat preferences and low rates of recruitment. Moreover, they can be easily exploited because adults are large, often active during daytime, easy to detect and collect, and do not require sophisticated fishing or processing techniques.

Historic and recent localised declines have been observed in *T. ananas* which are consistent with the indicative guidelines for the inclusion in Appendix II of commercially exploited aquatic species suggested in the footnote to Annex 5 of Resolution 9.24 (Rev. CoP17). In some cases (parts of the Red Sea and Fiji) there are indications of local extirpations. It is likely that most accessible populations in its range are exploited given its high value and may have experienced similar declines, indicating that regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future (criterion 2a A).

Thelenota anax and *Thelenota rubralineata* are considered uncommon and have not appeared at all in some surveys of areas where they have been recorded in the past. Records of *T. rubralineata* are too sparse to allow conclusions to be drawn on likely changes of the population as a whole. Observations from some parts of the range indicate that *T. anax* may have experienced widespread population declines. As harvest for international trade is likely to be driving the majority of fishing for these species (across much of their ranges), and demand for this species may be increasing, it is likely that regulation of trade is required to ensure that harvest from the wild is not reducing their wild populations to a level at which their survival might be threatened by continued harvest or other influences (criterion 2a B). In summary, *T. ananas* and *T. anax* may meet the criteria for inclusion in Appendix II, but there is insufficient evidence to determine whether or not *T. rubralineata* meets the criteria. The three species can be distinguished from each other in wet and dried form.

Amend annotations #1, #4, #14 and the annotation to species of Orchidaceae listed in Appendix I

Proponent: Canada

Summary: The proposed amendments to annotations #1, #4, #14 and the annotation for taxa of Orchidaceae listed in Appendix I, are a result of extensive deliberation by the Standing Committee's Working Group on Annotations. They were endorsed by the Standing Committee at its Seventy-fourth meeting. The main change proposed is to remove the phrase "in solid or liquid media" from annotations providing exemptions for trade in plant seedlings and tissue cultures obtained *in vitro* on the basis that this reflects the evolution in techniques for propagating and transporting such specimens since the adoption of the current text while maintaining the original intent of the exemption.

All other changes proposed are grammatical but, because they relate to a substantive annotation, a proposal to the CoP is required under Res. Conf. 11.21 (Rev. CoP18) on *Use of annotations in Appendices I and II*.

Analysis: The amendments propose removal of the phrase "in solid or liquid media" from annotations providing exemptions for trade in plant seedlings and tissue cultures obtained *in vitro*; these were supported by consensus by the Standing Committee at its 74th meeting in 2022 (SC74). They are in line with current propagation techniques and should have no impact on the conservation of species in the wild. Submission of this proposal to the CoP is in line with Res. Conf. 11.21 (Rev. CoP18) on *Use of annotations in Appendices I and II*.

Inclusion of Trumpet Trees *Handroanthus* spp., *Roseodendron* spp., and *Tabebuia* spp. in Appendix II with annotation #17

Proponents: Colombia, European Union, Panama

Summary: *Handroanthus*, *Tabebuia* and *Roseodendron* are genera of Bignoniaceae distributed from southern USA to Argentina and Chile, including the Caribbean. There are currently 113 recognised tree species across the three genera (35 in *Handroanthus*, 76 in *Tabebuia* and two in *Roseodendron*). The three genera were previously recognised as belonging to a single genus (*Tabebuia*), but were split in 2007 based on genetic studies, and new species continue to be described. While some are widely distributed, over half of the species are endemic to one range State or restricted to islands.

Most species within these genera produce a very hard, heavy, and durable wood that is used locally in the construction of houses, bridges, flooring, decking, and handicrafts. Internationally, where it is marketed under the single common name of Ipê, it is one of the preferred timbers for decking. Distinguishing between species and genera is reportedly difficult even at the microscopic level, and there are no identification guides covering all species. The bark is also traded internationally for medicinal and aromatic purposes. Little is known about this trade or whether harvesting bark is detrimental to the species in the wild.

Ipê is one of the most valuable timbers in the market with prices in Brazil reported to be as high as those achieved historically by Big-leaf Mahogany *Swietenia macrophylla* before commercial exploitation of the latter species was prohibited in the country. Due to their natural low densities, growth rates and shade-intolerant seedlings, Ipê species appear to be particularly vulnerable to logging, even at substantially reduced intensities. Various species have been widely planted throughout the Americas for commercial plantations, reforestation and urban landscaping as ornamentals.

The proponents seek to include the genera *Handroanthus*, *Tabebuia* and *Roseodendron* in Appendix II with annotation #17 (Logs, sawn wood, veneer sheets, plywood and transformed wood). *Handroanthus serratifolius* and *H. impetiginosus* are proposed under Annex 2a Criterion B, with the remaining species proposed under Annex 2b Criterion A based on timber being traded under the same trade name (Ipê) and under genus names, as well as due to identification, nomenclature, and taxonomic uncertainties. The three genera were previously proposed for Appendix II listing at CoP18 by Brazil (CoP18 Prop. 49), but the proposal was withdrawn before consideration.

Although no estimates for the total global trade in Ipê exist, Brazil is identified as a major exporter. Brazil reported a total of 255,723 m³ of Ipê in trade in 2010–2016. Brazil reportedly exports Ipê to 60 countries, the principal importers being the USA and Europe. Trade from Brazil accounted for 93% of Ipê sawn wood and around 87% of Ipê flooring imports by the USA from 2008–2017. All Ipê timber production in Brazil derives from natural populations. Potentially high levels of illegal harvest have been reported in the country (as well as low volumes of seizures reported in Colombia, Mexico, and Venezuela), and there are concerns over inappropriate management measures including overestimation of sustainable offtakes, but it is unclear what proportion of illegally harvested timber enters international trade. In the forests of northeastern Brazil, *H. impetiginosus* and *H. serratifolius* have shown severe population declines, with no evidence of long-term population recovery.

- ***Handroanthus impetiginosus*:** *Handroanthus impetiginosus* was assessed as Near Threatened on the IUCN Red List in 2020, noting that its populations have declined considerably as a result of unsustainable exploitation for the international timber trade, with declines projected to continue. The species is currently categorised as near threatened in Brazil in 2019 (but was not included in the most recent assessment), threatened in Mexico and endangered in Peru. Populations of *H. impetiginosus* in parts of Brazil have reportedly suffered significant declines through overexploitation. Brazil reported exports of 1,644 m³ of

H. impetiginosus in 2010–2016. Exports of *H. impetiginosus* are also reported by Venezuela (20,491 m³ from 2007–2017).

- ***Handroanthus serratifolius***: *Handroanthus serratifolius* was categorised as globally Endangered on the IUCN Red List in 2020 on the basis that it is threatened by international trade and is predicted to experience a significant population decline in the future.

Of Ipê exports reported by Brazil from 2010–2016, 70% (~180,000 m³) were of *H. serratifolius*. Of the exports of this species, 75% were reported as decking, 16% as sawn wood and the remainder as flooring, clapboards and “other”. The USA and European countries were the major importers.

In the period 2010–2016, Brazilian exports of *H. serratifolius* peaked in 2012, with 36,000 m³ reported. Brazil reported exports of 220,000 m³ in 2017. In the years for which both production and export figures are available for *H. serratifolius* in Brazil (2012–2016), export volumes were ~16% of production volumes. While this may indicate that domestic use exceeds international trade, a 2008 study reported a relatively low processing efficiency for Ipê (42%) suggesting potentially high levels of wastage during processing of exported products. The average yield of this species is estimated at 2.4 m³/ha. Colombia reported harvests of 1,727 m³ in 2019–2021.

Exploitation in some regions of Brazil has reportedly resulted in significant declines of *H. serratifolius*, with no evidence of long-term population recovery. The species is considered threatened in both Peru and Venezuela; relatively low levels of legal and illegal international trade in the species are reported by Peru, but it is unclear whether this trade has contributed to the reported declines.

- ***Handroanthus capitatus*, *Handroanthus chrysanthus*, and *Handroanthus incanus***: These three species are all assessed as Vulnerable. Volumes in trade included reports of *H. capitatus*: ~3000 m³ by Brazil 2010–2016 and ~13,000 m³ by Suriname 2017–2019; *H. chrysanthus*: 50 m³ by Brazil and ~24,000 m³ by Colombia 2019–2021; and *H. incanus*: ~2000 m³ by Brazil. There were additionally reports of seizures in Mexico and Colombia of illegally obtained *H. chrysanthus*.

Ipê is of increasing economic importance; it is mainly exported as decking, sawn wood and flooring for use in furniture and construction. The main importers are the EU and the USA. Over 525 million kg (or ~470,000 m³) of Ipê timber products were exported from Brazil, Paraguay, Peru, and the Plurinational State of Bolivia (henceforth Bolivia) between 2017–2021. The majority of Ipê is exported from Brazil, which accounted for virtually all trade (96% based on volume). At least 13 species of *Handroanthus* were reportedly exported from Brazil during 2010–2016, however some trade is reported at the genus level, in many cases under synonymous names in the genus *Tabebuia*. The low natural density and low growth rate of *H. serratifolius*, as well as *H. impetiginosus*, typical of most of the other species within the three genera, combined with high demand for international trade, habitat loss and degradation, has had a negative impact on populations.

Although the known main international trade is in two species (*H. serratifolius* and *H. impetiginosus*), the trade name Ipê widely refers to any species of the three genera, as timber trade data are generally not recorded at the species level. Other species reported in international trade include *H. capitatus* (6,000 m³ sawn wood exported from Suriname from 2011–2015), *H. heptaphyllus* (5,000 m³ sawn wood exported from Guyana from 2011–2015), *Roseodendron donnell-smithii* (183 m³ sawn wood and 510 roundwood pieces exported from Mexico from 2010–2012), and *Tabebuia rosea* (exports from Venezuela totaling ~27,000 m³ from 2007–2017). It is not clear whether international trade presents a threat to these species. Deforestation for land clearance is reportedly a threat to certain species in parts of their ranges, such as *H. chrysanthus* in Colombia and *T. rosea* in Mexico.

According to IUCN Red List assessments, Ipê (species of *Handroanthus*, *Tabebuia*, and *Roseodendron*) is increasingly being exploited unsustainably. Distinguishing distinct species of the three genera based on timber is macroscopically and microscopically not possible. Evidence

suggests that current levels of exploitation of *H. serratifolius*, *H. impetiginosus* and potentially numerous other Ipê-producing species for which trade data cannot be clearly assigned to a specific taxon, may lead to serious population decreases.

Analysis: *Handroanthus*, *Tabebuia*, and *Roseodendron* are genera of New World trees comprising over 100 species, with new species still being described. The timbers of certain species are in high demand both domestically and internationally and are reportedly some of the most valuable in the market. Woods of the three genera are marketed with the same common name (Ipê); distinguishing between the species and genera is reportedly difficult even at the microscopic level. The most highly traded species based on reported data are *H. serratifolius* and *H. impetiginosus*, which occur in several countries from Mexico to Argentina. *H. capitatus*, *H. chrysanthus*, and *H. incanus* are additionally reported in trade at lower levels according to available records.

While global data on trade are not available, Brazil appears to be the main exporter of Ipê, the majority of which is *H. serratifolius*, with 19 other species also reported in trade. *Tabebuia* spp. reported at the genus level was the second most reported in trade by Brazil, and *T. rosea* was reportedly exploited in high levels by Colombia and Venezuela. There are also reports of illegal Ipê harvest and trade taking place in Brazil, as well as seizures of timber reported by Brazil, Colombia, Mexico, and Venezuela. Overexploitation in some areas has reportedly resulted in significant population declines of *H. serratifolius* and *H. impetiginosus* which, like other species in these genera, appear to be particularly vulnerable to logging since they do not regenerate easily. *Handroanthus capitatus*, *H. chrysanthus*, *H. impetiginosus*, *H. incanus* and *H. serratifolius* have all been assessed as threatened (*H. serratifolius* as Endangered) with significant projected future population declines.

On this basis, *Handroanthus capitatus*, *H. chrysanthus*, *H. impetiginosus*, *H. incanus* and *H. serratifolius* appear to meet criterion B for inclusion in Appendix II in Annex 2a of Res. Conf. 9.24 (Rev. CoP17), and this may also be the case for many other species in the three genera for which distinct trade records are unavailable. The remaining species in all three genera meet the criteria for inclusion in Annex 2b as lookalikes, based on the reported identification difficulties, taxonomic and nomenclatural uncertainties, as well as being in trade under the same trade name.

Dipteryx alata and *D. odorata* are said to be commonly confused with *Handroanthus* spp., *Tabebuia* spp., and *Roseodendron* spp. which are proposed for listing in Proposal 48; these would also meet the lookalike criteria in Annex 2bA of Res. Conf. 9.24 (Rev. CoP17) were the current Proposal to be accepted.

Annotation

The majority of trade appears to be as sawn wood (HS code 4407) and wood flooring and decking (under HS code 4409) and clearly within the CITES definition of transformed wood. Bark has also been reported in trade, but no information exists on trade volumes and impact on the species. Therefore annotation #17 to include "Logs, sawn wood, veneer sheets, plywood and transformed wood" would seem to cover the main items first in trade from range States. If international bark trade is found to be detrimental to the species in the wild in the future, it may be appropriate to list the species with a new annotation, #17 with the inclusion of bark.

Inclusion of *Rhodiola* spp. in Appendix II with annotation #2

Proponents: China, European Union, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America

Summary: *Rhodiola* is a diverse genus of perennial herbs occurring in colder parts of the Northern Hemisphere. They are generally long-lived and slow growing, with some species taking up to 20 years to mature in the wild. The taxonomy is unresolved, but the proponents follow a 2003 review, which recognises 58 species within the genus.

Two species (Rose Root *Rhodiola rosea* and Arctic Root *Rhodiola crenulata*) are proposed for inclusion in Appendix II to address trade threats; the remaining species are proposed as lookalikes. The proposal includes annotation #2: "All parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade." *Rhodiola rosea* is extant in 28 range States across Asia, Europe, and North America, and *Rhodiola crenulata* is extant in Bhutan, China, India, and Nepal where it is confined to altitudes of 2,800–5,600 m above sea level. One species *R. marginata*, endemic to Bhutan, was assessed globally for the IUCN Red List as Least Concern in 2017. Other species have not been globally assessed.

The rhizomes of *Rhodiola* have been used in traditional medicine systems across much of their range. Both domestic and international demand for *Rhodiola* species has increased in the last 20 years accompanied by increased diversity in products available, including teas, pills and herbal medicines, supplements, energy drinks, alcoholic beverages, and cosmetics. Products containing *Rhodiola* have been tested in clinical trials investigating treatment of fatigue, sleep disorders, and depression. *Rhodiola* is an ingredient of one of the most popular Traditional Chinese Medicine (TCM) formulations recommended for treating COVID-19 in China, with approval for this medicine registered in 30 countries.

National red list assessments are available for *R. rosea* for 21 range States. The species has been nationally classified as least concern or secure in eleven countries in Europe and North America and as threatened with extinction or rare in ten. *R. crenulata* was nationally assessed as endangered in China in 2017 and one recent study in Bhutan has found *R. crenulata* to be uncommon and patchily distributed in some areas. According to known occurrence records for *R. crenulata*, the majority of the species' range is in China.

Global trade data are not available for either species but available evidence suggests that *R. rosea* is predominantly wild harvested for international trade in four range States (China, Kazakhstan, Mongolia, and Russian Federation) and *R. crenulata* in one (China). *Rhodiola crenulata* is said to be the most widely traded species in China and has also been found to be traded under the name of *R. rosea*. In both Russian Federation (for *R. rosea*) and China (for *R. rosea* and *R. crenulata*), research indicates that wild harvest to meet commercial demand is leading to population declines.

International exports from China, particularly in the form of extracts, are said to be a key driver of commercial trade in *Rhodiola*. China sources *R. rosea* both domestically through wild harvest, and through imports of raw wild-harvested material (e.g., roots and rhizomes) from Russian Federation, Kazakhstan, and possibly Mongolia. Stocks of *R. rosea* in China have been reported to be declining, with imports from neighbouring regions now needed to meet commercial demand. There is no clear evidence of cross-border trade of *R. crenulata* into China from Bhutan, Nepal, and India although there may be some trade from the Linghsi district of Bhutan.

The Russian Federation also imports roots of *R. rosea* from Kazakhstan and Mongolia, and exports finished products to countries in Europe and Asia. Harvest in Russian Federation is reported to have affected populations in the Altai region in particular. In all four countries with the most evidence of wild harvest for commercial export, the species has been documented in national red list

assessments as either rare (*R. rosea* in Kazakhstan and Russian Federation), vulnerable (*R. rosea* in Mongolia and China), or endangered (*R. crenulata* in China).

Data on volumes in trade are sparse. In Russian Federation, 85 t of dried *R. rosea* rhizomes were reported as exported between 2006 and 2008. A study in 2017 estimated that 500 t of dry rhizomes of *R. rosea* were exported from the Xinjiang region in China each year for manufacturing in eastern China, with most of this material thought to be exported internationally.

All available evidence indicates that the *R. rosea* and *R. crenulata* in commodities exported from China are entirely wild-sourced. Commercial cultivation is known to take place in some countries, including Canada, USA, and possibly Ukraine, and Russian Federation, although this is generally at a small-scale with products intended for domestic use. The relatively long maturation period of the plants (five years) and low profit margins present significant barriers to large-scale commercial cultivation. For *R. crenulata*, cultivation is reportedly additionally challenging due to its high-altitude growing requirements. There are no indications of commercial cultivation of *R. rosea* in Mongolia or Kazakhstan, and no evidence of cultivation of *R. crenulata* in any country.

Permits are required for the wild harvest of both *R. rosea* and *R. crenulata* in China. In Russian Federation, *R. rosea* is nationally protected with wild harvest for commercial purposes illegal in all areas aside from populations in Altai Krai, Krasnoyarsk, Tuva and Magadan. In Kazakhstan, *R. rosea* is thought to be protected, although one source indicates that wild harvest in state forests is allowed and subject to quotas. Regulations for *Rhodiola* harvest are not clear in Mongolia. The species is fully protected in Bosnia and Herzegovina and Bulgaria and offered some form of protection in six other range States, most of which are also in Europe.

It is difficult to identify the species of *Rhodiola* in trade for live plants and dried rhizomes and mixing of different species in trade is thought to occur early within supply chains.

Analysis: There is clear evidence of international trade in and commercial demand for *Rhodiola* products that may be increasing. *Rhodiola rosea* and *R. crenulata* are the species that occur most frequently in trade, with most commercial cultivation (*R. rosea*) small scale or for domestic purposes, and most international exports likely to originate from wild harvest.

R. crenulata populations appear to be wild harvested for commercial international trade in China only, where it is now considered endangered. From known occurrence records, most of the range is also in China. There are indications of depletion from collection in parts of Bhutan and there may be harvesting of the species in India for domestic purposes. Given its relatively restricted distribution and the clear impact of trade in China, *R. crenulata* appears to meet the criteria for inclusion in Appendix II in Annex 2a of Res. Conf. 9.24 (Rev CoP17).

R. rosea has a very wide distribution. Populations have been assessed as rare or vulnerable in countries where they are most heavily harvested (Kazakhstan, Mongolia, Russian Federation and China). In large parts of the remainder of its range there is little indication of extensive harvest and the species has been assessed as not of conservation concern. It seems unlikely therefore that it meets the criteria for inclusion in Appendix II in Res. Conf. 9.24 (Rev.CoP17). However, because of difficulty in distinguishing between species of *Rhodiola* in dried form and the known mixing of products in trade, *R. rosea* along with other members of the genus meet lookalike criteria for inclusion in Appendix II in Annex 2bA of Res. Conf. 9.24 (Rev. CoP17).

Annotation

Annotation #2 would include "All parts and derivatives except: a) seeds and pollen; and b) finished products packaged and ready for retail trade." It is not currently known what proportion of products exported by range States would be considered finished products packaged and ready for retail trade. Res. Conf. 9.24 (Rev. CoP17) states (operative paragraph 7); annotations to proposals to amend Appendix I or Appendix II "should...include those specimens that first appear in international trade as export from range States." If a significant part of the export trade is in finished products inclusion of this annotation, were the proposal to be accepted, would go against the intention of the Resolution, although there may be challenges to implementing their inclusion.

Inclusion of all African populations of African mahogany *Afzelia* spp. in Appendix II with annotation #17

Proponents: Benin, Côte d'Ivoire, European Union, Liberia, Senegal

Summary: *Afzelia* is a genus of African and South-East Asian trees in the family Leguminosae. The seven African species are an important source of high-quality timber traded internationally as *Afzelia*, Doussie, Pod Mahogany, or African Mahogany. Two species are found in the Zambezi region, one in the Sudanian region and four in the Guinea-Congo region. They are typically slow-growing and occur at low densities. There are not known to be introduced populations or plantations of these species outside Africa.

The timber of different *Afzelia* species is difficult to distinguish and is marketed under the same commercial names. It has a wide range of uses as decorative veneer, flooring, door frames, staircases, docks, boatbuilding, exterior millwork and construction, furniture, musical instruments, turned objects, inlays, and other small speciality wood items. Exports from Africa include logs and sawn timber. *Afzelia* are also important locally for a wide range of subsistence uses. They provide traditional medicine ingredients, livestock fodder, wood for construction, charcoal, and fuelwood.

Five species are currently identified as of major commercial importance: *Afzelia africana*, *A. bella*, *A. bipindensis*, *A. pachyloba*, and *A. quanzensis*. Despite the paucity of inventory data, a global population decline has been noted as a result of timber harvesting for international trade for *A. africana*. The population of *A. quanzensis* is suspected to be decreasing as this species is becoming locally threatened in some areas due to selective logging for its timber. The proposal is to include all African populations of *Afzelia africana*, *A. bipindensis*, *A. pachyloba*, and *A. quanzensis* in Appendix II owing to concerns about unsustainable trade, and, because of the similarity of appearance of their timber, all other African populations of the genus *Afzelia* (i.e., *A. bella*, *A. parviflora*, and *A. peturei*) in Appendix II, under lookalike criteria.

In general, there appears to be very limited data on the level of international trade in *Afzelia* spp. The Supporting Statement provides information on trade in African Mahogany noting that this may refer to *Khaya* spp. (also proposed for listing in CITES Appendix II, see CoP19 Prop.51) and other species in addition to *Afzelia* spp. *Afzelia africana*, *A. bipindensis*, *A. pachyloba*, and *A. quanzensis* are widespread species that are considered to be in high demand for international trade. Although global population data are not generally available for these species, significant population declines are noted at African, national and local levels. The rare species *A. peturei* is not thought to be in trade; its timber properties are unknown.

- ***Afzelia africana*** is widespread but considered Vulnerable (IUCN Red List, 2019) with intensive and unsustainable harvesting resulting in a population reduction of at least 30% over the past three generations (150 years). Threats are still ongoing. Intensive exploitation of this species for timber used in the international market is a significant threat. *Afzelia africana* is exported from Ghana where there has been no recent official inventory of the species. The national population is, however, suspected to be decreasing due to intensive annual fires in forest savanna ecotones of the country.
- Both ***Afzelia bipindensis*** and ***A. pachyloba*** were assessed as Vulnerable in 1998 due to population decline. IUCN Red List reassessments for these two species are in progress. *Afzelia bipindensis* and *A. pachyloba* have been reported as the most commonly traded African *Afzelia* spp. with Cameroon noted as the main African exporter of the genus. Côte d'Ivoire and Ghana are also major exporters. *Afzelia bipindensis*, *A. pachyloba* and an additional species, *A. bella*, are all industrially exploited in the Congo Basin.
- ***Afzelia quanzensis*** is considered to be locally threatened in various countries due to depletion from unsustainable and illegal logging but was assessed in 2019 on the IUCN Red List as Least Concern. In Mozambique it is one of the three main timbers harvested (by volume) and one of five major timber species exported with China being the major export destination. It is

one of the main species harvested and traded in Angola. *A. quanzensis* is considered to be a potential replacement timber for the Appendix II listed *Pterocarpus erinaceus*.

- ***Afzelia peturei*** is a restricted range species occurring in Democratic Republic of the Congo (DRC) and Zambia close to the border between the two countries. It is considered Vulnerable (IUCN Red List, 2019) due to its restricted range and human disturbance. It is not known to be in trade.
- The wood of ***A. parviflora*** (Least Concern, IUCN Red List, 2019) is harvested but it is unclear whether it is traded internationally.
- ***A. bella*** is also widespread and in international trade but there is not currently thought to be a significant population decline.

Analysis: African *Afzelia* spp. produce high quality timber that is valued in the international market for its durability and aesthetic appearance. Four of the seven currently recognised African species (*Afzelia africana*, *A. bipindensis*, *A. pachyloba*, and *A. quanzensis*) are widespread African trees that have been heavily harvested in at least parts of their range for their timber. There are reports of declining populations as a result of harvest in a number of different range States. As a result, three of these species have been classified as Vulnerable on the IUCN Red List (*A. africana* in 2019 and *A. bipindensis* and *A. pachyloba* in 1998). Harvesting and export has continued, which is likely to have led to further depletion and in some cases exhaustion of harvestable stocks. The fourth (*A. quanzensis*) was assessed as Least Concern in 2019 but is known to be widely harvested in at least one important range State (Mozambique). There are no known national population estimates or stock assessments for any of the species. There are strong indications that all four of these species are currently harvested unsustainably in sometimes large parts of their range increasing their vulnerability to other important threats, therefore meeting criteria for inclusion in Appendix II as set out in Criterion B of Annex 2a, Res. Conf. 9.24 (Rev. CoP17).

Furthermore, given that it is difficult to distinguish between the timber of different African *Afzelia* spp., the other African members of the genus would appear to meet the lookalike criteria for listing in Appendix II in Annex 2b of the Resolution.

Annotation

The timber of these species is mainly exported as logs and sawn timber by African countries to be processed elsewhere for a range of uses. Therefore, Annotation #17 which designates “Logs, sawn wood, veneer sheets, plywood and transformed wood”, appears to be appropriate as it includes those specimens that first appear in international trade.

Deletion of North Indian Rosewood *Dalbergia sissoo* from Appendix II

Proponents: India, Nepal

Summary: North Indian Rosewood *Dalbergia sissoo* is a fast-growing perennial tree, native to Afghanistan, Bangladesh, Bhutan, India, Myanmar, Nepal, and Pakistan, and also widely introduced, especially in Africa and Asia. In some regions it is considered invasive. The population size is not known, and although disease has impacted both wild and cultivated populations in a number of range States, the species' high regeneration and growth rate provide resilience to this threat. In Bangladesh, India, Nepal, and Pakistan the species is widely cultivated and has also successfully naturalised following afforestation programmes. The species was assessed by IUCN as Least Concern in 2019.

Dalbergia sissoo is primarily harvested for its timber, which is used for a wide range of products including handicrafts and furniture. It has become one of the most widely used plantation tree species in the Indian subcontinent where it is economically important for its value in forestry, agroforestry, and horticulture.

The entire genus *Dalbergia*, apart from those species already included in Appendix I, was included in Appendix II at CoP17 (2016) with annotation #15. It was argued at the time of the proposed listing that only some *Dalbergia* species met the criteria in Annex 2a, but enforcement and customs officers who encountered specimens of *Dalbergia* products would be unlikely to be able to distinguish reliably between the various species. At CoP18, an unsuccessful proposal (Prop. 51) was submitted to delete *Dalbergia sissoo* from the Appendices. India as one of the proponents raised particular concerns over the impact that the listing of *Dalbergia sissoo* had had on its handicraft industry. However, at CoP18 (2019), annotation #15 was amended to include an exemption for wood products under 500 g. It was believed that this might mitigate some of the impacts on the handicraft industry, although it is unclear if this has been the case.

India has had a reservation in place for the genus since 2017, as well as stricter domestic measures banning the export of all wild specimens of all species, with a few exceptions including trade in *Dalbergia sissoo*.

From 2017 to 2020, the predominant commodities of *D. sissoo* reported in direct CITES trade were wood products (~19.5 million kg, plus ~1.5 million items) and carvings (~6.3 million kg plus ~40,000 items), reported by importers. Most were reported as sourced from artificial propagation (74% of items reported by weight, and 80% of those reported by number), and the remainder were declared as from Pre-Convention and wild sources, with sources changing from primarily Pre-Convention in 2017 to artificial propagation. The majority of trade was reported as from India, and trade was stable between 2017 and 2020, with ~6.5 million kg reported as imported from India annually (India did not report this trade). Importers were primarily the EU, the USA, and the UK.

Many experts acknowledge that, without the use of technology, it is difficult for non-experts to readily identify *Dalbergia sissoo* once made into finished products, which appear to be the predominant form in which *D. sissoo* is traded. While technological methods to identify *D. sissoo* exist, they require expertise and/or equipment not currently available on a global scale.

Analysis: Wild populations of *Dalbergia sissoo* are found over a large range and in general there is no evidence that they are declining due to trade. The species is of significant economic importance in several range States, particularly India and Pakistan, where large volumes of trade are sourced from artificially propagated populations. While the species does not meet the criteria for inclusion in Appendix II in Annex 2a of Res. Conf. 9.24 (Rev. CoP17), differentiating this species in trade from all other *Dalbergia* species does, at present, remain an implementation challenge. While methods exist to differentiate *D. sissoo* from other members of the genus in international trade, these require expertise and technology not currently available globally. The species therefore meets the criteria in Annex 2bA.

If this proposal were accepted *Dalbergia sissoo* would be the only *Dalbergia* species not included in the Appendices.

Inclusion of Cumaru *Dipteryx* spp. in Appendix II with new annotation designating logs, sawn wood, veneer sheets, plywood and transformed wood, and seeds

Proponents: Colombia, European Union, Panama

Summary: *Dipteryx* is a taxonomically complex genus encompassing 14 species of large, canopy emergent, slow growing trees distributed across Central and South America and occurring in tropical rainforest, seasonally dry forests, and woodlands. The genus is targeted for its valuable hardwood timber (traded as Cumaru, Shihuahuaco, and Brazilian Teak), as well as its seeds (known as tonka beans), which are traded internationally for use in the fragrance, tobacco, and food industries. In several range States *Dipteryx* spp. are also locally important for food, traditional medicine, charcoal, oil, as shade trees in cocoa agroforestry systems, and providing livelihoods to indigenous and local communities involved in the tonka bean supply chain. *Dipteryx* spp. face deforestation and habitat degradation throughout their global range, and logging adds to the pressure on wild populations.

The proposal is to include the species *Dipteryx alata*, *D. micrantha*, *D. odorata*, and *D. oleifera* in Appendix II of with Criterion B of Annex 2a of Resolution Conf. 9.24 (Rev. CoP17), and to include the remaining species of the genus *Dipteryx* in Appendix II of CITES for lookalike reasons, satisfying Criterion A of Annex 2b, with a new proposed annotation: “Logs, sawn wood, veneer sheets, plywood, transformed wood, and seeds” (current Annotation #17 with the addition of seeds).

- ***Dipteryx alata*:** Assessed as Vulnerable on the IUCN Red List in 2017 with a decreasing population trend, but no population estimate available. Occurs in Brazil, Paraguay, Plurinational State of Bolivia (henceforth Bolivia), and possibly Peru with an estimated extent of occurrence of seven million km². The species has undergone declines estimated between 30–50% over three generations in parts of its range. The seeds are harvested for tonka beans (see below).
- ***Dipteryx micrantha*:** Assessed as Data Deficient on the IUCN Red List in 2017 with a decreasing population trend. Occurs in Brazil, Ecuador, Peru, and possibly Bolivia, and Colombia. *D. micrantha* is reported to reach reproductive maturity at a minimum of 40 cm dbh (diameter at breast height) and live over 1,000 years. Considered in decline due to overharvest for timber, particularly in Peru where large volumes have been reported in exports: over 82 million kg (~ 76,000 m³) reported between 2018 and 2021 with 51 million kg (~7,000 m³) going to China, 19 million kg (~ 17,000 m³) to the EU and 1.8 million kg (~ 1,700 m³) to the USA. The population is estimated to have undergone a 33% decline in Peru between 2000 and 2020 with larger future declines projected.
- ***Dipteryx odorata*:** Assessed as Data Deficient on the IUCN Red List in 2017 with a decreasing population trend. Occurs in Bolivia, Bolivarian Republic of Venezuela (henceforth Venezuela), Colombia, French Guiana, Guyana, Honduras, Suriname, and possibly Peru. Introduced in Bahamas, Dominica, and Trinidad and Tobago. Nationally assessed as vulnerable in Colombia. The species is very slow growing and reaches maturity at 39 cm dbh. Timber harvest is believed to have major impacts on the species. High levels of timber trade are reported from Brazil and Colombia. The seeds harvested for tonka beans.
- ***Dipteryx oleifera*:** Least Concern on the IUCN Red List in 2020 and occurring in Colombia, Costa Rica, Nicaragua, Panama, Ecuador, and Honduras. Nationally assessed as vulnerable in Costa Rica, Colombia, and Panama. Currently listed in CITES Appendix III (under synonym *D. panamensis*) by Costa Rica (since 2003) and Nicaragua (since 2007), with a zero export quota for Nicaragua in 2022. The majority of trade since then has been reported by importers, originating from Panama (~ 51,000 kg, or ~ 47 m³), just under half of which was declared as from seized and/or confiscated sources.

Europe, the USA, and China are key importers of *Dipteryx* timber. Bolivia exported ~3.5 million kg of Cumaru to the European Union (EU) in 2019, and exports from Brazil to the USA and EU in 2018–2021 were around 11 million kg and 7 million kg, respectively. The genus *Dipteryx* comprised 80% of all wood exports from Peru in 2015. The timber of different *Dipteryx* species is not easily distinguished and is often traded under the genus, trade names, and common names comprising multiple species. The main products in trade appear to be logs, sawn wood, strips and joinery, decking.

Tonka beans are primarily harvested from *D. punctata*, *D. odorata*, and *D. alata*. *Dipteryx punctata* and *D. alata* have the shortest reported time to reach maturity of the *Dipteryx* species, estimated at 5–6 years. International trade in tonka beans boomed in the early 20th century, with intensive wild harvesting taking place, and declined in the 1940s. Current trade levels are reportedly a fraction of what they once were due to regulatory and voluntary restrictions on use of coumarin as an additive in the food and tobacco industries over recent decades. Presently, Brazil and Venezuela are the main range States supplying wild-sourced tonka beans to the international market for use in the perfumery and the food industry. Harvesting in Venezuela and Brazil is reportedly primarily carried out by indigenous communities, being an integral part of livelihoods and providing an alternative to involvement in extractive industries. Some experts note that the exploitation of tonka beans is driving conservation efforts for the species involved. Seeds are proposed for inclusion in Appendix II as a Precautionary measure because the impact of current tonka bean trade remains unknown. It has also been argued that, were onerous harvesting restrictions on seeds to be imposed, those who rely on the harvest for their livelihoods might turn to other, possibly destructive, uses of the parent trees, thereby having a negative impact on tree populations.

Several species of *Dipteryx* are traded under the common names Cumaru or Shihuahuaco and are neither distinguishable nor identified to species level in trade. It is not possible to distinguish the individual species within the genus *Dipteryx* using macroscopic or microscopic identification of wood anatomy, although identification of *D. alata*, *D. ferrea*, *D. micrantha*, *D. odorata*, and *D. punctata* using genetic markers is currently possible. Furthermore, *D. alata* and *D. odorata* are “commonly confused” in trade with *Handroanthus* spp., *Tabebuia* spp., and *Roseodendron* spp. traded as “Ipê” and the subject of Prop. 44.

Analysis: Trees in the genus *Dipteryx* are generally slow growing, and most species take a long time to mature (46–177 years), while *D. alata* and *D. punctata* have a faster age of maturity (5–6 years). Due to the slow growth of the main species in trade, the genus is particularly vulnerable to overexploitation, and the primary identified threat to *Dipteryx* is logging for timber. International trade in *Dipteryx* timber appears to be increasing. The seeds of *D. punctata*, *D. odorata*, and *D. alata* are also in trade primarily from Brazil and Venezuela as tonka beans, and it is unclear whether the harvest of seeds negatively impacts the species.

Dipteryx alata appears to meet Criterion B of Annex 2a of Res. Conf. 9.24 (Rev CoP17) on the basis of ongoing and historic decreases of over 30% over three generations driven by deforestation. While *D. odorata* and *D. micrantha* are both assessed as Data Deficient and do not have enough population information available to infer global population trends, they are both perceived to be decreasing and are assessed as threatened in parts of their range, with reported timber exports from Peru being a particular cause for concern, as well as very slow growth rates and age of maturity for both species. *D. oleifera* has been nationally assessed as vulnerable in three range States. Since its listing in Appendix III by Costa Rica (2003) and Nicaragua (2007) low levels of trade have been reported; however, given the generally poor reporting of trade in Appendix III listed species, this may not be an accurate representation of global levels of trade. Based on available information, it is unclear whether or not *D. odorata*, *D. micrantha*, and *D. oleifera* also meet Criterion B of Annex 2a. However, due to the difficulties of identification of timber and trade under the same name, these species meet Criterion A of Annex 2b.

While the remaining species also do not have sufficient population data to determine whether or not they meet the criteria for listing, due to significant taxonomic uncertainty, issues of timber identification, reporting of trade under generic and common names, uncertain distributions in range States, and nationally assessed threat levels, the genus appears to meet Criterion A of Annex 2b. *Dipteryx alata* and *D. odorata* are “commonly confused” with *Handroanthus* spp., *Tabebuia* spp., and

Roseodendron spp. (known as "Ipê") which are proposed for listing in Proposal 44, therefore they would also meet the criteria in Annex 2bA were that proposal to be accepted.

Annotation

From available trade data the products most in trade from range States are timber and timber products and would be covered by the proposed new annotation or by #17. The overall impact of tonka bean harvesting remains unclear, with some considering its harvest contributes to the conservation and management of the species. Therefore, Annotation #17 without the addition of seeds may be more appropriate until strategies to mitigate potential negative impacts on livelihoods, and knock-on effects on forest cover, are developed in accordance with Res. Conf. 16.6 (Rev. CoP18) on *CITES and livelihoods*.

Transfer of *Paubrasilia echinata* from Appendix II to Appendix I with annotation: All parts, derivatives and finished products, including bows of musical instruments, except musical instruments and their parts, composing travelling orchestras, and solo musicians carrying musical passports in accordance with Res. Conf. 16.8.

Proponent: Brazil

Summary: *Paubrasilia echinata*, commonly known as Pau-brasil, Pernambuco or Brazilwood, is a slow-growing leguminous tree, reaching around 15 m in height with a maximum trunk diameter of around 70 cm. It is endemic to the Mata Atlântica (Atlantic Coastal Forest) in Brazil, which is ranked fourth in the list of global biodiversity hotspots. Many aspects of the biology of Pau-brasil and the composition and structure of the plant community in which it occurs are poorly known. The wood of Pau-brasil is currently used worldwide for the manufacture of high-quality bows for musical instruments, for which the species has been exploited for over 200 years. *P. echinata* was classified as Endangered on the IUCN Red List in 1998 and has been assessed as endangered on the list of Brazilian flora threatened with extinction since 1992. The species was originally listed as *Caesalpinia echinata* in Appendix II at CoP14 (2007) with Annotation #10; that name became a synonym of *Paubrasilia echinata* in 2019, following taxonomic changes adopted at CoP18. Annotation #10 includes logs, sawn wood, veneer sheets and unfinished wood articles used for the fabrication of bows for stringed musical instruments, but exempted finished bows. This is the only species subject to this annotation.

Domestic trade in *P. echinata* wood between companies and bow makers within Brazil have been regulated and controlled by the Document of Forest Origin (DOF) since 2006, but there appears to be some uncertainty about the accuracy of records of existing stocks registered in Brazil at the time the Appendix II listing came into force. DOF does not regulate domestic or international trade in bows as finished products, and therefore these do not need to be declared to the authorities and the total number of bows sold and exported per year remains unknown. According to the International Pernambuco Conservation Initiative (IPCI), a new domestic permit requirement for the export of finished bows became effective in June 2022—however reports from Brazil show that permit applications are not yet possible.

No empirical estimates of the natural populations of *P. echinata* across the Atlantic Forest are currently available. The species is fragmented between forest remnants and localised extinctions of subpopulations have been observed. The deforestation of the Mata Atlântica has been intensifying in recent years and over 21,600 ha of the territory were lost to deforestation between 2020 and 2021. The ongoing habitat loss and decline in habitat quality, coupled with exploitation for its wood, strongly suggest the population trend of the species is declining.

The species has been heavily traded for over 500 years, initially as a source of red dye (brazilein) and more recently as timber. Since the early 1800s, the species' wood, which is highly valued for its combination of durability, flexibility and resonance, has been extracted to produce bows for several musical instruments such as violins, violas, cellos, and basses. Overall, it has been estimated that over half a million mature trees were removed over the last five centuries. Trade is international; 92% of production was exported, estimated at more than 127,000 pieces of bow blanks or bows according to data collected during inspections carried out by the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) of companies producing bows. The vast majority of exports are to the USA and Europe and to a lesser extent Asia.

According to an international survey of bow makers in July 2022, the average number of bows made out of *P. echinata* produced every year worldwide is approximately 25,000. Of the 337 bow makers who responded, approximately 91% produce fewer than 50 bows per year and nearly 44% produce fewer than ten.

Harvesting of *P. echinata* in its natural habitat and export is prohibited under Brazilian law (Federal

Law No. 11,428/2006 and Federal Decree No. 6,660/2008) and only wood from planted trees that are registered with the environmental agency or pre-Convention material can be traded. Its designation as endangered on the list of Brazilian flora threatened with extinction, means collection, harvesting, transportation, storage, handling, processing, and commercialisation from natural habitat is prohibited.

In the last five years, investigations by IBAMA and the Federal Police have shown that wood from natural forests has continued to be harvested to supply the growing international market for bows for musical instruments. Since 2018, IBAMA officers seized over 200,000 bow blanks and bows made with illegal (i.e., native) raw wood. The proponent considers that significant trade in illegally sourced wood may have taken place since the species was listed.

The proponent seeks to list the species in Appendix I with an annotation to include all parts and derivatives, including bows of musical instruments, with the exception of musical instruments and their parts, composing travelling orchestras, and solo musicians carrying musical passports in accordance with Res. Conf. 16.8 (now Res. Conf. 16.8 (Rev. CoP17)) on *Frequent cross-border non-commercial movements of musical instruments*. The stated purpose of the Proposal is to recognise the precarious conservation status of the species and to bring trade in finished bows under CITES trade control in order to reduce the opportunity for exports in contravention of Brazilian law. The justification for and intention of an exception for trade under “musical passports” is less obvious.

Analysis: *Paubrasilia echinata* has been subject to extensive historical exploitation for international trade and is affected by habitat loss due to deforestation, agricultural development, and urbanisation. Population estimates are not available, although known native populations are fragmented and small across the species’ range and some subpopulations have disappeared from areas where they used to occur. There is evidence of ongoing international demand in the USA, Europe, and Asia, and instances of illegal trade are being reported. Based on the registered annual rates of deforestation of the species’ natural habitat that contributed to an overall decline of more than 90% of the forest’s historical range, *P. echinata* appears to meet the biological criteria for inclusion in Appendix I of Annex 1 of Res. Conf. 9.24 (Rev. CoP17). Since Brazilian law does not allow the exploitation of *P. echinata* from its natural habitat, and only trade in wood from trees planted and registered with the environmental authorities or recognised as pre-Convention is allowed, the effect of the proposed transfer of this species from Appendix II to I largely relates to the cessation of the current Appendix II exemption for trade in finished products.

On this point, the proposed annotation for the species if transferred to Appendix I is to include “all parts and derivatives, including bows of musical instruments, with the exception of musical instruments and their parts, composing travelling orchestras, and solo musicians carrying musical passports in accordance with Res. 16.8” (now Res. Conf. 16.8 (Rev. CoP17)). Under that Resolution the use of “musical passports” only applies to Appendix I specimens acquired before the species was included in the Appendices, which in this case would be 2007 (the species was listed at CoP14), as well as Appendix II and III listed species. Any movement of post-2007 musical instruments and their parts, unless recognised as from artificially propagated trees, would need to be permitted on a case-by-case basis in compliance with Articles III and VII of the Convention (for example personal and household effects or pre-Convention specimens).

The inclusion of an annotation to an Appendix I listing proposal for a plant species would be unusual. If the intention of the proponent is to subject finished products to CITES trade control, while allowing for use of musical passports in accordance with Res. Conf. 16.8 (CoP17), this could alternatively be achieved by amending the Proposal to retain the species in Appendix II with a change to Annotation #10 to this effect. No other species are subject to this annotation. Brazil could also submit a zero quota for wild-sourced commercial exports to be posted on the CITES website to indicate that trade in wild harvest of the species from Brazil is not permitted.

Inclusion of all African populations of *Pterocarpus* species in Appendix II of CITES with Annotation #17, including already listed species *P. erinaceus* (CoP17, no annotation) and *P. tinctorius* (CoP18, Annotation #6) in accordance with Article II, paragraph 2 (a) of the Convention

Proponents: Côte d'Ivoire, European Union, Liberia, Senegal, Togo

Summary: *Pterocarpus* is a genus of around 40 species native to tropical and subtropical regions worldwide of which 12 are native to Africa. In addition there are disputed reports of a South American species occurring also in Democratic Republic of the Congo (DRC) and one additional African native species is accepted by some botanists. African species are an important source of highly valued timber traded internationally, exported mainly in the form of logs and sawn timber. Commonly used trade names for the timber include “mukula”, “rosewood”, “African Padauk” or “African Padouk”. African species that produce rosewood or other precious hardwoods include *P. angolensis*, *P. erinaceus*, *P. lucens*, *P. soyauxii*, *P. tessmannii* and *P. tinctorius*. *P. erinaceus* is the only African species of the genus officially recognised in China as a “Hongmu” species (formally accepted for the production of rosewood furniture), but others are also considered desirable for furniture production. There has been a major growth in consumption of Hongmu and other “rosewoods” in China since 2010 leading to dramatically increased levels of exploitation in range States. Other genera are also traded with the name rosewood including species of *Dalbergia* (genus listing at CoP18) and *Guibourtia* (three African species listed at CoP18).

Two African species of *Pterocarpus* are already listed in Appendix II. The Endangered species *Pterocarpus erinaceus* was added to Appendix II at CoP17 with no annotation. *P. tinctorius* which is evaluated as Least Concern was added to Appendix II at CoP18 with Annotation #6 (Logs, sawn wood, veneer sheets and plywood). Most of the remaining African *Pterocarpus* spp. are widespread and may be locally common. The exception is the very rare *P. zenkeri*. The taxonomic status of this species is still debated but it is assessed as Endangered. Most other African *Pterocarpus* have been assessed as globally Least Concern since 2018, although several of these species are in significant decline in parts of their range. Species considered to be overexploited for their timber, with unsustainable harvest rates and some local stocks now exhausted include *P. angolensis*, *P. soyauxii*, and *P. tessmannii*.

Pterocarpus angolensis is one of the most valuable timber species in southern Africa harvested for local use and international trade. Intensive harvesting and the lack of natural regeneration have been causes for concern across parts of its range. Current levels of timber harvesting are thought to be unsustainable in various countries, almost certainly exceeding the rate at which harvestable-sized trees are being replenished in the population.

Pterocarpus soyauxii has a wide distribution. It has not yet been evaluated at a global level but has been evaluated as nationally threatened in DRC. The timber is harvested for international trade and it is one of the main species currently recorded in Chinese and Vietnamese markets.

Pterocarpus tessmannii occurs in DRC, Equatorial Guinea, and Gabon. It is exploited for timber and is now listed as globally Near Threatened.

Pterocarpus zenkeri was assessed as Endangered in 2015. It is endemic to Cameroon and is considered to be very rare. Although it is not known to be in trade currently, the similarity with *Pterocarpus soyauxii* may lead to it being harvested either intentionally or accidentally.

Of the other species, some are harvested for timber (*P. lucens*, *P. mildbraedii*, and *P. osun*), but this is uncertain for *P. brenanii*, *P. rotundifolius*, and *P. santalinoides*. The presence of *P. officinalis* in Africa is disputed.

In general, very little species-specific trade data are available for African *Pterocarpus*, and it is unknown how much harvest in each species is for domestic versus international markets. There is evidence of continuing increases in export of processed and unprocessed timber from some range States, largely to meet demand in China for furniture-making. A proportion of this export appears to be unauthorised or illegal. The expansion of demand for Hongmu and other “rosewoods”, has led to an unprecedented interest in Mukula timber in the main producer countries notably Zambia and DRC; with exponential development of logging leading to cumulative extractions estimated as several tens of thousands of m³ in countries including Zambia, DRC, Mozambique, Malawi, and Angola.

There are reports that since the listing of *P. erinaceus*, traders are redirecting attention to other, non-CITES species of *Pterocarpus*. Timber traders appear to be continually searching for substitute species for international trade, working both within and outside the law. Trade generally shifts between African *Pterocarpus* spp. depending on availability and multiple species are commonly traded under the same names. It is difficult to determine trade levels for individual species. In Customs data, most importing countries record imports of “rosewood” as tropical hardwood “not elsewhere specified”.

The timber of African *Pterocarpus* spp. is hard to distinguish. Even the most commonly logged species of African *Pterocarpus* are not easy to identify by loggers, local botanists and forest managers. There are, for example, similarities of appearance between the timber of the CITES-listed *P. erinaceus* and *P. tinctorius*. The sawn timber of *P. tinctorius* is commonly confused with that of *P. angolensis* and *P. soyauxii* and there may be confusion between *P. soyauxii* and *P. tessmannii*.

The Proposal is to list all African populations of *Pterocarpus* species in Appendix II of CITES with annotation #17, including already listed species *P. erinaceus* (CoP17, no annotation) and *P. tinctorius* (CoP18, Annotation #6) in accordance with Article II, paragraph 2 (a) of the Convention. There has been negligible trade of timber products of *P. erinaceus* and *P. tinctorius* reported as originating outside Africa and neither are known to be in plantations outside Africa. One species of Asian *Pterocarpus* would remain in the Appendices with Annotation #7.

Analysis: *Pterocarpus* is a tropical tree genus that produces valuable timber. Twelve species occur in Africa. Based on available information *P. angolensis*, *P. soyauxii*, and *P. tessmannii* appear to meet Criterion B in Annex 2a of Res. Conf. 9.24 (Rev. CoP17). The rare species, *P. zenkeri* appears to meet Criterion A in Annex 2a of Res. Conf. 9.24 (Rev. CoP17).

The most commonly logged species of African *Pterocarpus* are considered to be difficult to distinguish from one another by people involved in the trade, including loggers and forest managers, and by local botanists. Some African species can be distinguished using chemical and anatomical approaches, but it is extremely difficult, if not impossible, to distinguish African *Pterocarpus* species based on the wood anatomical features alone. As *P. erinaceus* is currently listed in Appendix II and believed to be affected by trade, all other African species therefore meet the lookalike criteria for listing in Appendix II provided in Annex 2b of Res. Conf. 9.24 (Rev. CoP17).

Previously listed species of the genus (*P. erinaceus* and *P. tinctorius*) are included in the Appendices regardless of where their populations are so that plantations outside their natural range are included. Were this proposal to be accepted, populations outside their natural range would no longer be included in the Appendices. Neither *P. erinaceus* nor *P. tinctorius* are known to be in plantations outside Africa this amendment to their listing should have no conservation impacts.

Annotation

Pterocarpus erinaceus was listed in CITES Appendix II without annotation. Almost all trade in the species since then has been reported by exporters in terms that are covered by Annotation #17. Experience with CITES listings of other rosewood species (e.g., see CoP17 Prop 53) has demonstrated that other annotations have been circumvented through minimal transformation of wood products. Inclusion of transformed wood would prevent this.

The current annotation for *P. tinctorius* is Annotation #6: “Logs, sawn wood, veneer sheets and plywood”. The change in annotation would mean that transformed wood would also come under CITES controls, again ensuring against circumvention seen with *Dalbergia cochinchinensis*.

The proposal to apply the Annotation #17 to all African populations of *Pterocarpus* spp. (including *P. erinaceus* and *P. tinctorius*) appears to be appropriate given that logs and sawn wood are the main products that are traded internationally and the inclusion of other forms of worked wood would prevent loopholes. If all African *Pterocarpus* spp. were covered by the same annotation, this would be an aid to enforcement. One species of Asian *Pterocarpus* would remain in the Appendices with Annotation #7.

Summary of Available Information

Text in non-italics is based on information in the proposal and Supporting Statement (SS), text in italics is based on additional information and/or assessment of information in the SS.

Taxonomy

There are 12 African species of the genus *Pterocarpus* according to the African Plant Database. An additional species, *Pterocarpus zenkeri* Harms, is not recognised by some taxonomists. According to the African Plant Database. “*P. zenkeri* is a doubtful species very similar to *P. osun*”. *Pterocarpus zenkeri* has however been assessed for the IUCN Red List. *The presence of P. officinalis in Africa is disputed.*

IUCN Global Category, Range and Population Trend

Table 1. IUCN assessment, distribution range and population status for African *Pterocarpus* species (Sources Supporting Statement, IUCN Red List Assessments and GlobalTreePortal).

Species	IUCN Global Category	Range	Population trend	Harvested for timber
<i>Pterocarpus angolensis</i>	LC (2018)	Angola, Botswana, Congo, DRC, Eswatini, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia, Zimbabwe	Decreasing in parts of its range	Yes
<i>Pterocarpus brenanii</i>	LC (2018)	Malawi, Mozambique, Zimbabwe, Zambia (<i>Malawi is not included in GlobalTreePortal</i>)	Unknown	Unknown
<i>Pterocarpus erinaceus</i>	EN (2020)	Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal, Togo (<i>Gabon is also included in GlobalTreePortal</i>)	Decreasing	Yes
<i>Pterocarpus lucens</i>	LC (2012)	Angola, Botswana, Cameroon, Chad, Congo, DRC, Ethiopia, Ghana, Guinea, Guinea-Bissau, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Senegal, Sudan, Uganda, Zambia, Zimbabwe (<i>Congo, Guinea-Bissau, Malawi, Nigeria and Zimbabwe are not included in GlobalTreePortal whereas Burkina Faso and South Africa are included</i>)	Stable	Yes
<i>Pterocarpus mildbraedii</i>	LC (2022)	Benin, Cameroon, Côte d'Ivoire, Equatorial Guinea, Gabon, Ghana, Liberia, Nigeria, Sierra Leone, Tanzania. Records for DRC are based on misidentification. <i>The distribution given in GlobalTreePortal also includes the Central African Republic, Congo, Togo</i>	Unknown	Yes
<i>Pterocarpus officinalis</i>	<i>Presence in Africa is disputed. The published assessment for the species, native to the</i>	DRC (pantropical as Plants of the World Online suggests “Mexico to tropical America”). <i>The distribution of this species does not include Africa (GlobalTreePortal, Barstow and Klitgård, 2018)</i>	Presence in Africa is disputed. Decreasing elsewhere	Yes

Species	IUCN Global Category	Range	Population trend	Harvested for timber
	<i>Caribbean, Central and South America, is NT (2018).</i>			
<i>Pterocarpus osun</i>	LC (2020)	Cameroon, Equatorial Guinea, Nigeria. <i>The distribution of this species does not include Equatorial Guinea (Global Tree Portal, Barstow, 2020)</i>	Unknown	Yes
<i>Pterocarpus rotundifolius</i>	LC (2019)	Angola, DRC, Malawi, Mozambique, Tanzania, Zimbabwe, Zambia. <i>The distribution includes Botswana, Eswatini, Namibia, South Africa (Global Tree Portal, Botanic Gardens Conservation International (BGCI) & IUCN SSC Global Tree Specialist Group, 2019a)</i>	Stable	Unknown
<i>Pterocarpus santalinoides</i>	LC (2019)	Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Togo. Also widespread in South America. <i>This species also occurs in Gambia (Global Tree Portal, Botanic Gardens Conservation International (BGCI) & IUCN SSC Global Tree Specialist Group, 2019b)</i>	Stable	Unknown
<i>Pterocarpus soyauxii</i>	Draft assessment LC	Angola, Cameroon, Central African Republic, Congo, DRC, Equatorial Guinea, Gabon, Nigeria		Yes
<i>Pterocarpus tessmannii</i>	NT (2022)	DRC, Equatorial Guinea, Gabon. <i>Also in Guinea (GlobalTreePortal)</i>	Unknown	Yes
<i>Pterocarpus tinctorius</i>	LC (2018)	Angola, Burundi, DRC, Malawi, Mozambique, Tanzania, Zambia	Decreasing	Yes
<i>Pterocarpus zenkeri</i>	EN (2015)	Cameroon (<i>GlobalTreePortal</i>). <i>This is a Cameroon endemic known only from two localities: Yaoundé (Central Region) and Dikop near Eseka (South Region) (Cheek, 2015)</i>	Decreasing	Possibly

Biological and trade criteria for inclusion in Appendix II (Res. Conf. 9.24 (Rev. CoP 17) Annex 2a)

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

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

Africa has 12 *Pterocarpus* species; the presence of one, *P. officinalis*, is disputed. An additional species is recognised by some botanists. Various species produce rosewood or other precious hardwoods, including *P. angolensis*, *P. lucens*, *P. mildbraedii*, *P. osun*, *P. soyauxii*, *P. tessmannii*, and *P. tinctorius*. Several species are traded under the same common name "Padouk" (*P. mildbraedii*, *P. soyauxii*, *P. tessmannii*, and *P. tinctorius*). Currently two African *Pterocarpus* species (*P. erinaceus* and *P. tinctorius*) are listed in CITES Appendix II. Between 2010 and 2014, China registered a 700% increase in the import of African rosewood logs and sawn wood. Rosewood is a commercial term encompassing hardwood species harvested to produce Chinese traditional Hongmu furniture. Trade in rosewood has been characterised by a shifting supply between different countries and species. African rosewood imports comprised nearly half of these rosewood imports. High-value rosewood was traditionally produced from *Dalbergia* species, but the overwhelming demand from China and the increasing rarity of Asia's Hongmu species combined with stricter conservation measures and enforcement of logging regulations forced the trade to turn progressively towards similar alternative species and in particular the *Pterocarpus* genus.

Pterocarpus erinaceus

This species is the only African species of *Pterocarpus* on the list of 29 species officially designated as Hongmu under China's National Hongmu Standard (2017). The Standard can be legally enforced in relation to product marketing claims, and has played a key role in guiding the choice of materials in rosewood product manufacturing and consumption (Forest Trends, 2020). Viet Nam has also historically been a key market for rosewood, but imports dropped dramatically between 2015–2020, then stopped altogether in 2021. Viet Nam is the world's second-largest importer of African timber after China, with imported *P. erinaceus* largely processed into rosewood furniture for export to China. There are reports that following the listing of *P. erinaceus*, traders are redirecting their attention to other, non-CITES species (Wilmé et al., 2020). Timber traders appear to be continually searching for substitute species to exploit internationally, working both within and outside the law (UNODC, 2020). At the same time, harvesting of *P. erinaceus* continues to cause population declines. There has, for example, been a decline of about 50% in the population of *P. erinaceus* outside conservation areas between 2013–2021 (Forestry Commission of Ghana, 2021).

Other species considered to be over-exploited for their timber with many local stocks now exhausted include *P. soyauxii*, *P. tinctorius*, and *P. tessmannii*, which is now listed as Near Threatened. The very rare and Endangered *P. zenkeri*, endemic to Cameroon, is potentially harvested for its timber either intentionally or due to mistaken identity with *Pterocarpus soyauxii*.

Pterocarpus angolensis

This species is among the most important indigenous timber species in southern Africa. Its wood is known under many local names, such as umbila, muninga, mukwa, kiaat, and girassonde. It is sought after for carving, furniture and flooring because of its grain, colour, durability and stability, and is the most widely exploited wood in southern Africa (De Cauwer et al., 2017). The extensive trade in this wood on national and international markets has caused it to become depleted from some areas. Across parts of its range the largest and most mature trees are at risk from overexploitation for timber causing decline in some subpopulations outside of protected areas and sometimes inside protected sites due to both legal and illegal logging activity. In areas of extraction the size structure of subpopulations has become truncated, with smaller trees (often under 30 cm dbh) being much more common than those of larger size. This reduces the amount of seed being produced by the population causing concern about the impact this might have on regeneration at some sites (Barstow and Timberlake, 2018). Harvesting in Tanzania has been at a rate that could reach "economic extinction". There is little trade data available for this species: 5,000 m³ are reported to have been exported from Zambia. The biggest importers of the timber are Thailand and China. This tree can also be used for medicinal purposes (Barstow and Timberlake, 2018).

The species is threatened by land-use changes, overharvesting and/or frequent intense fires in many countries. In addition, climate change is expected to decrease the distribution range, especially where climate projections predict a decrease in summer rainfall. These threats affect the species' wood availability as the tree grows only in natural mixed forests. In contrast to the importance of its timber, information on *P. angolensis* is not sufficient to support forest management, especially data on population dynamics and productivity. More knowledge on the productivity of *P. angolensis* would allow improved forecasts of its growth, mortality, recruitment, and timber yield (De Cauwer et al., 2017).

Pterocarpus angolensis has been evaluated as of national concern in Angola. This dry forest species has a large proportion of its global range concentrated in Angola where it occurs in areas that are affected by high and increasing deforestation rates and relatively low tree cover. It has been proposed as one of 11 timber species of high priority for conservation attention in Angola (Romeiras et al., 2014).

While unsustainable or illegal logging only accounts for 9% of the net annual deforestation rate in Mozambique, there are also concerns over the potentially complete depletion of commercial species over the next 15 years. For example, more than half the volume of the commercial species harvested belong to just three species including *Pterocarpus angolensis* (umbila). Based on customs import and export data, the rate of harvesting for this species exceeds the higher limit of Mozambique's annual allowable cut (Macqueen, 2018). In the first quarter of 2014, Mozambique became the largest African supplier of imported timber to China. China was the destination for 93% of Mozambique's timber exports (Macqueen, 2018). Most exports of the main timber species exported are logs or low value-added products. Trees larger than the minimum permitted diameters have become difficult to find due to the pressure on logging, which incentivises cutting trees below those limits. Lack of information is also a problem since local tree fellers simply cut trees first and try to sell to those who show interest afterwards. Any wood not bought by Chinese operators is bought by local carpenters for furniture production—except curved or split wood, which is often abandoned in the forest (Macqueen, 2018).

Pterocarpus angolensis (Kiaat) was declared a protected species in Namibia in 1952. Its status as a protected species was listed in the regulations to the Forest Act 2001. Within Namibia, permit data indicate that Kiaat is used to produce planks, blocks, sawn timber and wood carvings. Its status as a protected species was listed in the

regulations to the Forest Act 2001. This species is also protected in Botswana, Malawi, Zimbabwe, Eswatini, Zambia, and South Africa (Nott et al., 2020).

Pterocarpus angolensis is considered to be vulnerable in Malawi, when considering wild populations, and vulnerable in Namibia and Zimbabwe when considering the species as an economic entity. However, in Zimbabwe the species as a whole is considered at low risk of extinction and within South Africa the species is assessed as least concern (Barstow and Timberlake, 2018).

In Tanzania, an 80% decline in population is estimated based on seed collection data between 2000–2020 with an estimated 85% decline in use and trade in 94 local timber yards surveyed (Mashimba, in litt., 2022).

Pterocarpus lucens

This species has a wide distribution in two bands across tropical Africa from Senegal to Ethiopia and Angola to Mozambique. It was evaluated as Least Concern globally in 2012 with a stable population. It is not recorded as nationally threatened for any country (GlobalTreePortal, 2022), but has been recorded as threatened at the population level in Burkina Faso, Niger, and Senegal (Winfield et al., 2016). It is apparently widely exploited both for a variety of local uses and the international timber trade.

Pterocarpus soyauxii

This species was among the first timber species to be exported from Gabon. Between 2000–2003, Gabon exported 120,000 m³ of *P. soyauxii* logs annually. Since 2010 the export of logs has been banned by Gabon.

Padouk was the second most important timber exported from Gabon by volume 2007–2017 (all commodities combined) with a volume of 1,194,407 m³ (Mahonghol et al., 2020). Much of this is presumably *P. soyauxii*, which is listed as one of the 24 species currently harvested (Timber Trade Portal, 2022). *Pterocarpus soyauxii* is one of the main timbers produced in DRC and in the Congo (Timber Trade Portal, 2022).

The timber of *P. soyauxii* is one of the main African *Pterocarpus* species currently recorded in trade within China. In Kunming it is recorded with other rosewood species such as *P. erinaceus*, *P. tinctorius* and *Guibourtia* spp. and is traded as hewn logs and squared timber having been brought into China mainly through Zhangjiagang (Zhang and Chen, 2022b). This species also comprised around 80% of African rosewood imports to Viet Nam during 2018–2022 with a value of USD62 million (Panjiva, 2022).

A draft global conservation assessment has been undertaken for *P. soyauxii* that is unlikely to raise conservation concerns (Barstow, in litt., 2022). Despite the potential threat to the species from timber use, the species has a wide range and large population and regenerates well (Doucet, in litt., 2022). Nevertheless, *P. soyauxii* has been evaluated as nationally threatened in DRC with threats including logging, shifting agriculture and other forms of land degradation (Kiyulu and Rodrigues, 2014).

Pterocarpus tessmannii

This species is exploited for timber and traded with other *Pterocarpus* species as “African padouk”. More research is needed into the extent and impact of this (Hills, 2021). There is no known information on its conservation status at a national level in DRC, Gabon, or Equatorial Guinea.

Other species

Very limited information appears to be available on levels of trade and the impact of exploitation for *Pterocarpus brenanii*, *P. lucens*, *P. osun*, *P. rotundifolius* and *P. santalanoides*. Bans on exports of *P. lucens* are however in place in several countries giving possible indications of concerns about levels of exploitation.

In the Central African Republic, only 34 “species” found in the closed forest area are typically harvested including Padouk (*Pterocarpus* spp.) but these are not amongst the most heavily traded (Timber Trade Portal, 2022).

International trade in *Pterocarpus* spp. is poorly documented by importing countries. Because there is no universal definition of “rosewood”, there are no global statistics on the rosewood market. In most national systems, imports are typically registered as tropical hardwood “not elsewhere specified”. Most of the rosewood species used for Hongmu come from the *Dalbergia* and *Pterocarpus* genera (UNODC, 2020).

Inclusion in Appendix II to improve control of other listed species

A) Specimens in trade resemble those of species listed in Appendix II under Res. Conf. 9.24 (Rev. CoP17) Annex 2 a or listed in Appendix I

Despite their listing in CITES Appendix II, *P. erinaceus* and possibly *P. tinctorius*, are still subject to illegal logging and trade, notably because existing exports are mislabelled as other non-CITES species of the genus.

A paper submitted by the Scientific Authorities of Germany and Belgium at CITES PC24 in 2018 noted that the expansion of Hongmu demand has led to an unprecedented interest in Mukula timber in the main producer countries notably (but not exclusively) Zambia and DRC; with exponential development of the logging marketing chain leading to cumulative extractions estimated as several tens of thousands of m³ in countries including Zambia, DRC, Mozambique, Malawi, and Angola, although no precise assessment of the volumes involved is available. In some places, there may be problems regarding the legality and sustainability of the logging operations. Although the extraction of Mukula timber affects several species in the genus *Pterocarpus*, they are not differentiated or are poorly differentiated by loggers and traders in the international markets. Empirical observations indicate that several of these species are in critical decline in numerous regions of the countries within their range (PC24 Doc. 19.2, 2018).

Even the most commonly logged species of African *Pterocarpus* are often not easily distinguishable from one another by loggers, local botanists and forest managers. There are reported confusions between *P. soyauxii*, *P. tessmannii*, and *P. castelsii*. The latter, not accepted by taxonomists but anyway recorded in the field, refers to *P. soyauxii* or *P. tessmannii*, adding even more confusion. Although some of the species have recently been distinguished from one another thanks to a combination of chemical and anatomical approaches, it is extremely difficult, if not impossible, to distinguish African *Pterocarpus* species based on the wood anatomical features alone.

As some of the *Pterocarpus* species are not clearly distinguishable, and there is evidence that two currently CITES-listed *Pterocarpus* species might be traded under the label of non-CITES listed species, it is also proposed that the African species in the genus are included in Appendix II under Criterion A of Annex 2 b of Resolution Con. 9.24 (Rev. CoP17), or the lookalike provisions.

There are similarities of appearance between the timber of P. erinaceus and P. tinctorius. Trade shifts between African Pterocarpus spp., depending on availability, and multiple species are commonly traded under the same names as has been seen with other rosewoods such as Dalbergia spp. and Guibourtia spp.

Although the extraction of Mukula timber affects several species in the genus Pterocarpus, they are not differentiated or are poorly differentiated by loggers and traders in international markets (PC24 Doc. 19.2, 2018). In Zambia more research is needed to clarify the botanical characteristics of what goes under the name Mukula. The mechanisms underpinning the market in this timber move away from targeted species and countries, targeting instead lesser known species or new geographies altogether. The recent documented cases of Mukula harvesting in DRC, Malawi and other countries illustrate this (Cerutti et al., 2018). The sawn timber of P. tinctorius is similar in appearance to that of P. angolensis, P. soyauxii or P. castelsii. All these species are referred to locally as Mukula as reflected in the Namibian Department of Forestry in-transit permit data. Many consignments of this timber are transported through Namibia from Zambia and the DRC for export to China (Nott et al., 2020).

Background to annotation amendments

P. erinaceus was listed at CoP17 with no annotation meaning that all readily recognisable parts are included in the listing. The majority of trade reported by exporters has been in logs (>204,000 m³), sawn wood (1,106,000 m³) with only 550 kg and 45 m³ of wood products. Significantly higher quantities have been reported by importers but with the same products dominating the trade. No trade has been reported of transformed wood by exporters although importers have reported around 200 m³.

P. tinctorius was listed at CoP18 with Annotation #6, including logs, sawn wood, veneer sheets and plywood. Since then, exporters have mostly reported exports of timber, sawn wood and logs. Only 2 kg of wood products have been reported by importers and no trade in transformed wood has been reported, although this would not have been covered by the current annotation.

Additional information

Threats

African Pterocarpus spp. also provide a range of medicinal products harvested for local use. Overharvesting may be a threat locally. The viability of existing wild P. angolensis populations is threatened, not only due to extensive harvesting of its bark for medicinal purposes or as fuel wood, but also owing to establishment problems resulting from seedling failure after germination. It has been estimated that only 2% of fruits produce seedlings in a given year, with just half of those seedlings surviving the first year of growth. Successful seed germination appears to depend on wildfires that remove the wings and bristles from pods, crack the seed and improve contact with the soil (Sadiki et al., 2018).

De Cauwer et al. (2016) considered the environmental drivers of change in the transition zones of woodlands in Namibia. Their study concluded that while Kiaat communities were better able to withstand high fire frequency than other communities, they show a higher vulnerability to climate change.

Pterocarpus mildbraedii is reported to be threatened by deforestation and urbanisation.

Conservation, management and legislation

In Cote d'Ivoire, Decree No. 2013-508 of 25 July 2013 bans the exploitation, cutting, transport, marketing and export of all Pterocarpus spp. (UNEP-WCMC, 2020).

Benin has prohibited the export of all timber species in their raw form, including Pterocarpus erinaceus, a protected species since 2005, with only finished products permitted in trade. Burkina Faso has prohibited the export of all logs and processed products of Pterocarpus erinaceus and P. lucens since 2005. Cameroon has banned log exports of rosewood species found in the country since 1999. Ghana has banned the harvesting and export of P. erinaceus and P. lucens since 2014 (Zhang and Chen, 2022a).

In view of the rapid increase in the trade of P. erinaceus, Ghana has established domestic regulatory mechanisms to manage and monitor the populations of P. erinaceus. This includes the adoption of a quota system to regulate the harvest and trade and ensure sustainable trade and conservation of the species in the wild. Enforcement of a national ban on harvesting and export of P. erinaceus and plantation development programmes have been put in place.

Artificial propagation

Attempts to establish plantations of P. angolensis have been largely unsuccessful. More knowledge on the productivity of P. angolensis would possibly assist in establishment of plantations as well as allowing improved forecasts of its growth, mortality, recruitment and timber yield for sustainable management in natural forests (De Cauwer et al., 2017).

Implementation challenges

The CITES listing of P. erinaceus has led to significant implementation challenges. In October 2018, the CITES Standing Committee decided to suspend trade in P. erinaceus from Nigeria until the Party made a scientifically based non-detriment finding (NDF) to the satisfaction of the Secretariat and PC Chair. Given the high volumes of trade, a Significant Trade Review was carried out for the species. UNEP-WCMC was commissioned to undertake reviews of P. erinaceus trade for all 17 range States for consideration by the CITES Plants Committee. All range States were consulted and asked to provide information on the scientific basis by which they had established that exports were non-detrimental and compliant with Article IV, including details on the population status and threats to the species within their country, together with information on trade, legal protection, and management actions. The study concluded that no range State of P. erinaceus demonstrated that the provisions of Article IV were being met. Further guidance and capacity building in relation to timber NDFs are therefore required across all range States to ensure that any future exports are science-based and that ongoing adaptive management is in place (UNEP-WCMC, 2020).

Subsequently at the March 2022 Standing Committee, the Secretariat was asked to open an Article XIII procedure for P. erinaceus for all range States based on the exceptional circumstances due to pervasive documented illegal trade. As a consequence of this and analysis of the responses from the range States, a suspension was put in place in June 2022 for all commercial trade in P. erinaceus from those Parties that did not reply or did not provide a satisfactory justification while other range States adopted a voluntary zero quota (See: Notification to the Parties No. 2022/045).

It is not clear to what extent range States currently have inventory data for Pterocarpus spp. but partial information is available as highlighted in Winfield et al. (2016) to guide NDF decisions. This report notes that a surprising amount of information was available for a number of Pterocarpus species in Africa, mainly the highly exploited species P. erinaceus, P. lucens, and P. angolensis. However, even these studies were restricted to selected populations, thus leaving large data gaps. Without even a basic understanding of existing standing stocks and their structure it is difficult to ascertain what a sustainable level of harvest would or could be for any of these species. Some Inventory data are available: for P. angolensis in Namibia and large-scale inventories for P. soyauxii have been carried out in central African countries.

Law enforcement in the forest sector in various African countries is perceived as in need of strengthening. The forest sector in Mozambique, for example, has about 630 inspectors, which is far below the ideal minimum of 1,800 to allow adequate monitoring. Despite recent purchases of more vehicles for inspectors, agent recruitment and training, and more fixed inspection posts, only a small number of transgressors, vehicles and containers have been seized in recent years (Macqueen, 2018).

There is a risk that consignments of African Pterocarpus timbers will be mislabelled as species not included in the CITES Appendices, such as the Asian species P. macrocarpus and P. indicus, which are both listed on the IUCN Red List as Endangered with the main threat being overexploitation for timber. There is potential for mixing of different species in the process of transshipment involving various countries in Africa and Asia.

Potential risk(s) of a listing

The timber sector is of major importance to African economies in terms of employment and socio-economic development. All aspects of forestry and sustainable wood utilisation are important within the range States. Livelihood implications need to be considered. In parts of Africa, the uncontrolled expansion of logging of Pterocarpus spp. has been made possible by the extreme poverty of the rural populations, for whom the purchase prices proposed by intermediaries are an unparalleled windfall, despite being very low (PC24 Doc. 19.2, 2018).

There is a potential risk of the trade shifting to other non-CITES species that produce similar timber. Furthermore, a significant proportion of the range of Pterocarpus santalinoides is in South America where populations would not be included in the listing. Although Pterocarpus officinalis is considered within the listing proposal as an African species, the range is actually Caribbean, Central, and South America. Trade in these populations would not be included in the listing.

Potential benefit(s) of listing for trade regulation

The two African species of Pterocarpus currently listed in CITES do not have overlapping distributions. The range States for the two species include 25 countries. The inclusion of all African species of the genus would increase the number of range states (notably adding Eswatini, Ethiopia, Namibia, South Africa, and Zimbabwe) and potentially strengthen trade controls on cross-border trade within Africa. Currently illegal Mukula extraction is considered a regional issue with significant extraction in southeastern DRC, Zambia, and northeastern Angola. Trucking routes are documented towards ports on the Atlantic (Angola, Namibia, and South Africa) and Pacific (Tanzania and Mozambique).

Efforts to improve sustainable forest management and promote certification are underway at a national and regional level in African countries. CITES listing could reinforce these efforts. Furthermore, it could establish necessary controls required for more effective data gathering on trade and support regional collaboration in data sharing and transparency as recommended by Mahonghol et al. (2020).

In China, the implementation of laws, regulations and administrative measures relating to rosewood (including Pterocarpus spp.) is ultimately guided by the species listed in the CITES Appendices. Listing of all African Pterocarpus species in Appendix II will strengthen the legislation and policy framework for Pterocarpus use in China, the main importing country. The Chinese rosewood industry has already initiated some informal discussions around the listing of all Pterocarpus in the CITES Appendices.

China has adopted stricter domestic measures than CITES to strengthen the trade control of imported CITES wood species by requiring a CITES import permit certificate for Appendix II species. Exporters are obliged to obtain a CITES export permit issued by the Management Authority of the exporting country in accordance with the requirements of CITES. They must also apply to the China CITES Management Authority in advance and obtain the CITES import permit certificate. These documents are checked by China customs. Before issuing the import permit, the CITES Management Authority will contact the CITES Secretariat or the CITES Management Authority of the exporting country for verification of the authenticity and validity of any CITES permit/certificate prior to the issuance of the import permit certificate (Zhang and Chen, 2022a).

CITES listing would provide a clearer picture of the international trade in African Pterocarpus timber as part of the global rosewood market. Currently, because there is no universal definition of "rosewood", there are no global statistics on the rosewood market. In most national systems imports are typically registered as tropical hardwood "not elsewhere specified". While traditional rosewoods have many uses, today most of the trade refers to tropical hardwoods suitable for making traditional furniture in the Asian style, typically referred to as Hongmu. Most of these rosewood species come from the Dalbergia and Pterocarpus genera (UNODC, 2020).

Other comments

Pterocarpus is within the scope of certification schemes: the FSC Certificates Public Dashboard records certificates for the genus relating to Cameroon and Gabon.

Viet Nam is the second-largest importer of African timber beyond China, with imported P. erinaceus largely processed into rosewood furniture for export to China. In 2019, Viet Nam signed a bilateral trade agreement, the Forest Law, Governance, Enforcement and Trade Voluntary Partnership Agreement (FLEGT-VPA), with the EU, which contained a commitment to ensure that wood products are legally sourced. In 2020, a Decree was issued on the Viet Nameese Timber Legality Assurance System (VNTLAS), stipulating that for countries and species deemed "high-risk," importers must provide additional documentation demonstrating legal compliance and undertake due diligence (Treanor, 2022).

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Inclusion of African populations of *Khaya* spp. in Appendix II with annotation #17 “Designates logs, sawn wood, veneer sheets, plywood and transformed wood.”

Proponents: Benin, Côte d'Ivoire, European Union, Liberia, Senegal

Summary: The genus *Khaya* consists of tree species native to tropical and subtropical Africa, Madagascar, and the Comoros. Five species are currently recognised: *K. anthotheca*, *K. grandifoliola*, *K. ivorensis*, *K. madagascariensis*, and *K. senegalensis*. A sixth species, *K. comorensis*, is subject to debate. A taxonomic revision of *K. anthotheca* is underway following a recent study based on genetic markers and morphological analysis.

The proposal covers African populations of the genus *Khaya*. No species within the genus are native elsewhere. Plantations of *Khaya* have been developed in Africa and in various countries outside this region, including Australia, Brazil, Indonesia, Malaysia, and Sri Lanka. These plantations are thought to be relatively small and may not yet be important sources of timber for international trade. *Khaya* spp. are all large trees that grow up to 60 m in height for the largest species (*K. anthotheca* and *K. ivorensis*). They produce some of Africa's most valuable timber for the international market traded under various names, notably as African Mahogany or Acajou. Logs, sawn timber and veneer are amongst the products exported from a range of African countries. The wood is used for boat building, construction, carpentry, panelling, flooring, furniture, veneer and plywood. It has been imported to Europe from West Africa since the late 19th century, with Central African countries later becoming an important source. The EU, USA, and China are currently among the major importers.

The timber of four of the five currently recognised *Khaya* spp. (*K. anthotheca*, *K. ivorensis*, *K. grandifoliola*, and *K. senegalensis*) is traded internationally, placing significant pressures on wild populations. These species are widespread in Africa but considered globally threatened because of population declines resulting primarily from commercial logging. They were all classified as Vulnerable in the IUCN Red List assessments in 1998 and are currently being re-assessed. Population density is generally considered to be low for *Khaya* spp.

The fifth species, *K. madagascariensis*, has been heavily exploited in the past so that commercial stocks are no longer available; it has an estimated population of 1,400 mature individuals, in approximately 14 subpopulations. The IUCN Red List assessment of 2020 classified it as Vulnerable based on past population declines of over 30% in three generations as a result of exploitation for timber.

- ***K. anthotheca*** is widespread in various forest types. It is harvested commercially for timber, traded as African Mahogany, *Khaya* or Acajou and has a declining population.
- ***K. grandifoliola*** occurs in semi-deciduous forest in countries extending from Guinea to Uganda. It has a declining population, and it is harvested commercially for timber, traded as African Mahogany, *Khaya* or Acajou.
- ***K. ivorensis*** is widespread occurring in evergreen and semi-deciduous forest with high rainfall. It is the most exploited species of the genus because its wood is regarded as of better quality than that of other species.
- ***K. madagascariensis*** is endemic to Madagascar and the Comoros. The population has declined due to timber exploitation in the past. There are no recent recorded exports.
- ***K. senegalensis*** is widespread in West and Central African savanna areas. The population has declined at least in parts of its range. It is harvested commercially for timber traded as African Mahogany, *Khaya* or Acajou.
- ***K. comorensis*** is not generally accepted as a distinct species. It is recorded from Comoros. There is no information known on its population size, trend or utilisation and trade.

No comprehensive global trade data exist for *Khaya* spp., however, from available, partial information from exporters and importers, Cameroon, Congo, and Côte d'Ivoire, Democratic Republic of the Congo (DRC), Gabon, and Ghana appear to be the main exporters of *Khaya* timber. Trade data, reported as sawn wood or similar, are not disaggregated to species, but *K. anthotheca*, *K. grandifoliola*, *K. ivorensis*, and *K. senegalensis* occur in all or some of these countries. Other species traded as African Mahogany include *Entandrophragma* spp. which are in the same botanical family. The African species of the unrelated genus *Azelia* (the subject of proposal CoP19 Prop. 46) are also sometimes traded as African Mahogany.

Khaya spp. are regarded as indistinguishable from one another based on macroscopic features of their wood and also, according to the Supporting Statement (SS), based on microscopic wood characteristics. Generally, the timber of *Khaya* spp. is mixed in international trade shipments. The wood of *Khaya* spp. is easily mistaken for that of the CITES-listed *Swietenia* spp.

Analysis: Four of the five currently recognised *Khaya* species are widespread African trees that have been heavily harvested for their timber, in some cases for long periods (the fifth is *K. madagascariensis*, endemic to Madagascar and the Comoros). There are reports of declining populations as a result of harvest in a number of different range States. As a result all four species were classified as Vulnerable by IUCN in 1998 (*K. madagascariensis* was assigned the same status in 2020). However, apart from *K. madagascariensis*, there are no known national population estimates or stock assessments for the species. Nevertheless, harvesting and export has continued which is likely to have led to further depletion and in some cases exhaustion of harvestable stocks as is the case with *K. madagascariensis* which is no longer known to be in trade. There are strong indications that timber producing specimens of four (*K. anthotheca*, *K. grandifoliola*, *K. ivorensis*, and *K. senegalensis*) species are currently harvested unsustainably in sometimes large parts of their range, increasing their vulnerability to other important threats and therefore meeting Criterion B of Annex 2a Res. Conf. 9.24 (Rev. CoP17).

Given the similarity of appearance and the mixing of timbers in trade, other members of the genus would meet the lookalike criteria in Annex 2b of the Resolution. Plantations of *Khaya* have been developed in Africa and in other countries including Australia, Brazil, Indonesia, Malaysia, and Sri Lanka. Trade from plantations outside Africa would not be included under this listing, but trade from plantations within Africa would be included. The size of the African plantations and the extent to which they supply the global timber market is not known.

Available trade data for African Mahogany indicate that exports are mainly sawn wood or similar products. Annotation #17 Logs, sawn wood, veneer sheets, plywood and transformed wood would cover the products that are traded internationally from Africa. Furthermore, the inclusion of transformed wood would ensure that loopholes exploited for other timber species by minimal processing (See CoP17 Prop. 53) are closed.

Amend the Annotation (#4) to the listing of Orchidaceae included in Appendix II with the addition of new paragraph g), to read: “(g) finished products packaged and ready for retail trade of cosmetics containing parts and derivatives of *Bletilla striata*, *Cycnoches cooperi*, *Gastrodia elata*, *Phalaenopsis amabilis* or *Phalaenopsis lobbii*”

Proponent: Switzerland

Summary: The proposal concerns the exemption of finished products packaged and ready for retail trade of cosmetics containing parts and derivatives of five orchid species (*Bletilla striata*, *Cycnoches cooperi*, *Gastrodia elata*, *Phalaenopsis amabilis* and *Phalaenopsis lobbii*) by adding a new paragraph (g) to existing annotation #4, applying to the Appendix II listing for Orchidaceae.

Studies of various orchid species by Switzerland and China concluded that all five species to which the annotation would apply are artificially propagated in large numbers to supply the cosmetic and personal care industry. There was no evidence that wild harvested plants were used in the manufacture of such products. In consequence wild populations would not be detrimentally affected by the exemption proposed.

The proposal states that “it is highly unlikely that any wild-harvested specimens of these species are used by this industry, which relies heavily on a regular and consistent supply of specimens of uniform quality, and this can only be achieved with large-scale artificial propagation.” A rapid review of the CITES trade data confirms that most of the trade in cosmetics in the five species has been reported as of artificially propagated source. Records also show that cosmetics are not the first specimens to appear in international trade as exports from range States. From 2009 to 2020, there were only a few records of exports by range States of cosmetics containing *Bletilla striata* (Republic of Korea) and *Gastrodia elata* (Republic of Korea and the Democratic People’s Republic of Korea) amounting to less than 15 kg each, all reported to be produced from artificially propagated specimens.

At CoP18 the Parties adopted a definition of cosmetics. However, the Secretariat raised concerns that there was still some ambiguity between the potential overlap between cosmetics and externally applied medicines, which could lead to ambiguities in the categories of products that are included in, or excluded from, the proposed definition. None of the five orchids involved in this proposal appear to be traded as externally applied medicines, so this ambiguity would not affect the implementation of the proposed amendment.

At its 25th meeting the Plants Committee noted Switzerland’s intention to submit a proposal on this matter. Initially, the intention was to specify that the exemption would apply to source code A or Y. The 74th Standing Committee suggested that the packaging should clearly state the full scientific name and a declaration of “artificially propagation”, however, outreach to the cosmetic and personal care industry concluded that this would be impracticable and challenging to implement.

Analysis: Considering that cosmetics containing parts and derivatives of the five orchid species proposed to be exempted from CITES regulations are all sourced from artificially propagated specimens, and that only cosmetics containing two of the species (*Bletilla striata* and *Gastrodia elata*) have been exported by range States in low quantities, the amendment proposed to Annotation #4 would appear not to pose a threat to the conservation of wild populations of these species. It is in line with Res. Conf. 11.21 (Rev. CoP18) and Res. Conf. 9.24 (Rev. CoP17), which recommend Parties ensure that annotations to listings in the Appendices include those specimens that first appear in international trade as exports from range States and that dominate the trade and the demand from the wild.

The International Union for Conservation of Nature (IUCN) is the global authority on the status of the natural world and the measures needed to safeguard it. IUCN is a membership Union composed of both government and civil society organisations. It harnesses the experience, resources and reach of its more than 1,400 Member organisations and the input of more than 15,000 experts.

The IUCN Species Survival Commission (SSC), the largest of IUCN's six commissions, has over 10,500 species experts recruited through its network of over 168 groups (Specialist Groups, Task Forces and groups focusing solely on Red List assessments). Biodiversity loss is one of the world's most pressing crises, with many species' populations declining to critical levels. SSC is dedicated to halting this decline in biodiversity and to provide an unmatched source of information and advice to influence conservation outcomes, as well as contribute to international conventions and agreements dealing with biodiversity conservation.

TRAFFIC is a non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC plays a unique and leading role as a global wildlife trade specialist, with a team of staff around the world carrying out research, investigations and analysis to compile the evidence needed to catalyse action by governments, businesses and individuals, in collaboration with a wide range of partners, to help ensure that wildlife trade is not a threat to the conservation of nature.

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