# ANALYSES

Summaries of the IUCN and TRAFFIC Analyses of the proposals to amend the CITES Appendices at the

# 18TH MEETING OF THE CONFERENCE OF THE PARTIES

*Geneva, Switzerland, 17th – 28th August, 2019*

IUCN SSC Species Survival Commission

TRAFFIC the wildlife trade monitoring network

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Prepared by IUCN Global Species Programme
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 1,300 Member organisations and the input of more than 13,000 experts.

**The IUCN Species Survival Commission (SSC)**, the largest of IUCN's six commissions, has over 8,000 species experts recruited through its network of over 150 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 150 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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## 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 we now produce the Analyses of the Proposals for CITES CoP18, which will take place in Colombo, Sri Lanka, in 2019. 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.

For the first time, the Analyses for CoP18 not only provide an assessment of whether or not each proposal meets the criteria specified by CITES, but also summarises any additional considerations that may be relevant to the decision on whether or not to adopt the proposal. These include, for example, any potential implementation challenges, benefits or risks that may be 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 10,647 species assessed as threatened on The IUCN Red List of Threatened 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 183 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 Eighteenth Meeting of the Conference of the Parties to CITES (CoP18).

*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.iucn.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, for the first time, an additional paragraph is included for certain 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/benefits for the conservation of the species concerned). Information used to compile the "Summary", "Analysis" and "Additional considerations" 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.

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 and the broader scientific community, and TRAFFIC has drawn on its own expert network and information sources to determine the nature and scale of any trade. 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, and are not to be considered exhaustive. There may be omissions and differences of interpretation in a document compiled on a wide range of species, particularly with such a high number of proposals to consider within the allotted timeframe and under a limited budget. 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 range of taxa and proposals.

*The Analyses* were completed and made available online on 15th March 2019 to allow CITES Parties and other stakeholders sufficient time to consider the information in advance of the Conference of the Parties, which convenes on 23 May 2019 in Sri Lanka. 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 CoP18.

## ACKNOWLEDGEMENTS AND CREDITS

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.

We would also like to thank Daniele and Richard Devitre for French translation, and Wendy Byrnes for Spanish translation.

*The Analyses* team was made up of: Thomasina Oldfield, Willow Outhwaite, Lauren Brown and Simon Furnell (TRAFFIC), Patricia Cremona (IUCN), and a number of consultants including Martin Jenkins, James Stevens and David Whitehead. Alison Rosser, Steven Broad, Sabri Zain and Sara Oldfield also provided vital input when we unexpectedly needed additional capacity. Steven Broad, Richard Jenkins and Richard Thomas are thanked for their valuable input in reviewing *The Analyses*. Marcus Cornthwaite designed the cover. Nothando Gazi is thanked for her patience and administrative assistance. Yifu Wang provided assistance with research. Patricia Cremona led the fundraising for this project, without which it would not have been possible to undertake. All other colleagues within TRAFFIC and IUCN are thanked for their support and good humour, sugar and caffeine. Thomasina Oldfield, Willow Outhwaite and Martin Jenkins were responsible for overseeing the project.

### 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:

P. Acebes (Proposal 3), N. Allsopp (50), S. Badola (51), M. Bohm (48), P. Bowles (24, 25, 26, 28), H.K. Chen (51, 54, 57), S. Chng (23, 24, 25, 26, 28, 36, 38, 41), M. Collins (48), E. Cooper (46), W. Crosmary (5), W. Duckworth (6, 7), R. Emslie (8, 9), L. Fei (41) J. Fennessy (5), S. Ferguson (27, 33, 34, 35), B.A. González (3), S. Henriques (46), D. Hoces (3), S. Hussain (6, 7), J. Jiang (41), K. Kecse-Nagy (1, 2), M. Knight (8, 9), K. Krishnasamy (6), G. Lichtenstein (3), D. Mallon (2), R. Melisch (1, 6, 7), S. Michel (2), T. Milliken (8, 9, 10, 11, 12), E.J. Milner-Gulland (2), K. Morrison (19), L. Musing (41) D. Newton (5, 50, 55), S. Oldfield (50, 51, 54, 57), C. Ratsimbazafy (30), G. Sant, (42, 43, 44, 45), C. Simpfendorfer. (42, 43, 44) D. Skinner (10,11,12), P. Soorae (32), C. Stanford (33, 34, 35, 36), R. Thomas (18, 19), V. Toral-Granda (45), G. Webb (22), R. West (46), J. Wheeler (3), K. Vasudevan (36).

## List of Analyses

## Transfer of Heptner's Markhor *Capra falconeri heptneri* (population of Tajikistan) from Appendix I to Appendix II

## **Proponent:** Tajikistan

**Summary**: The Markhor *Capra falconeri* is a large species of wild goat famed for its impressive corkscrew horns, which are sought after by trophy hunters. *Capra falconeri* was included in Appendix II in 1975 then transferred to Appendix I in 1992, and was classified on the IUCN Red List as Near Threatened in 2014. There are three subspecies currently recognised.

This proposal concerns only the population of the subspecies Heptner's Markhor *Capra falconeri heptneri* within Tajikistan. Other subspecies do not occur in Tajikistan although *C. f. heptneri* also occurs in the mountainous terrain of Afghanistan, Turkmenistan and Uzbekistan. Regarding split-listings, *Res. Conf. 9.24 (Rev. CoP17*) advises these should be avoided or, if they do occur, be on the basis of national or regional populations rather than subspecies. This Analysis assesses only the Tajik population against the criteria but takes into account information from other range States where appropriate.

The largest national population of *Capra falconeri heptneri* is in Tajikistan: nearly 2,000 were observed in 2017 in an intensive survey which covered most of the prime habitat for *C. f. heptneri* in the country (Dashtijum Strictly Protected Area and a small area of the range close to the border with Afghanistan could not be surveyed for security reasons and heavy snowfall). The distribution in Tajikistan totals 1,200 km$^2$. The two subpopulations in southern Tajikistan (likely not isolated from each other) are transboundary with Afghanistan in at least two areas (the Afghan population is low, sourced by the Tajik population), while a third isolated subpopulation is thought to consist of only a few dozen animals. Another subpopulation on the border with Uzbekistan is most likely extinct. Annual surveys indicate that the population appears to have steadily increased from 1,000 in 2012, although the figure reported in 2018 (2,650) is considered likely to be an over-estimate and the population may have reached carrying capacity in some areas. The population status varies by area: three out of seven surveyed areas reportedly had growing populations in 2017. Threats include overgrazing and disease transmission from livestock as well as poaching for meat or trophies.

The management of *Capra falconeri heptneri* in Tajikistan is considered by some to be a good example of sustainable use leading to improved conservation outcomes. From around 2004, several traditional local hunters established small enterprises dedicated to Markhor conservation and future sustainable use. "The Mountain Ungulate Project" led to the establishment of several community-based conservancies. In the 2013–2014 season, the government issued the first hunting quota of *C. f. heptneri* in Tajikistan of six permits, which increased to 12 by 2018–2019. Most, but not all, concessions in the subspecies' range are managed by local families. The revenue from permits, plus additional expenditure by hunters totals tens of thousands of dollars, and has the potential to generate significant revenue and benefit communities. *Capra falconeri heptneri* populations are said to be increasing in at least three conservancies, but concerns have been raised that in some areas unsustainable hunting is occurring and that any benefits to local people have been very limited. The subspecies is protected within Tajikistan (hunting is only allowed by special decree by the national government) and part of its range is within protected areas.

Tajikistan currently has a methodology in place for calculating quotas based on minimum numbers of *Capra falconeri heptneri* within a conservancy (including trophy-aged males) and limits on the percentage of the population that can be hunted. Surveys are conducted every one to two years. Quotas are allocated per season and Tajikistan states that it implements an adaptive management approach. If the Tajik population is transferred to Appendix II, the proponent indicates that it will continue to set a quota, but it is not clear if the current system to calculate future offtake will continue to be employed. Problems with enforcement of the current system have been identified, including the hunting of young males below the legal trophy age. The number of trophies reported as imports from Tajikistan is lower than the number of hunting permits used.

**Analysis:** The species is affected by trade: trophy hunting is permitted (based on a quota system) and successful community-based management has aided population recovery and benefited local communities. Unsustainable hunting and illegal trade have been reported.

The observed Tajik population of *Capra falconeri heptneri* is around 2,000. Although not all animals were counted, since the survey covered most of the prime habitat it is very unlikely that the actual total population exceeds the guidance of 5,000 given in *Res. Conf. 9.24 (Rev. CoP17)* for a small wild population. Overall the population in Tajikistan is increasing, although some of this is due to an apparent change in the survey area size. Therefore, the Tajik population may be considered to no longer meet the biological criteria for inclusion in Appendix I. Although the national population is growing, this recovery is still recent, restricted to certain areas and delicate.

Annex 4 of *Res. Conf. 9.24 (Rev. CoP17*) advises that species in demand in international trade should only be transferred to Appendix II if Parties are satisfied with the precautionary measures stipulated by the proponent. Given concerns expressed over the sustainability and legality of some hunts under the existing quota allocation system, it is not clear that the precautionary measures for down-listing *Capra falconeri heptneri* to Appendix II are met. Furthermore, as two of the subpopulations are contiguous with those in Afghanistan where poaching occurs, a split listing by country may be difficult to implement.

**Other considerations:** Successful community-based management has aided population recovery and benefited local communities. The majority of concessions have publicly stated they do not support a transfer to Appendix II (including those that have growing populations).

Difficulties in obtaining import permits for trophies have been reported by some hunters, and an Appendix II listing may facilitate imports. However, legal trade in Appendix I trophies is occurring as evidenced by imports reported in the CITES Trade Database to a number of countries (including the USA and European countries) so it is not clear whether this is a significant issue, or whether the problematic imports are due to the trophies being hunted in contravention of quotas or other requirements. This issue could be addressed directly between Tajikistan and the importing countries. There may also be potential to amend *Res. Conf. 10.15 (Rev. CoP14) Establishment of Quotas for Markhor Hunting Trophies* (to include Tajikistan), as it currently includes quotas for Pakistan and will be discussed at CoP18 since Pakistan seeks to increase their quota.

## Transfer of Saiga Antelope *Saiga tatarica* from Appendix II to Appendix I

**Proponent:** Mongolia and the USA

**Summary:** *Note:* this proposal is to transfer *Saiga tatarica* from Appendix II to Appendix I. From the Supporting Statement it is evident that the Proponents consider this to refer to all living saiga. However, CITES adopted nomenclature recognises two separate species of saiga: *Saiga borealis,* endemic to Mongolia and elsewhere considered to be *Saiga tatarica mongolica*, and *Saiga tatarica*, elsewhere considered to be *S. tatarica tatarica,* comprising all other populations. Because proposals for species already included in the Appendices should follow CITES taxonomy, this proposal excludes *Saiga borealis* and only applies to the non-Mongolian populations of saiga, recognised under CITES as *S. tatarica* and elsewhere as *S. t. tatarica.*

*Saiga borealis* was included in CITES Appendix I in 1975 as *Saiga borealis mongolica*, but removed from the Appendices in 1979. In 1995 *Saiga tatarica* was listed in Appendix II, at that time the Mongolian population was considered a subspecies of *Saiga tatarica* and included in that listing, but subsequent adoption of Wilson and Reeder (2005) as the CITES Standard Taxonomic Reference for mammals, including saiga, resulted in the splitting of this taxon into *S. borealis* and *S. tatarica*, a division now widely recognised to have been in error but enshrined in CITES taxonomy until a new reference is adopted. Currently, both *Saiga tatarica* and *Saiga borealis* are listed in CITES Appendix II.

In this analysis information is provided on all saiga, divided where possible into the two CITES-recognised species: information from the Supporting Statement and IUCN Red List that refers to *S. t. mongolica* is considered as referring to *S. borealis* and all other populations as applying to *S. tatarica.*

***Saiga tatarica (sensu* CITES)**
*Saiga tatarica*, is a nomadic herding antelope that inhabits open dry steppe grasslands and semi-arid deserts across Central Asia. There are four distinct populations: one in the Russian Federation (the Kalmykia population), and three within Kazakhstan (the Betpak-dala, Ustyurt and Ural populations). Of these, the Ural population is somewhat transboundary with Russia, while the Ustyurt population makes seasonal migrations into Uzbekistan and Turkmenistan.

Historically, populations of *S. tatarica* numbered in the millions, until excessive hunting reduced them to low thousands of individuals at the beginning of the 20th Century. Since then, the population has undergone large fluctuations in size. From the early 1990s there was a decade of rapid decline caused by excessive hunting for meat and horns after the collapse of Soviet regulatory systems. Between 2006 and 2018 the population increased overall from an estimated 60,000 to in excess of 220,000 individuals (despite a large disease-related die-off in 2015). The next annual census scheduled for May 2019 is likely to show further growth in population size.

While hunting is prohibited in all range States, the species faces a range of threats, including disease, habitat loss, poaching and the blocking of migration routes by infrastructure. The greatest cause of mortality recently has been sporadic outbreaks of disease, which cause severe population crashes and large, temporary, fluctuations in population size. In 2015, a bacterial infection killed more than 200,000 saiga in Kazakhstan (more than 80% of the affected population and more than 60% of the global population), within a three-week period.

However, due to their high fecundity, (females mature at around eight months and usually produce twins), populations can rapidly rebound, with annual population growth in excess of 40% reported. Since the 2015 mass-die off, populations within Kazakhstan have undergone a strong recovery, increasing from 153,000 in 2017, to 215,000 in 2018.

Saiga are traded primarily for their horn, which is used widely in Traditional Asian Medicines. Reported trade in recent years has largely been between non-range States in Asia, including China, Japan, Hong Kong SAR and Singapore, much of it declared as originating in pre-Convention stockpiles.

While the range States currently prohibit all trade, horns from poached saiga also enter the market, particularly through trafficking routes to China. As only the males have horns, the selective poaching of males can skew the sex ratio, which in the early 2000s led to the reproductive collapse of the Russian population.

All range States are actively engaged with saiga conservation initiatives, which are coordinated through a Memorandum of Understanding (MoU) of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), in partnership with CITES. Restoring saiga populations to a point where sustainable use is possible is the long-term goal of this MoU.

***Saiga borealis***
Mongolian saiga, *Saiga borealis*, are endemic to Mongolia, and isolated from populations of *Saiga tatarica* by the Gobi Altai Mountains. This species is nationally protected, with hunting and export of all saiga strictly prohibited. It faces a range of threats including harsh climatic conditions, competition for forage with livestock, and outbreaks of disease. Longer-term population trends are hard to assess due to changes in survey methods, but in the 2000s the population recovered from very low numbers to a high of around 15,000 individuals in 2014, due to conservation efforts. Since then, an outbreak of Peste des Petits Ruminants (PPR) disease in 2016–2017 killed 54% of the population, reducing it to fewer than 5,000 individuals. A harsh winter also contributed to further declines, and by 2018 the population was an estimated 3,000 individuals.

*Saiga borealis* is also subject to the conservation measures of the CMS MoU, which was amended to cover *Saiga* spp. in 2010.

**Analysis**
***Saiga tatarica***
*Saiga tatarica* has a large area of distribution, its population exceeds 220,000 individuals and is currently increasing. Historical decline has been significant. In the past decade, outbreaks of disease have caused large and sudden reductions in the size of the population. Global threat assessments made only a few years ago rightly reflected negative trends observable at that time. However, the ability of populations to quickly rebound at rates exceeding 40% per year, gives the species significant resilience to such mass-mortality events. In considering trends now, despite recent fluctuations, when measured over the last three generations (around 11 years) *S. tatarica* has not undergone a recent marked decline and is increasing overall. National protection measures, export bans from range States and collaborative conservation actions under the CMS MoU provide a significant degree of security at present.

The vast majority trade in saiga horn is believed to be derived from *S. tatarica*, with legal trade occurring outside the range States based on stockpiles of pre-Convention horns. Illegally sourced horns from poached animals are laundered into this market, although current levels of poaching are not considered to represent a threat to the survival of the species.

***Saiga borealis***
*Saiga borealis* is endemic to Mongolia. It has a small population of less than 5,000 individual that has been decreased from over 14,500 since 2013/2014 due to an outbreak of disease and harsh winter conditions, although the population is subject to significant fluctuations. This decline would fall within the guidelines for marked recent declines for small populations given in Annex 5 of *Res. Conf. 9.24 (Rev. CoP17)* a percentage decline of 20% or more in the last 5 years or 2 generations (whichever is the longer). Large short term fluctuations have been caused by disease outbreaks (the most recent in 2016-17). It faces a range of threats including harsh climatic conditions, competition for forage with livestock, and outbreaks of disease. Horns of both species strongly resemble each other, however, it appears that the majority of trade from pre-Convention stockpiles outside the range States are of *S. tartarica.* Although poaching does not represent a major threat to this species, horns from poached animals may be laundered into this legal market. It appears that *S. borealis* meets the criteria for listing in Appendix I, although this would result in implementation challenges with the Appendix-II listing for *Saiga tartarica*. However, this species is not within the scope of the proposal now under consideration according to current CITES adopted nomenclature.

**Other Considerations:**
Listing *S. borealis* in Appendix I would result in implementation challenges, due to the strong resemblance of its parts and derivatives in trade to those of *Saiga tatarica*.

## Transfer of the Vicuña *Vicugna vicugna* population of the Province of Salta (Argentina) from Appendix I to Appendix II with annotation 1

## Proponent: Argentina

**Summary**: The Vicuña is a South American member of the camelid family that produces high-quality wool. Populations were heavily depleted by hunting in the mid-20th century to supply wool fibre for export, the species was consequently listed in Appendix I in 1975. Following a rapid recovery of the species, some populations in Peru and far northern Chile were transferred to Appendix II to allow the export of appropriately labelled fabric woven from wool fibre sheared from live animals. Other populations have followed suit, including ones in Argentina and Bolivia and a small introduced population in Ecuador. The current conditions for export, which regulate how the fibre should be harvested and labelled for export, are set out in annotation 1.

In 2018 the global Vicuña population was estimated at approximately half a million animals. The species is currently classified by IUCN as Least Concern.

The Argentinian Vicuña population was estimated at between 73,000 and 127,000 individuals in 2006 (dependent on the census method). Wild populations occur in five provinces: Catamarca, Jujuy, La Rioja, Salta and San Juan. Populations in Jujuy and Catamarca were transferred to Appendix II in 1987 and 2003 respectively. Semi-captive populations in all provinces, including that in Salta Province, are all also currently included in Appendix II. The current proposal is to transfer the wild population of Salta to Appendix II. In Argentina, this would leave only the small wild populations of La Rioja and San Juan listed in Appendix I.

The wild population in Salta Province in 2018 was estimated at just under 60,000, compared with around 30,000 in 2013. Suitable habitat within the extent of occurrence in Salta is calculated to be around 26,000 $km^2$, population densities vary considerably within this area. The species is covered by a range of national and provincial laws and regulations and is present in protected areas, including the “Los Andes” faunal reserve in the south-west of Salta, which protects around 40% of Vicuña habitat in the province.

**Analysis**: The Vicuña population of Salta Province, Argentina, does not meet the biological criteria for retention in Appendix I – its population is large, increasing and distributed over a large area. The species is in trade and in this regard is intended to be managed in the same way as the adjacent and contiguous populations of Jujuy and Catamarca Provinces, also in Argentina. These have been included in Appendix II for over 20 and over 15 years respectively with no evident problems. It would appear therefore that precautionary measures set out in *Res. Conf. 9.24 (Rev. CoP17)* are met.

## Amend the name of the Vicuña *Vicugna vicugna* population of Chile from "population of the Primera Región" to "populations of the region of Tarapacá and of the region of Arica and Parinacota"

**Proponent:** Chile

**Summary and Analysis:** The Vicuña *Vicugna vicugna* is a South American member of the camel family that produces fibre of extremely high quality. Populations were heavily depleted in the mid-20th century mainly by hunting to obtain fibre for export. The species was consequently listed in Appendix I in 1975. In 1987, given the rapid recovery of the species, some populations in Peru and far northern Chile were transferred to Appendix II to allow the export of appropriately labelled fabric woven from fibre sheared from live animals. Other populations have followed suit, including in Argentina and Bolivia and a small introduced population in Ecuador. The current conditions for export, which set out how fibre should be obtained, and fabric labelled for export, are set out in annotation 1. In 2018 the total population was estimated at approximately half a million animals, and the Vicuña is currently classified by IUCN as Least Concern (Acebes *et al.*, 2018).

This proposal concerns the Chilean population of the Vicuña that is already listed in Appendix II. It concerns a technical change to ensure that the geographical description of the population accords with the current official Chilean terminology for the region. Until 2007, the whole of the northernmost part of Chile was referred to under Chilean law as the Primera Región of Tarapacá. All Vicuña in this region are included in Appendix II (under the description "population of the Primera Región"). In 2007 this region was split into two, one called Región de Tarapacá (Tarapacá Region) and the other Región de Arica y Parinacota (Arica and Parinacota Region). Vicuña occur in both these areas. The change in the geographical description ensures that it is clear that both these populations are still in Appendix II under annotation 1.

## Inclusion of Giraffe *Giraffa camelopardalis* in Appendix II

**Proponents:** Central African Republic, Chad, Kenya, Mali, Niger and Senegal

**Summary**: The Giraffe *Giraffa camelopardalis* is the world's tallest land mammal. It remains widespread across Southern and Eastern Africa, with smaller isolated populations in West and Central Africa. Nine subspecies are currently recognised, with each subspecies associated with particular sub-regions and/or range States.

In 2016, based on evidence of declines of 36–40% over three generations (30 years, 1985–2015), the IUCN Red List assessment was revised from Least Concern to Vulnerable. The best available estimates indicate a total population in 1985 of around 152,000–163,000 Giraffes (106,000–114,000 mature individuals), and in 2015 a total population of 98,000 Giraffes (68,000 mature individuals). The main factors responsible for this decline are recognised as habitat loss, illegal hunting (poaching), civil unrest and ecological changes. The presence and severity of these threats, and the conservation strategies used to manage Giraffe populations, show large regional variations.

In Central and Eastern Africa, Giraffes have suffered the greatest declines. Despite national protection, threats including habitat loss and illegal hunting—particularly for meat and some traditional uses—have severely reduced some populations over the last 30–40 years. These include declines of Reticulated Giraffe (*Giraffa camelopardalis reticulata* native to Kenya, Ethiopia, Somalia) of between 56% and 67%, Kordofan Giraffe (*G. c. antiquorum* native to Cameroon, Central African Republic, Chad, Democratic Republic of the Congo (DRC), South Sudan) of 85% and Nubian Giraffe (*G. c. camelopardalis* native to Ethiopia, South Sudan*)* of 97%.

In other regions, however, particularly in Southern Africa, Giraffe populations have undergone large increases in size. These include the Angolan Giraffe (*Giraffa camelopardalis angolensis* native to Botswana and Namibia) of 195%, and the South African Giraffe (*G. c. giraffa* native to Botswana, Mozambique, South Africa, Zambia and Zimbabwe*)* of 167%.

Available international trade data are restricted to USA import data, which along with Europe is considered a major market for trophies. Between 2006 and 2015, around 3,500 Giraffe trophies were imported to the USA, among around 40,000 total Giraffe specimens (largely bone products). Ninety-four percent of these products (and 98% of trophies) were exported by South Africa, Namibia and Zimbabwe, where trophy hunting is legal. There is no evidence to suggest exports from these countries were sourced from Giraffes illegally killed elsewhere. Non-trophy products are generally sourced from the trophy hunting industry, from natural deaths, or from animals culled or hunted for meat.

Conservation measures in both Namibia and South Africa have been associated with an increase in Giraffe populations over the last 30 years. While concerns have been raised over the management of Giraffe populations in Zimbabwe, which declined by 70% from around 26,000 in 1998 to 8,000 in 2016, this appears largely attributable to land reform programmes which have seen the conversion of land to agriculture, and an increase in poaching for local consumption. As the annual offtake for trophy hunting is less than 150 Giraffes (<2% of the population), this is considered unlikely to be negatively affecting Giraffe populations within Zimbabwe.

In some regions of Central and Eastern Africa, the illegal trade in Giraffe meat is known to cross porous borders, particularly where militia are in operation, while a transboundary trade in tail hairs may also occur, following centuries-long traditions. In some regions of Africa, Giraffe products, including Giraffe hair bracelets, have been recorded within tourist markets and may therefore be exported. Giraffe products are also seen for sale online in other markets, including Europe. There is no evidence to suggest that Giraffes are being harvested specifically in order to supply these markets (they are considered likely a “by-product” of the trophy industry, cropping and natural mortality) or that any significant international trade in products made from illegally killed Giraffes is occurring.

The poaching that has contributed to the decline of many Giraffe populations does therefore not appear to be driven by trophy hunting. The current levels of utilisation for trophy hunting in Southern

Africa do not appear to be negatively impacting its regional populations of Giraffe, which overall are increasing.

**Analysis:** Although the Giraffe has experienced population declines of 36–40% over the last three generations, with illegal hunting having contributed to these declines, there is little evidence to suggest that the poaching of Giraffe is driven by international trade, rather it is for local/domestic use. The main populations that are subject to legal offtake for international trade are in Namibia, South Africa and Zimbabwe, where the hunting of Giraffe, mainly for trophies, and export is permitted, and populations are generally increasing, except in Zimbabwe where declines have not been attributed to international trade.

On this basis, it is not clear that regulation of trade is necessary a) to avoid the species becoming eligible for inclusion in Appendix I in the near future or b) 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. Regulation of international trade would also not address the principal threats affecting this species, with habitat loss, illegal hunting for either domestic use or to supply markets across porous borders within Africa, civil unrest and ecological changes, being the main causes of the observed decline in Giraffe.

## Transfer of the Small-clawed Otter *Aonyx cinereus* from Appendix II to Appendix I

**Proponents:** India, Nepal and the Philippines

**Summary**: The Small-clawed Otter *Aonyx cinereus* is the smallest of the otter species. The species has a broad range extending from India eastwards through South-east Asia to southern China. It is dependent on aquatic habitats for foraging and sheltered terrestrial areas for resting and denning. It occurs in a range of aquatic habitats from coastal wetlands to mountain streams, and in at least some human-modified habitats such as rice fields and coffee/tea plantations wherever there is prey and adequate shelter.

This species was assessed as Vulnerable in 2014 on the IUCN Red List. The assessment states that although quantitative data on population sizes or trends are lacking, it is inferred that the global population of *Aonyx cinereus* has declined by greater than 30% over the past 30 years (three generations). However, as *A. cinereus* was assessed as Vulnerable and not Endangered, declines of greater than 50% were not indicated. There are no current population estimates available for *A. cinereus*. Although populations and habitat are believed to be stable in parts of the range, its distribution in the west is believed to be contracting, and it is now considered to be very rare in southern China and Myanmar. Its population status is reportedly unknown in a number of countries (Bhutan, Cambodia, Lao People's Democratic Republic (PDR), Thailand and Viet Nam). Where national Red List assessments have been undertaken, the status varies from data deficient in Nepal to near threatened in Malaysia to endangered in Bangladesh. However, in other parts of its range there are healthy populations and habitat.

The subfamily Lutrinae, which includes *Aonyx cinereus,* has been included in Appendix II since 1977. Poaching is considered a significant threat; *A. cinereus* has a history of exploitation for its fur and for body parts used in Traditional Asian Medicine, which has been identified as one of the main causes of historical population declines. Live trade for the pet trade and otter-petting cafes is said to be an emerging use with Japan and Thailand identified as destinations. CITES records of legal international trade show relatively low volumes, mostly of live animals (*ca*. 600 between 1980–2017) reported mainly as from captive sources. Many reported consumer countries are also range States so some trade is likely domestic. While online advertisements of live *A. cinereus* often describe the otters as captive-bred, it is believed that that many animals in trade are wild-caught. There are concerns that illegal pet trade in otters in general is a growing threat and there is evidence to suggest that this species is the most in demand. Live *A. cinereus* have been offered for sale online in Indonesia, Thailand and elsewhere. The total level of trade in this species for pelts, pets and medicine is unclear as much of the trade is apparently illegal and unreported.

The species is protected in all range States except Brunei Darussalam, Cambodia, Indonesia and Nepal, although protection may vary in form and enforcement. For example, in Thailand whilst the possession of otters is prohibited, and all native otters are protected, online advertisements for *A. cinereus* and other otter species can still be found.

A number of otter seizures have been reported in range States, with some apparently destined for export; enforcement staff are reported to have difficulty in identifying pelts and products in trade to the species level, therefore seizures are often not reported to the species level.

There are reportedly otter farms in China, Pakistan and Indonesia, and although species can be bred in captivity, it is not clear how much of the trade is being met from these sources.

In addition to harvest, *Aonyx cinereus* are believed to be affected to some extent by widespread human development and activities such as habitat loss and degradation, pollution, and reduced prey base, in addition to climate change.

**Analysis:** Information on the status of *Aonyx cinereus* is scarce although the population is considered unlikely to be small or to have a restricted range. There is anecdotal information that the species is scarcer than it was, and it has been extirpated in parts of its range, but in other areas populations are reported to be stable. There are no baseline population data on which to measure trends, but a recent (over three generations) decline of greater than 30%, but less than 50%, has been inferred from rates

of habitat loss and exploitation resulting in an IUCN Red List assessment of Vulnerable (2014). Legal international trade in the species has been low, but there are concerns over the impacts of illegal harvest for pelts and more recently in an apparently growing demand for the pet market. It is not clear what proportion of harvest is for domestic verses international trade. While there is some evidence that *A. cinereus* can be successfully bred in captivity, it is unclear if any of the international or domestic trade, including the pet trade, is being met from captive sources. Given the available information, it is not possible to determine the overall level of harvest from the wild or its impact on the species.

On the basis of a population decline greater than 30% but less than 50%, inferred from a decline in habitat and exploitation in the Red List assessment, it seems uncertain that this species meets the guideline for a marked recent population decline as described in *Res. Conf. 9.24 (Rev. CoP17)* for inclusion in Appendix I at the present time. However, here are significant levels of uncertainty regarding status in some parts of the species' range and levels of trade, and if further information were to become available it may help to determine of the species is closer to the 50% decline guideline for inclusion in Appendix I.

**Other Considerations:** Levels of legal international trade appear low, and therefore it is assumed that most harvest is for domestic and/or illegal trade. Any additional benefits of an Appendix I listing are not clear unless enforcement efforts are increased.

*Res. Conf. 12.10* (*Rev. CoP15*) outlines that inclusion in Appendix I would mean commercial captive breeding operations would need to meet the provisions of *Res. Conf. 10.16* (*Rev.)* to be registered with the CITES Secretariat, and that registered operations should ensure an appropriate and secure marking system to identify all breeding stock and specimens in trade. This enhanced oversight could help allay concerns over fraudulent claims of captive breeding and wild offtake for breeding stock.

## Transfer of Smooth-coated Otter *Lutrogale perspicillata* from Appendix II to Appendix I

**Proponent:** Bangladesh, India and Nepal

**Summary**: The Smooth-coated Otter *Lutrogale perspicillata* is an otter of lowlands and floodplains. It forages in a wide variety of habitats including large rivers and lakes, peat swamp forests, mangroves and estuaries, as well as rice-fields. It has a broad distribution range, from Java, Sumatra and Borneo, northward to south-western China, east through Nepal, Bhutan and India to Pakistan, with an outlying, and taxonomically distinct population in Iraq. There are some indications that *L. perspicillata* can adapt to live in human-modified environments.

*Lutrogale perspicillata* was assessed in the IUCN Red List as Vulnerable in 2014 on the basis that the population was inferred to have declined by more than 30% in the last 30 years (three generations) due to habitat loss and exploitation. However, as *L. perspicillata* was assessed as Vulnerable and not Endangered, declines of greater than 50% were not indicated. There is evidence that there have been declines in a number of national populations: in China, Viet Nam and parts of Bangladesh it appears to have been extirpated, and declines are noted elsewhere (e.g. Pakistan). While some national populations appear healthy (Singapore, Iraq) there is uncertainty for other countries (e.g. India, Indonesia). Its status in National Red Lists varies from least concern in Malaysia (2017) to vulnerable in Thailand (2005), to endangered in Nepal (2011) and critically endangered in Bangladesh (2014).

The subfamily Lutrinae was listed in CITES Appendix II in 1977. Historically exploited for the fur trade and for use in Traditional Asian Medicine this exploitation was considered one of the main causes for past population declines. The pet trade and otter-petting cafes have been identified as an emerging use type of otters, with Japan and Thailand identified as destinations.
*Lutrogale perspicillata* does not appear to be one of the favored species for this trade, perhaps due to its larger size, although a limited number of online advertisements were found in Thailand and elsewhere.

According to the CITES Trade Database, international legal trade has been limited to small quantities in recent years: there have been no reported direct exports of skins since 1983 and only 41 live individuals were reported to have been exported between 1977 and 2016 (most live individuals were reported to be captive-bred). Some countries from where otters have been observed as offered for sale are also range States for the species, which suggests a degree of domestic trade. The total current level of demand for this species for pelts, pets and medicine is unclear as much of the trade is apparently illegal and unreported.

The species is protected in all range States except for Cambodia and Brunei Darussalam and the status in Bangladesh is unclear. Protection may vary in form and enforcement, for example: in Thailand the possession of otters is prohibited and all native otters are protected, but online adverts of *L. perspicillata* and other otter species can still be found.

*Lutrogale perspicillata* was historically in high demand for its pelts and a trade in pelts continues illegally. A number of otter seizures have been reported in range States, with some apparently destined for export; enforcement staff are reported to have difficulty in identifying pelts and products in trade to the species level, therefore seizures are often not reported to the species level. Whilst consumers and tourists in the Tibet Autonomous Region (TAR), China, are thought to provide the largest consumer base for otter pelts (particularly sourced from India and Nepal) the impact on *L. perspicillata* is unclear as very little species-specific information is available.

There are reportedly otter farms in China, Pakistan and Indonesia, and although species can be bred in captivity, it is not clear how much of the trade is being met from these sources.

In addition to harvest, *Lutrogale perspicillata* is believed to be affected by habitat loss and degradation, as well as pollution, decline in prey biomass, persecution and climate change.

**Analysis:** Information on the status of *L. perspicillata* in large parts of its range (e.g. India, Lao PDR, Thailand, Myanmar etc.) is scarce although the population is unlikely to be considered small globally. The species does not have a restricted range, occurring from Iraq in the west to Indonesia in the east. There are no quantitative baseline data on which to base population trends, although there is some information that the species has decreased or been extirpated in some parts of its range. The IUCN Red List assessment notes a decline of more than 30% over three generations. While habitat loss is a serious threat, the species is known to occur in human-modified environments. There has been limited reported legal trade in *L. perspicillata* since 1977. The current level of demand for this species is unclear, as is the amount of international or domestic trade met by captive-bred sources. The size of the illegal and/or domestic trade is also largely unknown.

On the basis of a greater than 30% (but less than 50%) population decline over three generations inferred from a decline in habitat and exploitation in the Red List assessment, it seems uncertain that this species meets the guidelines for a marked recent population decline as described in *Res. Conf. 9.24 (Rev. CoP17)* for inclusion in Appendix I at the present time. There are significant levels of uncertainty regarding status in some parts of the species' range and levels of trade, and if further information were to become available on this it may help determine of the species lies closer to the 50% decline guideline for inclusion in Appendix I.

**Other Considerations:** Levels of legal international trade appear low, and therefore it is assumed that most harvest is for domestic and/or illegal trade. Any additional benefits of an Appendix I listing are not clear unless enforcement efforts are increased.

*Res. Conf 12.10* (*Rev. CoP15*) outlines that inclusion in Appendix I would mean commercial captive breeding operations would need to meet the provisions of *Res. Conf. 10.16* (Rev.) to be registered with the CITES Secretariat, and that registered operations shall ensure an appropriate and secure marking system to identify all breeding stock and specimens in trade. This enhanced oversight could help allay concerns over fraudulent claims of captive breeding and wild offtake for breeding stock.

## Remove the existing annotation for the population of Eswatini of Southern White Rhinoceros *Ceratotherium simum simum* 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,* now believed extinct in the wild). In 2012 the global wild population was estimated at around 21,300, having increased from a few hundred at most in the 1920s. 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), numbers declined to around 18,000 in 2017. From 2015-2018, the number of rhinos known to have been poached in Africa is estimated to have declined by a third. Although poaching remains at a high level particularly in Mozambique, South Africa and Zimbabwe, provisional data for 2018 indicate that the numbers of rhino killed by poachers per day (2.6) declined to its lowest level since 2012. *Ceratotherium simum simum* was assessed as Near Threatened on the IUCN Red List in 2011. Around 86% of the population is in South Africa.

The Rhinocerotidae family was included in Appendix I in 1977. The South African population of *C. s. simum* was transferred to Appendix II in 1994 with 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”. In 2004 a proposal was accepted to transfer Eswatini's population to Appendix II using the same annotation.

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.

The population is confined to secure sites in two protected areas. Improved protection, including through a change to national legislation, led to an increase in the population to 60 individuals in 2004. In 2015 the population numbered 90 individuals, which then reduced to 66 in 2017 due to drought and is currently estimated at 79. Three rhinos have reportedly been poached in the country since 1992, although it is possible that not all poached carcasses have been discovered so this may be an underestimate.

According to the proponent, no trophy hunting of *C. s. simum* has taken place because all rhinos occur in reserves where sport and trophy hunting are not permitted. All reported trade from Eswatini has been to South Africa; since 2004 Eswatini exported 19 live individuals to South Africa (and imported 28 animals).

On a continental scale, the cost and risk of keeping rhinos has risen and many private owners are now reported to be leaving the market. In Eswatini, the recent drought meant the rhinos were fed fodder at great cost.

This proposal is to delete the existing annotation as it applies to Eswatini's population, with the intention of allowing limited and regulated trade in stockpiles of *C. s. simum* horn which has been legally collected in the past or recovered from poached Eswatini rhino (totalling 330 kg), as well as horn to be harvested annually in a non-lethal way in the future (amounting to up to 20 kg per year). The proponent notes that it would reserve the right to adjust prices and amounts adaptively once sales commence.

The Supporting Statement provides the following details on implementation: the CITES Management Authority of Eswatini will be the sole seller, and will sell to a small number of licensed retailers (likely including Traditional Chinese Medicine (TCM) hospitals in the Far East). Horn will be “properly documented, certificated and recorded on a DNA database, a national register and with the CITES Secretariat to safeguard its integrity”. The CITES Secretariat will be requested to closely monitor consignments, and trade will be open to inspection and verification by the CITES Secretariat. If legal trade is ultimately proven to pose a renewed threat to the subspecies, then further trade would be

prohibited by Eswatini. The Proponent states that its intention is to use proceeds from the horn sales to fund conservation, including security and improved park employee renumeration.

**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)*, remain in place:

*Annex 4 2 a) i):* the subspecies is in demand, and the proposed amendment has the potential to stimulate trade (it is unlikely that 20 kg per year will meet global demand). It is not possible to predict if legalising trade in rhino horn from one population will stimulate trade in other populations. While legal trade could replace some of the demand currently being met by illegally obtained horn, raise funds for conservation and/or reduce the "exclusive" status of horn to certain consumers, legalisation could also lead to new consumers entering the market who had previously been put off by its illegality. The proponent states that if the trade were judged to be having a negative impact on the subspecies it would be stopped, although no clear mechanism is proposed for how such an assessment would be undertaken.

*Annex 4 2 a) ii):* management measures in place since 2004 have seen the Eswatini population increase, despite a recent drought-induced decline. Few details are provided as to how the proposed legal trade will be carried out and controlled; for example it is not specified which importing countries would permit a legal trade (China recently reaffirmed its 25-year ban on the use of rhino horn for TCM), how retailers (including international) would be selected, how and by whom these would be licensed, or how trade would be monitored throughout the trade chain (including in end-user markets) to avoid laundering, and who would fund this. While the CITES Secretariat is identified as playing a significant role, it is not clear how it would undertake this work, similarly it is not clear if authorities in importing countries have been consulted.

Eswatini has provided some detail on precautionary measured that they would implement, but it is not clear what safeguards would be implemented by any anticipated trade partners or even which countries would be able legally to import the horn. In summary, this proposal does not provide sufficient information to address the precautionary measures in Annex 4 to *Res. Conf. 9.24 (Rev. CoP17).*

Removal of the 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.

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

**Proponent:** 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,* now believed extinct in the wild). In 2012 the global wild population was estimated at around 21,300, having increased from a few hundred at most in the 1920s. 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), numbers declined to around 18,000 in 2017. From 2015-2018, the number of rhinos known to have been poached in Africa is estimated to have declined by a third. Although poaching remains at a high level particularly in Mozambique, South Africa and Zimbabwe, provisional data for 2018 indicate that the numbers of rhino killed by poachers per day (2.6) declined to its lowest level since 2012. *Ceratotherium simum simum* was categorised on the IUCN Red List as Near Threatened in 2011. Around 86% of the population is in South Africa.

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 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." The populations of South Africa and Eswatini are already included in Appendix II with this annotation (since 1995 and 2005 respectively).

Having become extinct in Namibia before the end of the 19th century, *C. s. simum* was first 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 (2017-2018) is nearly 1,100, almost 800 of which are reported to be in private ownership across 70 populations, 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: between 2002 and 2017 South Africa recorded the export of nearly 400 *C. s. simum* to Namibia, 80% of these from 2012 onwards. In the same time period less than 50 rhino were imported from Namibia (the largest importer being the Democratic Republic of the Congo), all of which were reported after 2010.

From 2008 to 2018 a total of 57 *C. s. simum* were legally hunted in Namibia, indicating an average annual offtake of 0.5% of the population. Virtually all resulting trophies appear to have been exported.

Reported poaching 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 2015-2018) and is lower than the intrinsic population growth rate. However, poaching of Black Rhinoceros *Diceros bicornis* in Namibia has been much higher: averaging approximately 50 animals per year for the period 2014-2018 (2.4% of the current population per year), although for both taxa not all poached carcasses will have been discovered so this may be an underestimate. Due to increasing security costs which are reported not to be offset by available means of utilisation, 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 conduct hunting.

**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 70 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. 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, 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 licence and track specimens in trade.

The annotation in question has been used for export of this subspecies from South Africa and Eswatini for several years with no apparent problems.

## Background to the African Elephant proposals

The African Elephant *Loxodonta africana* occurs in 38 range States in Africa. It was included in Appendix II in 1977 and transferred to Appendix I in 1989. The populations of Botswana, Namibia and Zimbabwe were transferred 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, including an annotation agreed at CoP14. The annotation allowed for trade in various non-ivory African Elephant specimens and products under a range of conditions, somewhat different for each of the four range States in question. With regard to trade in ivory, it allowed 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 restrictions. One of these 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 (the sale of ivory in question took place in November 2008). It also specified that such further proposals should be dealt with in accordance with Decisions 14.77 and 14.78.

Decision 14.77 instructed the Standing Committee, assisted by the Secretariat, to propose for approval at the latest at CoP16 a decision-making mechanism for a process of trade in ivory under the auspices of the Conference of the Parties. Decision 14.77 was not implemented, in that no decision-making mechanism for a process of trade in ivory was submitted by the Standing Committee to CoP16 for approval. This Decision was deleted at CoP16 and the CoP agreed Decision 16.55 which again directed the Standing Committee, with the assistance of the Secretariat, to propose for approval at the 17th meeting of the Conference of the Parties (CoP17) a decision-making mechanism for a process of trade in ivory under the auspices of the Conference of the Parties. This Decision was also not implemented as no such decision-making mechanism was submitted to CoP17. Parties at CoP17 did not agree to any extension of the work on the development of the decision-making mechanism.

The original Decision 14.78 instructed the Standing Committee to conduct ongoing comprehensive reviews of the status of the elephant, trade in its specimens and the impact of the legal trade, based on data from Monitoring the Illegal Killing of Elephants (MIKE), the Elephant Trade Information System (ETIS) and the implementation of the Action plan for the control of trade in elephant ivory and the African Elephant action plan, developed as directed in Decision 14.75 and adopted by the African Elephant range States in 2010.

Decision 14.78 was substantively revised at CoP15 and CoP16, the revisions shifting responsibility for action from the Standing Committee to other actors, principally the Secretariat. Under the current Decision 14.78 (Rev. CoP16), in preparation for the 65th and 66th meetings of the Standing Committee the Secretariat was instructed, to:

- produce an updated analysis of MIKE data, pending the availability of adequate new MIKE data;
- invite TRAFFIC to submit an updated analysis of ETIS data and UNEP-WCMC to provide an overview of the latest elephant trade data;
- invite the IUCN/SSC African and Asian Elephant Specialist Groups to submit any new and relevant information on the conservation status of elephants, and on pertinent conservation actions and management strategies;
- invite the African elephant range States to provide information on progress made in the implementation of the African elephant action plan;
- on the basis of the information specified above, recommend actions for consideration by the Standing Committee.

At CoP17, Parties agreed to incorporate the provisions of the Decision into *Res. Conf. 10.10 (Rev. CoP17) Trade in elephant specimens* and these are now paragraph 11 of that Resolution.

A further issue of note in recent years has been the issue of domestic ivory markets, with many countries significantly increasing level of restrictions imposed on the sale of ivory nationally, such as China's landmark closure of its domestic ivory market. Amendments to *Res. Conf. 10.10* were

adopted at CoP17, recommending that Parties in whose jurisdiction there is a legal domestic market for ivory that is contributing to poaching or illegal trade take all necessary legislative, regulatory and enforcement measures to close their domestic markets for commercial trade in raw and worked ivory.

In response to growing concerns over levels of illegal ivory trade, a process to address this through development of National Ivory Action Plan's (NIAPs) was initiated within CITES. This involves key Parties implicated in the global illicit ivory trade developing country-specific action plans that outline urgent actions or activities that need to be implemented against specified time frames and milestones for implementation. Various amendments made to *Res. Conf. 10.10* at CoP17 further streamlined NIAP processes, enhancing the level of consultation with the Parties involved in the making of decisions, as well as providing them with guidelines in implementing their NIAPs. The process has resulted in many very positive actions taken by a wide range of players, with the 70th meeting CITES Standing Committee agreeing to China, Kenya, Philippines, Tanzania and Thailand and Uganda exiting the oversight process due to progress made.

Three proposals concerning the African Elephant have been proposed for consideration at CoP18. Proposal 10, submitted by Zambia, seeks to transfer its population from Appendix I to Appendix II, subject to a number of conditions. Proposal 11 from Botswana, Namibia and Zimbabwe, seeks amendments to Annotation 2 that would remove references to the conditions that were imposed for the earlier one-off sale that took place following CoP12, allowing for normalised trade in ivory from all four Appendix II-listed African Elephant populations. Proposal 16, submitted by ten Parties, is to transfer from Appendix II to Appendix I the African Elephant populations of Botswana, Namibia, South Africa and Zimbabwe.

## Transfer of the population of African Elephant *Loxodonta africana* in Zambia from Appendix I to Appendix II

## **Proponent:** Zambia

**Summary**: This proposal, which only applies to the African Elephant *Loxodonta africana* population of Zambia, is to transfer that population from Appendix I to Appendix II subject to:

- Trade in registered raw ivory (tusks and pieces) for commercial purposes only to CITES approved trading partners who will not re-export;
- Trade in hunting trophies for non-commercial purposes;
- Trade in hides and leather goods;
- All other specimens shall be deemed to be specimens of species in Appendix I and the trade in them shall be regulated accordingly.

Zambia submitted proposals to transfer its population of *Loxodonta africana* to Appendix II at CoP12 in 2002 and at CoP15 in 2010, both of which were rejected. For the most recent proposal submitted at CoP15 a panel of experts was convened in conformity with *Res. Conf. 10.9 Consideration of proposals for the transfer of African elephant populations from Appendix I to Appendix II.* The Panel of Experts made a generally favourable response having visited Zambia and reviewed the status and management of its elephant populations and Zambia's ability to control trade in ivory. No Panel of Experts has been convened to assess these factors in detail this time and we have been constrained to the assessment of the information contained within the proposal and its Supporting Statement (SS). We present here an assessment of this information against *Res. Conf. 9.24 (Rev. CoP17)*. However, the proponent may be able to provide further detail on factors relating to control of ivory not included within the SS, which would help Parties in their consideration of this proposal.

The SS states that the number of *Loxodonta africana* in Zambia declined significantly due to poaching in the 1970s and 1980s with estimated populations declining from 200,000 in 1972 to ca. 18,000 by 1989. The most comprehensive and reliable information on distribution and population of the species is contained in the African Elephant Database (AED), maintained by the IUCN SSC African Elephant Specialist Group, and presented in the African Elephant Status Reports (AESR), the latest of which was published in 2016. The 2016 report estimates a range of approximately 170,000 km$^2$ for Zambia and a total population estimate of ca. 22,000. Data for Zambia's population of elephants from the African Elephant Database are:

> 2002 – 12,457 definite, 6,961 probable, 7,631 possible and 235 speculative;
> 2006 – 16,562 definite, 5,948 probable, 5,908 possible and 813 speculative;
> 2015 – 21,967 ± 4,703 (based on systematic survey data). There may be an additional 214 to 314 in areas not systematically surveyed.

CoP18 Doc. 69.2 (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 2017. It reports on the proportion of illegally killed elephants (PIKE) at more than 60 sites in 30 countries in Africa and 28 sites in 13 countries in Asia. A PIKE level of 0.5 has been used as a threshold above which elephant populations are very likely to be in net decline, although the report suggests that the use of the 0.5 PIKE "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 0.48 in the most recent assessment, having increased from 0.41 in 2016. It is difficult to estimate poaching impact at the site level, especially in sites that do not report sufficiently large numbers of carcasses, or where there may be indications of bias in reported PIKE levels. In Zambia's only MIKE site—South Luangwa National Park—the PIKE estimate increased from 0.59 in 2016 to 0.66 in 2017 based on 85 and 126 detected carcasses in 2016 and 2017, respectively. In a 2015 aerial survey a carcass ratio of 4.5% was reported for Zambia, suggesting a stable population.

Although the proposal seeks to allow "trade in registered raw ivory (tusks and pieces) for commercial purposes only to CITES approved trading partners who will not re-export", the SS is somewhat ambiguous as to whether it is the proponent's intention to do so or not. If the intention is to export

ivory, it is not clear whether this would be from stockpiles already registered, and if so whether only tusks in those stockpiles derived from natural mortality or those from poached elephants as well, and whether the intention is also to harvest new ivory for export. The proponent argues that the proposed annotation is in conformity with the precautionary measures as defined in Annex 4 of the above-mentioned Resolution. However, the SS gives little information, nor does it detail any regulatory or enforcement controls as appropriate measures to ensure it complies with the requirements of the Convention, although the proponents do state that in general “Zambia has demonstrated its capacity to comply with the requirements of CITES both by the implementation of the Convention and by further enacting legislation to domesticate the Convention” and that “Controlled legal trade shall provide the required funding for enforcement and management”. Population monitoring measures are described. No details are given for measures on controlling trade in ivory, such as stockpile management and law enforcement measures. A quota system has been in place for trophy hunting, which would presumably continue to be employed.

**Analysis**: The *Loxodonta africana* population of Zambia is not small, nor does it have a restricted distribution. Although it underwent a marked decline since the 1970s, the population size appears to have been relatively stable in the last decade. This population appears therefore not to meet the biological criteria for inclusion in Appendix I. There is a lack of clarity over the intention of the proposal with regard to trade in ivory. Little detail is given on proposed management to ensure that Article IV requirements would be met or of any appropriate enforcement controls in place. On the basis of the information provided it is not possible to determine that the precautionary safeguards are met.

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

**Proponents:** Botswana, Namibia and 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. 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, it 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 which occurred in 2008, during which time a decision-making mechanism for a process of trade in ivory would be developed. There is currently no agreed decision-making mechanism for allowing trade in ivory under the auspices of the Conference of the Parties.

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 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."

If accepted, the proposal's main effect would be to allow exports of registered raw ivory. 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 Parties therefore need to be satisfied that the Precautionary Measures in *Res. Conf. 9.24 (Rev. CoP17)* Annex 4 are met.

The proponents state 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 SS 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. Zimbabwe is one such country with an up-to-date elephant management plan. However, for all the countries, details of the precautionary measures are lacking in the Supporting Statement (SS).

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 and legal acquisition findings). The SS does not provide details as to how the proposed trade would be assessed for sustainability and controlled.

This proposal applies only to the *Loxodonta africana* population of four contiguous southern African countries: Botswana, Namibia, South Africa and Zimbabwe. The most comprehensive and reliable information on distribution and population of the species is contained in the African Elephant Database (AED), maintained by the IUCN SSC African Elephant Specialist Group, and presented in the African Elephant Status Reports (AESR) the latest of which was published in 2016. The 2016 AESR estimates a combined range in the four countries considered here as approximately 500,000 km$^2$ and a total population estimate of at least 255,000. This amounts to ca. 50–60% of the species as a whole (415,428 ± 20,112 with possibly an additional 117,128 to 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;

Further discussion of the populations of *Loxodonta africana* in Botswana, Namibia, South Africa and Zimbabwe can be found in the IUCN/TRAFFIC Analyses for CoP18 Prop. 12.

CoP18 Doc. 69.2 (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 2017. It reports on the proportion of illegally killed elephants (PIKE) at more than 60 sites in 30 countries in Africa and 28 sites in 13 countries in Asia. A PIKE level of 0.5 or lower is generally considered sustainable, although the report suggests that the use of the 0.5 PIKE "threshold" should be treated with some caution. The southern African sub-region (Angola, Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe) was assessed as having a PIKE level of 0.48 in the most recent assessment, having increased from 0.41 in 2016. This is the second highest level ever recorded in this subregion. It is difficult to estimate poaching impact at the site level, especially in sites that do not report sufficiently large numbers of carcasses, or where there may be indications of bias in reported PIKE levels.

The ETIS analysis of illegal ivory trade for CoP18 has identified Zimbabwe as a Category C country for the first time; a party affected by the illegal trade in ivory. South Africa has also been reported as a country with an involvement in illegal ivory trade for several years. Namibia exhibits mid-range variables in terms of the mean number of seizures and the mean weight value, while for Botswana, frequency and scale measures point to a rather small number of mostly medium weight seizures, with no involvement in the large-scale ivory movements.

**Analysis**: The *Loxodonta africana* population of Botswana, Namibia, South Africa and Zimbabwe is not small, nor does it have a restricted distribution or undergoing a marked decline. Therefore, this population does not meet the biological criteria for inclusion in Appendix I (See Analyses for CoP18 Prop. 12). 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, these constraints can be interpreted as special measures under the terms of the precautionary measures in Annex 4 of *Res. Conf. 9.24 (Rev. CoP17)*. Adoption of the proposed changes would remove some which are no longer valid, with timeframes having passed and decisions no longer in effect. However, if accepted, the main effect would be to allow exports of registered raw ivory but without the oversight of previous mechanisms by the Standing Committee and the Conference of the Parties. 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. Insufficient detail of such measures is provided in the SS to determine whether or not this would be the case.

## 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, Côte d'Ivoire, Gabon, Kenya, Liberia, Niger, Nigeria, Sudan, Syrian Arab Republic and Togo

**Summary**: This proposal applies only to the African Elephant *Loxodonta africana* population of four contiguous southern African countries: Botswana, Namibia, South Africa and Zimbabwe. The most comprehensive and reliable information on distribution and population of the species is contained in the African Elephant Database (AED), maintained by the IUCN/SSC African Elephant Specialist Group, and presented in the African Elephant Status Reports (AESR), the latest of which was published in 2016. The 2016 AESR estimates a combined range in the four countries considered here as approximately 500,000 km$^2$ and a total population estimate of at least 255,000. This amounts to ca. 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.

CoP18 Doc. 69.2 (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 2017. It reports on the proportion of illegally killed elephants (PIKE) at more than 60 sites in 30 countries in Africa and 28 sites in 13 countries in Asia. A PIKE level of 0.5 or lower is generally considered sustainable, although the report suggests that the use of the 0.5 PIKE “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 0.48 in the most recent assessment, having increased from 0.41 in 2016. This is the second highest level ever recorded in this subregion. It is difficult to estimate poaching impact at the site level, especially in sites that do not report sufficiently large numbers of carcasses, or where there may be indications of bias in reported PIKE levels.

The Supporting Statement (SS) of the proposal deals extensively with the wider *Loxodonta africana* population, which is not the subject of the amendment proposal. It draws attention to the high levels of illegal killing of elephants that have been recorded (chiefly through the MIKE programme) in many parts of the range since 2006 (see CoP18 Doc. 69.2), associated with elevated levels of illegal trade in ivory recorded from 2008 onwards, as indicated by seizure data contained in the Elephant Trade Information System (ETIS) (see CoP18 Doc. 69.3). The proponents argue that transferring the Appendix-II listed *L. africana* population to Appendix I will indicate that the CITES Parties do not intend to allow commercial trade in ivory in the future, and that this will serve as a disincentive for the illegal killing of elephants, thereby enhancing the conservation status of this species in its range as a whole, and also benefitting the Appendix-I listed Asian Elephant *Elephas maximus*.

**Analysis**: The *Loxodonta africana* population of Botswana, Namibia, South Africa and Zimbabwe is not small, nor does it have a restricted range and it is not undergoing a marked decline. Therefore, this population does 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 SS of the current proposal and of proposals CoP18 Prop. 10, submitted by Zambia, and CoP18 Prop. 11 submitted by Botswana, Namibia and Zimbabwe.

## Inclusion of Woolly Mammoth *Mammuthus primigenius* in Appendix II

## **Proponent:** Israel

**Summary**: The Woolly Mammoth *Mammuthus primigenius* was the final surviving member of the *Mammuthus* genus, with the last known populations surviving on Wrangel Island, East Siberian Sea (around 3,700 years ago) and St Paul Island, Alaska (around 5,600 years ago). During the last glacial period (around 115,000–12,000 years ago), Woolly Mammoths were at their most widespread and were present across North America, northern Asia and Europe. Woolly Mammoth extinction is thought to have been caused by a reduction in suitable habitat due to temperature increases, combined with an increase in anthropogenic hunting pressure.

The current primary Woolly Mammoth commodity in trade is ivory, which is largely recovered from the permafrost in Siberia, where ivory has not become fossilised. Little is known about the trade in mammoth ivory, but it is thought that the main trade route is from Russia to Hong Kong SAR and then tusks are mostly exported to mainland China for processing. While information on the global trade in mammoth ivory is not available, import and export data from Hong Kong SAR and USA import data are presented below:

Hong Kong SAR customs data (between 2005-2016) report that:
- Hong Kong SAR imports on average 36,000 kg of mammoth ivory (raw tusks and/or unworked tusk pieces) annually, mostly from Russia.
- The majority of mammoth ivory is re-exported (on average 29,000 kg annually) to mainland China.

USA import data (between 1999–2013) report that:
- Average annual mammoth ivory commodity imports to the USA were 1,600 tusks, 800 kg and 120 pieces of tusk/ivory and 40,000 ivory carvings.
- The majority of these imports were from Hong Kong SAR.

Data on the origin of mammoth ivory traded by both Hong Kong SAR and the USA showed that although the vast majority of mammoth ivory traded was listed as originating in Russia, smaller volumes of trade were reported with origins where mammoth ivory is likely to be fossilised: mainly European countries, but small amounts reportedly originated from African Elephant *Loxodonta africana* range States (e.g. Chad, Gabon, Kenya, Mozambique and South Africa) and Asian Elephant *Elephas maximus* range States (e.g. China, Indonesia and Thailand).

The Supporting Statement makes it clear that this proposal is aimed to help regulation of trade in ivory from living elephants by preventing the laundering/mislabelling of ivory from extant elephant species as Woolly Mammoth ivory. Evidence from mainland China, Hong Kong SAR, Myanmar and the USA suggests that some vendors are mislabelling elephant ivory as mammoth ivory, but there is no comprehensive assessment to suggest how widespread this practice is.

The proposal of an extinct species for inclusion in the Appendices is unusual and CITES provisions for this are fairly limited. The Convention text does not preclude the listing of extinct species although *Res. Conf. 9.24 (Rev. CoP17)* states that “extinct species should not normally be proposed for inclusion in the Appendices”. When higher listings are considered, Annex 3 of *Res. Conf. 9.24 (Rev. CoP17)* states that “Parties are encouraged to note any extinct species in the higher taxon and to clarify whether these are included or excluded from the proposed listing”. The proponent goes on to argue that there are instances where the deletion of extinct species from the Appendices is discouraged, such as in Annex 4 Paragraph D of *Res. Conf. 9.24 (Rev. CoP17)*, which gives four situations where extinct species should not be deleted, including if “they resemble extant species included in the Appendices”.

When whole mammoth tusks are traded it is relatively straightforward to tell them apart from elephant tusks, as mammoth tusks display a twist whereas elephant tusks are generally straight. Cross sections which display Schreger lines can also be used to distinguish mammoth ivory (average Schreger line angle <90°) from elephant ivory (average Schreger line angle >115°). Identification becomes more of an issue for worked mammoth ivory, especially small pieces (carvings, pendants etc.) which may not display Schreger lines and can often be very difficult to tell apart from elephant

ivory. Instances of elephant ivory being painted or intentionally discoloured to appear as mammoth ivory have been observed. Fossilised mammoth ivory cannot be carved and therefore is not a substitute for elephant ivory for carvings or other processed items.

There are few legal provisions for regulation of trade in mammoth ivory. Although many countries have laws banning trade in ivory, this is mostly directed at elephant ivory.

**Analysis:** The Supporting Statement makes it clear that the purpose of the listing is to prevent illegal trade in living elephants by preventing the mislabelling of elephant ivory as mammoth ivory. Anecdotal evidence of elephant ivory being traded as mammoth ivory is found within the literature and surveys, but the scale of these substitutions is unclear and thought to be quite limited.

Some believe that mammoth ivory should be promoted as an alternative to elephant ivory as mammoths are already extinct, whereas others feel there should be a complete trade ban on all ivory including mammoth in order to close the potential for laundering of elephant ivory. The proponent does not take a position on this, clarifying that its intention is simply to improve documentation and regulation of mammoth ivory trade in support of the conservation of extant elephant species.

*Res. Conf. 9.24 (Rev. CoP17)* states in Annex 3 that “extinct species should not normally be proposed for inclusion in the Appendices”, but this does not definitively preclude their inclusion.

When traded as tusks or large pieces of tusk with a visible cross section, it is fairly straightforward to distinguish between elephant and mammoth ivory. Difficulties in identification occur with worked pieces of ivory, especially when they are small and the Schreger lines are not apparent. Given that USA customs data show high levels of international trade in mammoth ivory carvings, it would appear that the look-alike criteria in Annex 2b of *Res. Conf. 9.24 (Rev. CoP17)* would be met when non-fossilised mammoth ivory is traded in processed form.

Overall, the regulation of international trade in mammoth ivory through an Appendix II listing may help reduce opportunities for misdeclaration and/or laundering of elephant ivory. However, the extent to which this would contribute to a reduction of global illegal elephant ivory trade flows is unknown and likely to be limited. The Parties will need to weigh these potential benefits against the costs of regulation of significant legal mammoth ivory movements.

**Other Considerations:** *Res. Conf. 11.21 (Rev. CoP17) Use of annotations in Appendices I and II* indicates that only animal species listed in Appendix III can be annotated. However, given the proposal to list an extinct species is somewhat unusual, if the Parties decided to list the species in Appendix II, it may be useful to consider restricting the proposal to whole tusks and the specimens of the species in the form in which they are traded that resemble elephant ivory and are hard to distinguish, namely worked ivory, which would help ensure that effective control of trade in elephants is achieved. Fossils and other artefacts including non-commercial scientific exchanges of mammoth parts (such as bones, skin, hair, and DNA) for research and education by museums and universities could be excluded.

## Introduction to Proposals 14-17 and 20 and 21: Australian endemic species proposals resulting from the Periodic Review of the Appendices

## Proponent (for all proposals): Australia

These proposals result from the Periodic Review of the Appendices *(Res. Conf. 14.8 (Rev. CoP17*)), undertaken by the CITES Animals Committee. The Periodic Review recognises there is a need to conduct reviews of species listed in Appendices I and II to ensure that species are appropriately listed, based on current biological and trade information, and that this properly reflects its conservation needs. Many of the taxa reviewed through this process are species which were listed very early in the history of the Convention and for which little or no trade has since been recorded. Due to the similarities in the proposals they are discussed together here.

The reviews that resulted in these proposals were all undertaken by Australia and concern two birds and four mammals, all endemic to Australia. These have been listed in Appendix I since the early days of CITES, when a number of Parties, including Australia, included their threatened species in the Appendices regardless of whether trade was an important conservation issue for them or not. All four mammals and one of the birds are still extant and one bird subspecies is extinct. In all cases, Australia has determined that trade is not, and never has been, a concern for the species, with all the extant species fully protected under national legislation. None of these species therefore meets the trade criteria for inclusion in Appendix I, although some may meet the biological criteria. Furthermore, it is unlikely that a transfer of any of the species to Appendix II will stimulate trade in these or any other species included in Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17)* Annex 4 A2. The Supporting Statements provide comprehensive and up-to-date accounts of the status of each of the species and of conservation measures currently in place and these will not be further discussed in detail here.

All these species are proposed for transfer to Appendix II. This is because under *Res. Conf. 9.24 (Rev. CoP17*), extant species in Appendix I that do not meet the criteria for inclusion in the Appendices should first be transferred to Appendix II for a period of two intervals between CoPs before being deleted from the Appendices. In one case (Prop. 15 *Pseudomys fieldi praeconis*) a taxonomic change is also proposed to bring the listing into line with CITES standard nomenclature.

## Prop. 14 Transfer of the Greater Stick-nest Rat *Leporillus conditor* from Appendix I to Appendix II

**Summary and Analysis**: The Greater Stick-nest Rat *Leporillus conditor* is endemic to Australia and is classified as Near Threatened by IUCN (2016). It was listed in Appendix I in 1975. No trade has been recorded in the CITES Trade Database since the species was listed. It does not meet the 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 species included in Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17*) Annex 4 A2ai).

## Prop. 15 Transfer of the Djoongari or Shark Bay Mouse *Pseudomys fieldi praeconis* from Appendix I to Appendix II, with the new listing modified to *Pseudomys fieldi* in accordance with standard CITES nomenclature

**Summary and Analysis**: The Shark Bay Mouse is currently listed in Appendix I as *Pseudomys fieldi praeconis.* It was first listed as *P. praecornis* in Appendix I in 1975 and a second taxon, "*Pseudomys fieldi*", was also listed at that time. In 1979 "*Pseudomys fieldi*" was removed from the Appendices (known at the time only from one specimen on the mainland, and subsequently declared as extinct there). Fifteen years later *P. praecornis* was synonymised with *fieldi*, with *fieldi* taking priority over *praeconis*. With no other subspecies extant the taxon should correctly be identified as *Pseudomys fieldi* under standard CITES nomenclature. This species is endemic to Australia and is currently classified as Vulnerable by IUCN (2016). No trade has been recorded in the CITES Trade Database since the taxon was listed. It does not meet the trade criteria for inclusion in Appendix I. No other species of *Pseudomys* are included in the Appendices and therefore transfer of this taxon will not stimulate trade in any other species included in Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17)* Annex 4 A2ai).

## Prop. 16 Transfer of the False Swamp Rat *Xeromys myoides* from Appendix I to Appendix II

**Summary and Analysis**: The False Swamp Rat *Xeromys myoides* is endemic to Australia and is classified as Vulnerable by IUCN (2016). It was listed in Appendix I in 1975. No trade has been recorded in this species. It does not meet the trade criteria for inclusion in Appendix I. No other species of *Xeromys* are included in the Appendices and the transfer of this taxon will therefore not stimulate trade in any other species included in Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17)* Annex 4 A2ai).

## Prop. 17 Transfer of the Central Rock-rat *Zyzomys pedunculatus* from Appendix I to Appendix II

**Summary and Analysis**: The Central Rock-rat *Zyzomys pedunculatus* is endemic to Australia and is classified as Critically Endangered by IUCN (2016). It was listed in Appendix I in 1975. No trade has been recorded in the CITES Trade Database and the species does not meet the trade criteria for inclusion in Appendix I. No other species of *Zyzomys* are included in the Appendices and therefore transfer of this taxon will not stimulate trade in any other species included in Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17*) Annex 4 A2ai).

## Prop. 20 Transfer of the Lesser Rufous Bristlebird *Dasyornis broadbenti litoralis* from Appendix I to Appendix II

**Summary and Analysis**: The Lesser Rufous Bristlebird *Dasyornis broadbenti litoralis* is extinct, having last been reliably recorded in 1906. It was listed in Appendix I in 1975. It is noted in the Appendices that it is “possibly extinct”. The subspecies is listed as extinct under the Environment Protection and Biodiversity Conservation Act 1999 and presumed extinct under the Western Australian Wildlife Conservation Act 1950. It was a subspecies of the Rufous Bristlebird *Dasyornis broadbenti,* an Australian endemic, which is not listed in the CITES Appendices and has been classified as Least Concern by BirdLife International and IUCN since 2004. No trade has been reported in this species since it was listed. This subspecies did somewhat resemble *Dasyornis longirostris,* which is also included in Appendix I and is the subject of CoP18 Prop. 21 to transfer the species to Appendix II. However, it is considered unlikely that a transfer of this extinct subspecies to Appendix II will stimulate trade in any other species included in the Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17)* Annex 4 A2ai).

## Prop. 21 Transfer of the Long-billed Bristlebird *Dasyornis longirostris* from Appendix I to Appendix II

**Summary and Analysis**: The Long-billed Bristlebird *Dasyornis longirostris* is endemic to Australia and is classified as Endangered by BirdLife International and IUCN (2016). It was listed in Appendix I in 1975. No trade has been reported in this species or the extinct *Dasyornis broadbenti litoralis* in the CITES Trade Database. No other species of *Dasyornis* are listed in the Appendices. It does not meet the trade criteria for inclusion in Appendix I. It is unlikely that a transfer of the species to Appendix II will stimulate trade in this or any other species included in Appendix I thus meeting the Precautionary Measures of *Res. Conf. 9.24 (Rev. CoP17)* Annex 4 A2ai).

## Inclusion of Reeves's Pheasant *Syrmaticus reevesii* in Appendix II

## **Proponent:** China

**Summary**: Reeves's Pheasant *Syrmaticus reevesii* is a distinctly plumaged pheasant endemic to central China. Adult males have black and white-banded tail feathers that can measure up to 2.4 m, the longest of any pheasant species. *Syrmaticus reevesii* was widely distributed and relatively common in central China until the mid-20th century, but since then appears to have declined rapidly and is now primarily concentrated in three fragmented subpopulations (the Dabie and Qinling Mountains and the Shennongjia mountainous massif). Surveys in 2011-2012 at 89 sites across the species' known post-1980 range indicated that *S. reevesii* had disappeared from 46% of survey sites and declined in a further 52% of sites. The total effective population size of the species is estimated to have declined by at least 50% in the last ten years, equivalent to two generations. A survey published in 2009 estimated the population size at 23,000 individuals, while the IUCN Red List assessment in 2018 estimated 3,000-5,000 mature individuals and up to 15,000 individuals in total, and categorised the species as Vulnerable with a decreasing population trend. The species has been introduced to Pakistan, the USA and several European countries for sport hunting and for ornamental purposes, and some populations have naturalized.

The main threats to the species are reported to be illegal hunting, habitat loss and fragmentation, and deliberate poisoning in farmland. While the species is protected from hunting under Chinese legislation, surveys in 2011-2012 found evidence of poaching in 83% of surveyed sites where the species was still known to be present. The species is reportedly hunted by local communities for food, while eggs are taken and live individuals are captured to supply zoos and captive breeding centres, although it is not clear whether this is to meet domestic or international demand. There is international demand for feathers that are reportedly used for circus costumes, home decorating and flower arranging, and fly-tying for angling. Although exports of the species for commercial purposes have reportedly been prohibited under Chinese legislation since 1989, the EU and the USA have reported imports of relatively large quantities of feathers originating in China for commercial purposes (approximately 40 kg and 1,500 wild-sourced and 1,800 captive-bred/born sourced feathers imported by the EU between 2007 and 2015; 5 kg and 27,000 wild-sourced/ranched and 127 kg and 90,300 captive-bred/born sourced feathers imported by the US between 2007 and 2013). No imports of the species have been reported by the EU since 2015 (US import data for 2014 onwards were not available for analysis).

Reported trade in feathers is likely to consist of the longer tail feathers (of which each adult male has two) but may comprise other feathers as well. It is anecdotally reported that feather imports to Europe have substantially increased in price and decreased in length, which may indicate that availability has decreased.

**Analysis:** *Syrmaticus reevesii* has a relatively extensive but fragmented range in central China, with a maximum population size estimated as 15,000 individuals. There is evidence of declines and local extirpations of many previously known populations since the mid-20th century. The total population is estimated to have declined by at least 50% in the last ten years (two generations), and therefore meets the biological criteria for inclusion in Appendix I. While habitat loss is reportedly the principal threat to the species, hunting is also reported to be a threat, despite protection under national legislation. Although commercial trade in the species from China has been prohibited since 1989, commercial trade in wild, ranched and captive specimens from China has been reported. Although the extent to which international trade is driving the observed population declines is uncertain, the species meets the criteria for inclusion in Appendix II in accordance with the precautionary measures in Annex 4 of *Res. Conf. 9.24 (Rev. CoP17)*.

## Transfer of Black Crowned-crane *Balearica pavonina* from Appendix II to Appendix I

**Proponents:** Burkina Faso, Côte d'Ivoire and Senegal

**Summary**: Black Crowned-crane *Balearica pavonina* is a distinctive African waterbird that has a low reproductive capacity, with an average of one juvenile reared by each breeding pair annually. The species occurs from Senegal and the Gambia to central Ethiopia, northern Uganda and northern Kenya; it is native in 13 countries and vagrant in a further 10. Two subspecies are recognised: *B. p. pavonina* occupies the western part of the species' range from Senegal and the Gambia to Chad, while *B. p. ceciliae* occurs from Chad to Sudan, South Sudan, Ethiopia, Eritrea and northern Kenya.

In 2004, the total population of the species was estimated at 43,000–70,000 individuals, or ca. 28,000–47,000 mature individuals. The species has been categorised as Vulnerable on the IUCN Red List since 2010 on the basis of an estimated worst-case decline of 30–49% over the previous three generations (45 years). However, it was noted that the true extent of the decline was uncertain and could be greater since the accuracy of both the more recent (2004) and historic (1985) population estimates available for *B. p. ceciliae* was questionable. No more recent total population estimates for the species or either subspecies are available. Efforts to obtain more accurate estimates are considerably limited by political instability across large parts of the species' range. Declines have been reported in populations in Benin, Burkina Faso, the Gambia, Mali, Nigeria, Sudan, South Sudan and Togo, although the extent of these declines is unclear.

Live trapping for local domestication or international trade is reportedly one of the most significant threats to the species. Hunting of the species for food, use of parts in traditional medicine, and use of feathers in traditional dance have also been reported as a threat in certain areas. Legal international trade was mainly for commercial purposes and zoos. Hunting and trapping are considered to have contributed to the near-extinction of the species in Mali and Nigeria and localised declines in Senegal. Since 2007 exporters have reported a total of 524 live *B. pavonina* in trade, 36% of which were reportedly captive-born or bred, although the species is considered difficult to maintain and breed in captivity. Concerns over the sustainability of the reported trade in wild-sourced birds led to the species being included in the Review of Significant Trade (RST) and resulted in recommendations to suspend trade from Guinea, Sudan, South Sudan and Mali which remain in place. Illegal trade, including cross-border trade, is reported to be a concern in at least seven range States, however the extent of this trade is unclear.

Habitat loss and degradation, human and livestock disturbance, and direct poisoning to reduce crop depredation also reportedly pose a threat to the species. *Balearica pavonina* is legally protected in most range States, but this protection is considered to be largely ineffective due to low public awareness and insufficient resources for enforcement.

**Analysis:** *Balearica pavonina* has a wide but fragmented distribution and low productivity. It has an estimated population of 43,000–70,000 individuals. In 2010, the population was estimated to have declined by 30–49% over three generations (45 years), but the true decline may be greater depending on the status of one of the two subspecies, *B. p. ceciliae*, for which reliable population estimates are not available due to political instability within its range. Although the species is legally protected in most range States, live trapping for local domestication and international trade has reportedly been the cause of severe declines in certain populations. Concerns regarding implementation of the Appendix II listing have been raised through the RST process, with three range States (and one non-range State) currently subject to recommendations to suspend trade. While current reported levels of trade in wild specimens are low, illegal international trade is reported to be a concern, although the extent of this trade is unclear. Since the species is affected by international trade and the estimated population decline may be close to and could exceed 50% over the last 45 years, *B. pavonina* is likely to meet the criteria for inclusion in Appendix I.

**Other Considerations:** Trade suspensions are in place for several range States through the RST process, and it appears that much of the international trade that currently takes place in wild specimens is illegal; it is therefore unclear what additional protection inclusion in Appendix I would

provide. However, given concerns over illegal trade and reported declines caused by harvest, a suspension of further trade from wild sources may be in the conservation interest of the species.

*B. pavonina* is considered similar to the Grey Crowned-crane *B. regulorum*, which occurs in Eastern and Southern Africa, and was not previously distinguished as a separate species. *B. regulorum* is currently included in Appendix II and therefore a transfer of *B. pavonina* to Appendix I may present implementation difficulties.

## Transfer of the Mexican population of American Crocodile *Crocodylus acutus* from Appendix I to Appendix II

### **Proponent:** Mexico

**Summary**: The proponents seek to transfer the Mexican population of American Crocodile *Crocodylus acutus* from Appendix I to Appendix II. Since submission, the proponent has indicated to the CITES Secretariat its intention to amend the proposal to include a zero export quota for wild specimens for consideration at CoP18. The species was included in Appendix II in 1975 and transferred to Appendix I in 1981; the population of Cuba and several Colombian populations were transferred to Appendix II in 2005 and 2017, respectively.

*Crocodylus acutus* is a widely distributed species, occurring in 17 range States from the USA and Mexico through to Central America, the Caribbean and northern South America. In Mexico, the species is found in both fresh and saltwater habitats in coastal and inland areas, with a distribution area estimated at just under 200,000 $km^2$ from Sinaloa to Chiapas states on the Pacific coast to the eastern coast of the Yucatán peninsula.

The species was categorised as globally Vulnerable on the IUCN Red List in 2009. While severely depleted historically due to overexploitation for skins, substantial recovery is reported to have taken place in several countries including Mexico, and the global population is determined to be increasing. Surveys have indicated continued increases in certain localities in Mexico, and increases in reported incidences of human-crocodile interactions in the country may be indicative of an increasing population. Although there is no reliable estimate of the current population size in Mexico, available survey data are not consistent with the wild population being small.

Reported threats in Mexico include illegal hunting for skins and meat, and habitat loss and degradation particularly as a result of tourism developments in coastal areas. There is evidence of inbreeding in certain populations that have been fragmented by tourism developments in the Yucatán peninsula. Genetic introgression with Morelet's Crocodile *Crocodylus moreletii* is also reported as a natural occurrence in this area and may pose an additional threat.

The species is in demand for international trade in skins and there are plans to develop and implement a management scheme that will aim to replicate that already in place for *C. moreletii* in the country, in consultation with the national CITES Authorities and experts in the species. This scheme will involve a combination of ranching and captive breeding, with egg collection limited to localities where monitoring indicates that populations are healthy and stable. The intended prohibition of trade in wild specimens is expected to mitigate potential negative impacts on wild populations while the proposed management scheme is refined.

**Analysis:** The available information indicates that the Mexican population of *Crocodylus acutus* does not meet the biological criteria for inclusion in Appendix I: it has a wide distribution within the country, and the population appears to have recovered substantially since the Appendix I listing, with continued increases in certain areas. Regarding the Precautionary Measures outlined in Annex 4 of *Res. Conf. 9.24 (Rev. CoP17)*, the species is in demand for international trade and a managed ranching/captive-breeding programme will be developed in co-ordination with the national CITES Authorities and other experts. The proponents have indicated their intention to amend the proposal to include a zero export quota for wild specimens, although it is not clear whether the quota would also apply to ranched specimens. If confirmed, the zero export quota for wild specimens would appear to be an adequate precautionary measure to allow the establishment of appropriate management systems. According to paragraphs 1b) ii) and d) of *Res. Conf. 11.21 (Rev. CoP17),* removal or amendment of a quota that is an integral part of the listing would need to be the subject of an amendment proposal, which would normally be considered at a future meeting of the Conference of the Parties.

## Inclusion of Garden Lizards *Calotes nigrilabris* and *Calotes pethiyagodai* in Appendix I

**Proponent:** Sri Lanka

**Summary**: The Garden Lizards *Calotes nigrilabris* and *C. pethiyagodai* are members of the agamid lizard genus *Calotes* which comprises some 25 species in total occurring in South and South-east Asia. Both species are endemic to Sri Lanka, where they inhabit the high elevation areas of the Central Highlands and Knuckles Massif.

*Calotes nigrilabris* is found within the Central Highlands region, primarily within montane and submontane cloud forests mainly at altitudes above 1,400 m, and has an estimated area of occupancy of around 300 km$^2$, divided between five known sites. *Calotes pethiyagodai,* described in 2014*,* has only been recorded within the Knuckles Massif, at elevations of between 900 m and 1500 m above sea level, with an estimated range of less than 25 km$^2$.

No estimates of total population sizes are available for either species. In 1988, a density estimate for *C. nigrilabris* of 220 individuals per hectare was obtained and recent observations have suggested the population may be declining.
Both species are reported to be affected by deforestation, the removal of forest understorey to grow cardamom, pesticides, road mortality and the spread of opportunistic predators, although there is little information on the direct impact of these threats.
Both species have been offered for sale at relatively high prices both online and in physical markets in the USA and Europe, but trade instances appear to be low. Both species are protected under Sri Lankan law and harvest and export have been prohibited since 1993. It seems unlikely that all individuals observed for sale are the offspring of animals exported pre-1993 (particularly *Calotes pethiyagodai* which was only described in 2014), therefore it seems probable that wild animals are illegally entering the trade.

**Analysis:** On the basis of a restricted area of distribution (<25 km$^2$), with the extent and quality of this habitat in decline, *Calotes pethiyagodai* meets the biological criteria for inclusion in Appendix I. For *C. nigrilabris*, the area of distribution is larger (estimates range from 300 to 500 km$^2$), but this habitat is also fragmented and likely to be declining. It is possible that it meets the Appendix I biological criteria. In recent years, both species have been offered for sale within the hobbyist trade (although numbers appear low) and illegal collection from the wild is suspected.

It is thought that adults of both species can be differentiated from each other, although it is more difficult with juveniles. As it seems that it is mainly adults in trade, if Parties decide that only one species meets the Appendix I criteria, the other should not necessarily be listed in Appendix II as a look-alike (for which there is no provision in Appendix I).

**Other Considerations:** An additional six species of *Calotes* occur in Sri Lanka, of which four are also endemic. While identification guides exist, other *Calotes* species could be affected by a shift in harvest pressure were either species proposed here to be included in the Appendices, even though trade in all lizards is already prohibited under national legislation in Sri Lanka. Listing of other species in the genus native to Sri Lanka in Appendix III could also be considered; stipulating a zero export quota with the listing would reflect that export from Sri Lanka is illegal.

## Inclusion of Horned Lizards *Ceratophora* spp. in Appendix I

**Proponent:** Sri Lanka

**Summary**: Horned Lizards *Ceratophora* spp. are a genus of small lizards known for their spectacular colouration and distinctive horn-like appendages. The genus is represented by five species, all of which are endemic to Sri Lanka. Limited recent information is available on population size and distribution, but from what is known it appears that the species are generally range restricted and considered threatened:

- *Ceratophora erdeleni* and *C. karu* were both described in 1998 and categorised nationally as critically endangered in 2012, and are restricted to one forest reserve, each with a range estimated at between 10 and 100 km$^2$. Both have been described as "rare" and the population "small". In 2017, 12 and 10 online adverts respectively were observed.

- *Ceratophora aspera* was assessed on the IUCN Red List as Vulnerable in 2009 due to a continuing decline in quality and extent of its habitat. The extent of occupancy was estimated at 700 km$^2$ in 2005 and less than 500 km$^2$ in 2012. Twelve online adverts were observed in 2017.

- *Ceratophora tennentii* was assessed on the IUCN Red List as Endangered in 1998, and nationally as critically endangered in 2012. In 2005 the area of occupancy was estimated to be around 130 km$^2$ (divided between three known sites) and in 2012 it was suggested it could be as low as 10 km$^2$. This species is considered to be one of the most common in trade. Forty online advertisements were recorded for this species during 2017–2018, while trade data record the import of 10 specimens into the USA between 2016–2017.

- *Ceratophora stoddartii* is considered nationally to be endangered, with an estimated area of occupancy of 200 km$^2$. In 2005 it was described as one of the more abundant species in the genus and is also considered to be one of the most common in trade. Fifty-seven online advertisements were recorded during 2017–2018, and 25 specimens imported into the USA between 2013 and 2017.

All species are threatened by continued habitat loss, fragmentation and degradation, with tolerance to habitat disturbance varying between species.

The distinctive appearance of these species makes them sought after by reptile collectors. Exports from Sri Lanka were banned in 1993. In recent years all species have been offered for sale, often at high prices outside of Sri Lanka, and are sometimes reported as being wild-caught.

Due to differences in colouration and morphology, it is said to be possible to distinguish all five species in their adult form, but not as juveniles, and most observed trade appeared to involve adults.

**Analysis:** All species have been globally or nationally assessed as endangered or critically endangered, except *Ceratophora aspera,* which was assessed as Vulnerable in 2009. Several of the species have a restricted distribution, which is likely to be fragmented, and are declining due to deforestation, and therefore appear to meet the biological criteria for inclusion in Appendix I: *Ceratophora erdeleni, C. karu*, *C. tennentii* and *C. stoddartii.*

In recent years, all species within the genus have been offered for sale within the hobbyist trade, some of which was reported as, or suspected to be, wild-sourced, and therefore illegal.

The area of occupancy for *Ceratophora aspera* has most recently been estimated at less than 500 km$^2$. In 2009 the habitat was declining in extent and quality and the species was categorised as Vulnerable. While the decline has likely continued, *C. aspera* is unlikely to meet the biological criteria for inclusion in Appendix I.

It is thought that adults of all species can be differentiated from each other, and although it is more difficult with juveniles it seems that currently it is mainly adults in trade. Therefore, if Parties decide

that not all species meet the Appendix I criteria, the other(s) should not necessarily be listed as look-alikes in Appendix II (for which there is no provision in Appendix I).

**Other Considerations:** Sri Lanka could consider an Appendix-III listing for *Ceratophora aspera*; stipulating a zero export quota with the listing would reflect that export from Sri Lanka is illegal.

## Inclusion of Pygmy Lizards *Cophotis ceylanica* and *Cophotis dumbara* in Appendix I

**Proponent:** Sri Lanka

**Summary**: The Pygmy Lizards *Cophotis ceylanica* and *C. dumbara* are small lizards endemic to the high altitude regions of central Sri Lanka and the only members of their genus. Both species are threatened by a number of factors including habitat loss and fragmentation: timber extraction and clearing of forest for tea plantations have already destroyed large areas of habitat.

***Cophotis ceylanica*** was classified in 1998 as endangered nationally. This species has a restricted range with an area of occupancy estimated at less than 500 $km^2$ and perhaps as low as 60 $km^2$. The species was considered "rare" in 2005. *Cophotis ceylanica* was estimated to have decreased by more than 50% in the decade prior to 1998, and was predicted to decline further, although the threats identified at the time did not include over-collection. Die-offs of hundreds of individuals occurred due to drought in the 1990s. In 2017 and 2018, 69 online adverts were observed in Europe and the USA; most individuals were described as captive-bred.

***Cophotis dumbara*** was described in 2006 and classified as Critically Endangered on the IUCN Red List in 2008. The population size is not known, nor is the current trend, but its habitat is severely fragmented and its area of occupancy is thought to be less than 10 $km^2$. Eight online adverts were found in Germany and the USA for *C. dumbara* in 2017 to 2018.

There is evidence of trade. Both species have been offered for sale at high prices, particularly within the USA and Europe, but trade instances appear to be relatively low. Both species are protected under Sri Lankan law, and harvest and export have been prohibited since 1993. It seems unlikely that all individuals observed for sale are the offspring of animals exported pre-1993 (particularly *C. dumbara*, which was only described in 2006), therefore it seems probable that wild animals are illegally entering trade.

It is considered that adults of the two species can be distinguished by finer taxonomic details, such as the number of spines and the appearance of scales in certain regions of the body, and although juveniles are very difficult to tell apart it appears that most current trade is in adults.

**Analysis:** On the basis of a restricted area of distribution (10 $km^2$) that is declining and fragmented, *C. dumbara* meets the biological criteria for inclusion in Appendix I. For *C. ceylanica*, the area of distribution is larger (<500 $km^2$ but perhaps as low as 60 $km^2$), which is likely to be declining and fragmented. The species was said to be rare in 2005, apparently having undergone a marked decline in the 1990s, and is highly vulnerable to extrinsic factors such as drought. Therefore, it is possible that *C. ceylanica* also meets the biological criteria for inclusion in Appendix I. In recent years, both species have been offered for sale (although numbers appear relatively low) within the hobbyist trade and illegal collection from the wild is suspected.

**Other Considerations:** *Res. Conf. 12.10* (*Rev. CoP15*) outlines that inclusion in Appendix I would mean commercial captive breeding operations would need to meet the provisions of *Res. Conf. 10.16 (Rev.)* to be registered with the CITES Secretariat, and that registered operations should ensure an appropriate and secure marking system to identify all breeding stock and specimens in trade. This enhanced oversight could help allay any concerns over fraudulent claims of captive breeding and wild offtake for breeding stock.

## Inclusion of the Hump-nosed Lizard *Lyriocephalus scutatus* in Appendix I

**Proponent:** Sri Lanka

**Summary**: The Hump-nosed Lizard *Lyriocephalus scutatus* is a medium-sized lizard with a striking appearance. It is the largest of Sri Lanka's endemic agamid lizards and is the only member of the genus. It occurs in the south-west of the country in an area of somewhat less than 17,000 km$^2$. It is found in a variety of habitats, including forests, plantations and gardens from 25 m to 1600 m above sea level. Individuals reach sexual maturity within a year and a female may produce up to 30 eggs a year.

Population size and trends are unknown. Loss and fragmentation of natural habitat has been severe within its range, one population was nearly extirpated due to intensive logging, although there is evidence that the species can adapt to modified habitats. The species was assessed on the IUCN Red List in 2009 as Near Threatened and considered "not rare" within its range. Collection for the pet trade was said to be reducing population numbers.

The distinctive appearance of the species makes it sought after by reptile collectors. According to one estimate, around 500 specimens were collected from the wild for export in the past 30 years. Export from Sri Lanka has been prohibited since 1993, although the species has been offered for sale at high prices outside of the range State. Given reported challenges in captive breeding it is thought unlikely these animals are the progeny of individuals imported pre-1993.

**Analysis:** The species is in demand for the hobbyist trade within the EU, USA and Asia, with illegal collection from the wild suspected, although the overall volume of trade is not known. The population size of *Lyriocephalus scutatus* is unknown but unlikely to be small. It was not considered to be rare within its range ten years ago, and despite severe and ongoing deforestation within its range, it does not have a restricted distribution. While at least one population has reportedly been almost extirpated due to logging, and collection for the pet trade is said to be causing a decline, it is unclear if the species overall has undergone a marked decline. Therefore, there is insufficient information to determine if the species meets the criteria for inclusion in Appendix I.

**Other Considerations:** Sri Lanka could consider an Appendix III listing. In this case stipulating a zero-export quota with the listing would reflect that export from Sri Lanka is illegal.

*Res. Conf. 12.10* (*Rev. CoP15*) outlines that inclusion in Appendix I would mean commercial captive breeding operations would need to meet the provisions of *Res. Conf. 10.16 (Rev.)* to be registered with the CITES Secretariat, and that registered operations shall ensure an appropriate and secure marking system to identify all breeding stock and specimens in trade. This enhanced oversight could help allay any concerns over fraudulent claims of captive breeding and wild offtake for breeding stock.

## Inclusion of Leopard Geckos *Goniurosaurus* spp. (populations of China and Viet Nam) in Appendix II

**Proponent:** China, European Union and Viet Nam

**Summary**: *Goniurosaurus* is a genus of lizards comprising 19 species; 13 of which are native to China and/or Viet Nam (and are subject to this proposal) and six of which are endemic to Japan (not subject to this proposal). Eleven of the 13 species occurring in China and Viet Nam were described from 1999 onwards.

Very little is known about the ecology of most of the species, although they appear to show a high degree of adaptation to specific microhabitats and most are considered to have limited ranges, with many only known from a single mountain range or island. In general, the species are nocturnal, associated with rock/karst-type topography, and are found near to streams and within primary rainforest. Reproductive capacity is likely to be low, males are thought to reach maturity at around one year of age and females lay clutches of two to three eggs annually.

Population estimates are lacking for almost all species. Published IUCN Red List assessments are available for three of the species: one Critically Endangered (*G. huuliensis*), one Endangered (*G. catbaensis*) and one Vulnerable (*G. lichtenfelderi*). A further five species have assessments accepted for publication in March 2019: one Critically Endangered (*G. yingdeensis*), three Endangered (*G. bawanglingensis, G. liboensis* and *G. zhelongi*), and one Data Deficient (*G. zhoui*).

Due to their attractive appearance and colour patterns, many species (ten out of 13) are known to be traded internationally as pets, with Europe, Japan and the USA identified as key markets. Comprehensive trade data are lacking, but imports reported by the USA from 1999-2018 totalled nearly 17,000 individuals with 70% of imports reported as wild sourced. Only three species were not reported in global trade and they are three of the most recently described species *G. kwangsiensis*, *G. liboensis* and *G. zhoui*. However, it is believed that recently discovered species may be particularly vulnerable to exploitation. Local extirpations have been recorded for three species to feed demand from the pet trade, and newly described species are often advertised at higher prices. The most highly traded species based on available data are *G. lichtenfelderi, G. hainanensis and G. luii;* trade in *G. catbaensis* may also be significant (see below). There also appears to be harvest for the domestic pet trade and medicinal purposes.

***Goniurosaurus catbaensis*** is endemic to Cat Ba Island, Viet Nam. Described in 2008, the species was assessed as globally Endangered in 2016 and has an estimated area of occupancy of 120 km$^2$ (which is declining) and a severely fragmented population which may be less than 250 mature individuals. Habitat destruction is a major threat, and a flood in 2015 appears to have caused local extirpations. *G. catbaensis* was the species most commonly advertised of seven Vietnamese endemic reptiles observed for sale online in Europe and Japan, and is frequently observed in pet shops in southern Viet Nam where they are reported to have been collected from the wild.

***Goniurosaurus luii*** is native to northern Viet Nam and western Guangxi, China. No estimates of the total population size are available. The species was subject to over-exploitation for commercial sale before it was described in 1999, which has led to extirpation from its type locality. Some trade has been reported to the USA (from 1999-2018 ca. 600 were imported) and it has been observed in pet shops in southern Viet Nam (believed to be collected from the wild) and in Japan. Occasionally *G. luii* is harvested from the wild in China for use in traditional medicine.

***Goniurosaurus lichtenfelderi*** is known from three provinces and one archipelago in Viet Nam and was assessed as globally Vulnerable in 2017. Over 7,000 individuals were reportedly imported into the USA from 1999-2018, accounting for 44% of the USA's reported imports of *Goniurosaurus*. Trade in *G. lichtenfelderi* has also been reported in Europe, Japan and locally in Viet Nam.

In addition to over-harvest, major threats to *Goniurosaurus* include habitat loss, tourism and exceptional weather events. In China, collection of certain species in the genus is prohibited under

national legislation, while collection of the remaining species is subject to quotas and the issuance of a permit. *Goniurosaurus* species are not currently protected in Viet Nam, but a proposal to include these species in national legislation to regulate international trade will be considered in 2019 (and will be automatic if the genus is included in Appendix II). Some of the species have part of their range within protected areas.

In terms of species identification, there are features that distinguish the six *Goniurosaurus* species from Japan from the Chinese and Vietnamese species, but this is reportedly difficult for non-experts. Similarly, the Vietnamese and Chinese species can be difficult to distinguish from each other without genetic analyses, particularly if the geographic origin is not accurately known.

**Analysis**: Thirteen species of *Goniurosaurus* lizards are native to China and/or Viet Nam. Most species in the genus show a high degree of habitat specificity and have a very limited range, and the majority have been observed in international trade. *Goniurosaurus catbaensis* meets the criteria for inclusion in Appendix II in Annex 2aA of *Res. Conf. 9.24 (Rev. CoP17)*, and may already meet the criteria for inclusion in Appendix I, given its small (or very small) populations, restricted range with fragmented and decreasing habitat. *Goniurosaurus lichtenfelderi* and *G. luii* also meet the criteria on the basis of large trade volumes, local extirpations and/or small populations.

Species of *Goniurosaurus* can be difficult to distinguish from each other without genetic analyses and therefore enforcement officers who encounter specimens of CITES-listed species are unlikely to be able to distinguish between them, therefore the populations other *Goniurosaurus* spp. of Viet Nam and China meet the criteria in Annex 2b on the basis of reported identification difficulties.

**Other Considerations***:* There may be implementation issues with the six Japanese *Goniurosaurus* species that are not included in the proposal as although there are features that distinguish them from the Chinese and Vietnamese species (the precloacal pores are absent, and claws are not sheathed by scales for the Japanese species) it is reportedly difficult for non-experts, particularly if the geographic origin is not accurately known.

Where species are subject to national protection in China, China could consider publishing a zero-export quota for wild specimens on the CITES website to reflect national legislation.

If the proposal is adopted, Japan may wish to list its six native *Goniurosaurus* species in Appendix III to monitor any potentially increased trade in this species as a result of the other species of the genus being listed.

## Inclusion of Tokay Gecko *Gekko gecko* in Appendix II

**Proponents:** European Union, India, Philippines and United States of America

**Summary**: The Tokay Gecko *Gekko gecko* is the second largest extant gecko species, with a striking bluish-grey body with red or orange spots. It has a widespread distribution throughout South-east Asia, China, Bangladesh and India. It has also been introduced to several countries including Brazil, Madagascar, the USA and areas of the West Indies. This species inhabits a broad range of habitats from forest to human-modified environments. Over a six-month breeding period Tokay Geckos produce clutches of one to two eggs laid at 30-day intervals, which are deposited in tree holes and guarded by both parents. The species has been used in Traditional Chinese Medicine for hundreds of years and is sold throughout South-east Asia in dried form or preserved in alcohol; to a lesser extent, it is also traded live for pets.

Consumption of *G. gecko* for medicinal purposes does occur domestically in South-east Asian countries, but international trade is assumed to be on a much larger scale and consumption is centred around China and Viet Nam. Thailand and Indonesia (particularly Java) are the main exporters; *G. gecko* is not protected in these countries but subject to regulation by quota/permit:

- Thailand – Exports of *G. gecko* from Thailand alone have been reported to be between two to five million geckos per year going to China, Taiwan Province of China (which reported imports of 11 million from Thailand between 2004 and 2013), Malaysia and the USA. The species is not nationally protected in Thailand, but exports and imports of the species require a permit.
- Indonesia – Three traders were estimated to be exporting 1.2 million dried *G. gecko* annually in 2006, although Indonesia has no quota for exports of dried *G. gecko* for medicinal purposes. In 2006 the quota for live animals was 50,000 individuals, of which 5,000 were intended for domestic consumption and 45,000 were intended for export.

Exports were also reported from Cambodia, Lao People's Democratic Republic (PDR), Malaysia, Myanmar and the Philippines.

A novel trend in *G. gecko* demand emerged in 2009 after consumption of its parts was promoted as a cure for HIV/AIDS. Trade reportedly increased throughout South-east Asia, but it is thought that trade peaked in 2010/2011 and has since declined after improved enforcement and a realisation that the claims were unfounded. The international pet trade in live, wild-caught *G. gecko* is thought to be diminishing (from available data) with imports of wild-caught live *G. gecko* into the USA decreasing by more than 50% from 2007–2016.

There are no empirical population estimates for *G. gecko*, and while the species is thought to be common in most of its range there is contradictory information on national declines. Populations in the main consuming countries have declined although it is not clear on what scale: in China the species was listed nationally as critically endangered (2016), although the Chinese Management Authority (MA) considered the national population to be "large and stable". In Viet Nam the MA reported localised declines due to small-scale harvesting, and the national Red Data Book (2015) estimated it was declining (by no more than 30%), but this was not based on empirical evidence.

A recent IUCN Red List assessment classifies the species as Least Concern (accepted for publication in the March 2019 Red List update). There are anecdotal reports of national population declines in Bangladesh and Thailand, but the more recent global assessment suggests that the population trend overall is unknown. In Bangladesh, a regularly cited, recent, 50% decline in *Gekko gecko* populations has been contradicted by the Red List of Bangladesh, which states that although there is tremendous poaching pressure, the species is common, and the population trend is presumed to be stable. Thailand stated that *G. gecko* was considered abundant countrywide (least concern in 2005), although declines were noted in the north-east, and poaching was causing the population to "dwindle". The Philippines reported declines. Population trends are not clear from other range States.

*Gekko gecko* has some form of legal protection in Bangladesh, Cambodia, China, India, Lao PDR, Peninsular Malaysia, the Philippines and Viet Nam; but it is not protected (outside of protected areas) in Indonesia, Myanmar or Thailand.

**Analysis:** *Gekko gecko* has an extensive range across a large part of Asia and is known to be present in a broad range of habitats including human-modified environments. Population information is scarce and although some range States have anecdotal reports of population declines, others have reported stable populations and it is considered to be common in much of its range. The latest IUCN Red List assessment to be published in 2019 categorises the species as Least Concern. While population information is contradictory, there are concerns regarding the population in the main consuming countries of China (critically endangered, 2016) and Viet Nam (near threatened, 2015, localised declines noted). There are also concerns over certain populations in the main importing areas: Thailand (least concern, 2005, with declines in the north-east which borders Viet Nam) and Java, Indonesia (anecdotally reported to be extremely difficult to find, whereas in parts of Bali and Sulawesi it is still common).

The species has been harvested for medicinal purposes for hundreds of years and there is a large body of evidence to show that the species is currently traded in the millions or tens of millions annually (most are presumed to be wild-caught), for use in traditional medicines. While *G. gecko* is still considered to be common throughout most of its range, in the main consuming countries the populations appear to be declining, as do other range States now exporting to these countries. Although there is a large degree of uncertainty regarding the impact of international trade, it may be precautionary to list the species in Appendix II in order to ensure that trade of specimens from the wild does not threaten the species.

## Inclusion of Grenadines Clawed Gecko *Gonatodes daudini* in Appendix I

**Proponent:** Saint Vincent and the Grenadines

**Summary**: The Grenadines Clawed Gecko *Gonatodes daudini* is a colourful gecko, which, when fully grown measures just 3cm. It was first discovered in 2005 and is endemic to Union Island of Saint Vincent and the Grenadines. It is only found in the mature forest on Chatham Bay, from near sea level to 300 meters above sea level. This species was classified as Critically Endangered on the IUCN Red List in 2011.

There is only one known population of *G. daudini,* currently tentatively estimated at almost 10,000 and inferred to be decreasing. A survey in 2017 found that densities have dropped by almost 80% since 2010 in some parts of the species range. It has a known extent of occurrence of 1 $km^2$ and an area of occupancy of 0.5 $km^2$.

No export permits for commercial purposes have ever been issued. Illegal trade in this species was first reported soon after the species was described in 2005 and exploitation is thought to have accelerated in recent years for the international pet trade. Collection of individuals damages the environment and exposes the remaining geckos to increased risk of predation and desiccation. Little quantitative data are available on numbers traded, but on the basis of online adverts in 2016 and 2017 that identified more than a dozen dealers operating from USA, UK, the Netherlands and Germany and significant microhabitat destruction caused by local harvesters, the proponents conclude that a significant number of geckos are being taken illegally from the wild population. Some captive-breeding appears to be taking place in non-range States.

In addition to threats from alien species and habitat destruction, a road constructed in 2005 has improved access to Chatham Bay. The proposed further development in this area would significantly impact the species' remaining habitat. The species is protected from harvest by existing legislation and is the subject of a Conservation Action Plan that seeks to protect the habitat of *G. daudini*, enhance population survival and incorporate local stakeholders.

**Analysis:** Population estimates for *Gonatodes daudini* indicate a relatively small population of just under 10,000 individuals, including both mature adults and juveniles. The density of the gecko population has fallen by nearly 80% in some parts of its limited range since 2010. The recorded extent of occupancy (1 $km^2$) and the area of occupancy (0.5 $km^2$) are very restricted, and it is only found in one location that is highly vulnerable to both intrinsic and extrinsic factors and has undergone declines. Therefore, the species meets the Appendix I biological criteria. Although the numbers in trade are unclear, illegal harvesting of specimens for international trade is impacting the microhabitat and by inference, also affecting the species. The species therefore meets the criteria for listing in Appendix I in Annex 1 of *Res. Conf 9.24 (Rev. CoP17).*

## Inclusion of Grandidier's Madagascar Ground Gecko *Paroedura androyensis* in Appendix II

**Proponents:** Madagascar and the European Union

**Summary**: Grandidier's Madagascar Ground Gecko *Paroedura androyensis* is one of 21 species of Malagasy ground geckos in the genus *Paroedura*. It is endemic to southern Madagascar and can be found at elevations of up 120 m within dry-deciduous, spiny and gallery forests, but is not found in disturbed forests.

The IUCN Red List assessment of 2011 classified *P. androyensis* as Vulnerable with a declining population, but suggested that more research on the ecology and status of the species was needed. In 2011 the extent of occurrence was ca. 18,000 $km^2$, but it was noted that there is a continuing decline in the extent and quality of its habitat. There are very little quantitative data on population size or trend, but some studies have reported the species to be rare or infrequent based on the observations of just a few individuals during transect and pit-fall trap surveys. Breeding behavior is unknown for this species, but another species within the genus (*P. picta*) has been observed to lay two eggs per clutch with short interclutch intervals.

Deforestation caused by timber extraction for charcoal production and slash and burn agriculture are occurring throughout the species' range which is increasingly fragmenting its habitat. The species is sought after in the international pet trade. Madagascar reported exports of more than 6,000 individuals between 2013 and 2017 (ca. 1,200 per year) destined for North America, Europe and Asia.

*Paroedura androyensis* is protected as a category III species under Madagascar Law 2006-400, which allows for hunting and capture with a license during the hunting season and subsequent export.

**Analysis:** *Paroedura androyensis* does not have a restricted distribution but its habitat is fragmented and decreasing due to deforestation. There is no quantitative information on population size, although it is considered to be rare and its habitat is reportedly declining. It is apparently a sought-after species in the international pet trade and more than 6,000 individuals were reported as exported from Madagascar between 2013 and 2017, all of which are assumed to be wild. With no information on population size, densities or trends for this species it is not possible to determine what impact this level of trade might be having. Overall there is insufficient information to determine with any certainty that *P. androyensis* meets the Appendix II criteria, so the Parties can only consider the pros and cons of a precautionary listing.

## Inclusion of Spiny-tailed Iguanas *Ctenosaura spp.* in Appendix II

**Proponents:** El Salvador and Mexico

**Summary**: The genus *Ctenosaura*, known as Spiny-tailed Iguanas, are medium-sized omnivorous lizards that occur in lowland dry forests of Mexico and Central America. There are currently 18 recognised species, of which 11 are endemic to Mexico. Four species (*C. bakeri, C. melanosterna, C. oedirhina* and *C. palearis*) have been included in Appendix II since 2010; one additional species (*C. quinquecarinata*) has been included in Annex D of the EU Wildlife Trade Regulations since 2010.

Of the 14 species not listed in the Appendices, one is assessed as Critically Endangered (*C. oaxacana*), two Endangered (*C. flavidorsalis* and *C. quinquecarinata*), three Vulnerable (*C. clarki, C. defensor* and *C. nolascensis*), one Near Threatened (*C. alfredschmidti*), one Least Concern (*C. similis*), one Data Deficient (*C. praeocularis*), and five have not been assessed (*C. conspicuosa, C. macrolopha, C. hemilopha, C. pectinata* and *C. acanthura*). Two species are island endemics with both islands being less than 40 km$^2$ (*C. conspicuosa* and *C. nolascensis*), two have a range of less than 500 km$^2$ (*C. alfredschmidti* and *C. oaxacana*), six have ranges less than 5,000 km$^2$ (*C. clarki, C. flavidorsalis, C. hemilopha, C. macrolopha, C. praeocularis* and *C. quinquecarinata*), and four have ranges greater than 5,000 km$^2$ (*C. acanthura, C. defensor, C. pectinata* and *C. similis*). Habitats are generally fragmented for all species and the actual area of occupancy is considerably smaller than the overall range. However, several species also occur in human-dominated landscapes, and *C. similis* and C*. pectinata* are recorded as invasive species in some areas where they have been introduced.

There is very little population information for any of the proposed species, although IUCN Red List assessments for six species estimate populations to be likely less than 2,500 individuals (*C. alfredschmidti, C. clarki, C. defensor, C. oaxacana, C. nolascensis* and *C. quinquecarinata*).

*Ctenosaura* species are in trade for the exotic pet market, with 15 species recorded in international trade. Information on the global trade for most species is limited to imports into the USA. The USA reported imports totalling 30,000 live individuals from 1999-2012, of which 95% comprised *C. quinquecarinata* (10,000) and *C. similis* (17,000) (see below). These data indicate a shift from wild to captive-bred trade. Since 2007, the USA reported the import of ca. 700 wild-caught and ca. 7,000 captive-bred individuals. Almost all the captive-bred individuals were imported from Nicaragua and El Salvador (98%), while nearly all wild-sourced individuals were imported from Honduras and Guatemala (97%). A study in Japan found seven live individuals from four different species advertised online and 60 individuals from nine different species in a physical market survey.

***Ctenosaura quinquecarinata:*** Native to Costa Rica and Nicaragua, and suggested to have an extent of occurrence of less than 5,000 km$^2$ and an area of occupancy of less than 500 km$^2$ when it was assessed as Endangered on the IUCN Red List in 2004. Its estimated population may be less than 2,500 individuals. In 2010, *C. quinquecarinata* were listed in Annex D of the EU Wildlife Trade Regulations to allow trade monitoring. According to the CITES Trade Database, 896 live *C. quinquecarinata* have been imported into the EU since 2010, with 592 exported from Nicaragua (of which 250 were captive-bred and the rest were from unspecified sources). USA import data shows imports into the USA between 1999–2012 totalling 10,000 live individuals. Of these, 7,000 were reported as captive-bred (all from Nicaragua) and just over 3,000 were reported as wild-caught (of which almost all were from Honduras, which is apparently not a range State).

***Ctenosaura similis*:** Native to Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama, this species is the most widespread in the genus. No population estimates exist, but it is said to be common, and was assessed as Least Concern on the IUCN Red List (2015). *Ctenosaura similis* was the *Ctenosaura* species imported into the USA in the highest numbers between 1999-2009; it accounted for 74% of all wild-caught *Ctenosaura* imports (12,323), and 22% of captive-bred imports (3,270). However, there have been no recorded imports of *C. similis* into the USA since 2009. The species can also be found for sale in Europe and Japan.

A number of other species were reportedly imported into the USA between 1999 and 2012 in smaller quantities, including *Ctenosaura alfredschmidti* (15), *C. clarki* (22), *C. conspicuosa* (50), *C. defensor* (49), *C. flavidorsalis* (6) and *C. pectinata* (205).

In addition to collection for international trade, *Ctenosaura* species are impacted by habitat loss, predation by domestic cats and dogs, and local consumption by people. *Ctenosaura* are protected by national legislation to varying degrees in six of their range States (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Mexico). Captive breeding is taking place in Costa Rica, El Salvador, Guatemala, Honduras, Mexico and Nicaragua, including for conservation purposes.

Differences between species in the genus were highlighted at CoP15 in relation to a proposal to list four *Ctenosaura* species, although more recent reports suggest that there are look-alike issues for all species in the genus, especially at the juvenile stage. High numbers have been exported as juveniles. An identification guide for the genus has been produced, but is intended to be a starting point rather than a conclusive document for identification.

**Analysis:** There is very little information on the wild populations of almost all *Ctenosaura* species, but some have been estimated to have small populations and/or limited ranges. Based on this, some species may already meet the biological criteria for inclusion in Appendix I (including but not limited to *C. conspicuosa* and *C. nolascensis)*, although reported international trade in wild-caught animals of these species is very limited.

The recorded international trade primarily comprises two species (*C. quinquecarinata* and *C. similis*) and trade in individuals reported as wild-caught appears to be decreasing. The only species not currently listed in Appendix II that appears to meet the criteria for inclusion under Annex 2a of *Res. Conf. 9.24 (Rev. CoP17)* is *C. quinquecarinata*. This species has a small population (2,500 mature individuals) and a relatively restricted and fragmented range. Although the majority of trade in this species appears to be in captive-bred individuals, given the possible small size of the population even low levels of trade may be of concern.

It is reportedly difficult for non-experts to distinguish between species of *Ctenosaura* and virtually impossible for juveniles, of which there are large numbers in trade. As some species in the genus are already included in the Appendices, the non-listed species therefore meet the criteria for inclusion in Annex 2b of *Res. Conf. 9.24 (Rev. CoP17)*.

## Inclusion of Spider-tailed Horned Viper *Pseudocerastes urarachnoides* in Appendix II

**Proponent:** Islamic Republic of Iran

**Summary**: The Spider-tailed Horned Viper *Pseudocerastes urarachnoides* is a recently described (2006) viper species, known only from a few locations in the Zagros Mountains of western Islamic Republic of Iran (Iran). The species may also be present in suitable habitat in adjacent areas of Iraq. Its unique tail resembles a spider and is used to lure insectivorous birds. Little information is available on its biology, but it is mainly found in hilly areas and is associated with deep cracks in limestone sediments.

There are no population size estimates and population trends are lacking, although it is considered to be rare based on field observations.

In Iran the hunting, killing or catching of all wild animals (including reptiles) is prohibited. Any export of live wild animals without a licence or approval from the Department of Environment is also prohibited. Despite this there is some evidence of international trade in *Pseudocerastes urarachnoides,* although it is limited to photographic evidence of the species in captivity on social media, a survey of German pet keepers for the German Government in 2018, and a single conversation on social media in 2017. Only described in 2006, the uniqueness of the species may create increasing demand in the future in the pet trade. Similar species do not appear to be traded in large volumes.

The species is said to be impacted by illegal collection for the pet trade, habitat destruction and future climate change. It is reported that the species is sometimes killed when encountered by local communities.

**Analysis**: *Pseudocerastes urarachnoides* has a small reported range in western Iran, based on observations of a few specimens. There are no population estimates and population trends are not available, although it is considered to be rare. Evidence of trade is limited although there are concerns that the species' uniqueness may attract demand in the future. All current trade from Iran is illegal. Given limited evidence of trade, it seems unlikely that the species meets the criteria for inclusion in Appendix II in *Res. Conf. 9.24 (Rev. CoP17)*. Iran could consider an Appendix III listing.

**Other Considerations:** If the proposal is accepted (or Iran lists the species in Appendix III), as it is nationally protected and therefore trade is illegal, Iran may wish to reflect this by putting in place a voluntary zero export quota that would be listed on the CITES website and empower re-exporting and importing countries to assist law enforcement.

## Transfer of Bourret's Box Turtle *Cuora bourreti* from Appendix II to Appendix I

**Proponent:** Viet Nam

**Summary**: Bourret's Box Turtle *Cuora bourreti* is a medium-sized terrestrial forest turtle that can reach 18 cm shell length. *Cuora bourreti* has historically been consumed for food, however in the last decade large-scale consumption has largely ceased with most animals collected now sold into the pet trade or for traditional medicine. Based on observations in captivity, the species matures at 10–15 years and lays a single clutch of one to three eggs annually.

*Cuora bourreti* has been listed in CITES Appendix II since 2000 under a genus-level listing. *Cuora bourreti* was previously considered a subspecies of *C. galbinifrons,* however it was recognised as a species in the standard nomenclature reference adopted at CoP17 in 2016. Before this split was recognised under CITES, *C. galbinifrons* was included in the Periodic Review after CoP16 and the Animals Committee recommended the transfer of *C. galbinifrons* (at that time including *C. bouretti* and *C. picturata)* to Appendix I.

*Cuora bourreti* is known from central Viet Nam and the adjoining province of Savannakhet in Lao People's Democratic Republic (PDR), although confusion with *C. galbinifrons* means its range could be smaller than currently believed. It inhabits upland, moist, closed-canopy evergreen forest, and habitat loss and degradation are considered a significant but predominantly localised threat to the species. Unsustainable collection is considered to be the main threat given that *C. bourreti* is a long-lived, late-maturing species with limited annual reproductive output and high juvenile mortality.

The species was assessed as Critically Endangered in 2015 on the basis that documented market volumes in China and Hong Kong Special Administrative Region (SAR) indicated a collapse of populations of over 90% over the past 60 years (three generations) and decline was predicted to continue for the next 20 years. This was inferred from market observations reported as predominantly *C. galbinifrons,* which at the time was also considered to include what are now accepted as *C. bourreti* and *C. picturata.* The population of *C. bourreti* is estimated to be between 10,000–20,000 individuals in the wild and the species is considered rare.

In 2013 a zero export quota for wild specimens for commercial purposes was adopted for the listing of *C. galbinifrons* (including *C. bourreti*) and there has been no legal trade in *C. bourreti* reported in the CITES Trade Database since then. Live specimens are observed for sale online, often stating that they are from captive-bred populations. However, it continues to be regarded as a difficult, sensitive species to breed successfully in captivity, reproducing slowly with small clutch sizes. Low numbers have been observed in farms in China, and juvenile animals are said to be raised in villages in range States for sale into trade, although they suffer high mortality rates.

The species is legally protected from exploitation in both range States. Illegal trade is considered to continue to the main destination markets of China and Hong Kong SAR. A small number of captive-bred specimens were observed in Hong Kong SAR markets between 2014 and 2018.

**Analysis:** No legal trade in *Cuora bourreti* has been reported since a zero export quota was put in place in 2013. Illegal trade is thought to occur, but it is not clear on what scale. The population size was estimated to be between 10,000 and 20,000 individuals, which could be considered small for a low productivity species such as this. It does not appear to have a restricted range, although issues with misidentification with *C. galbinifrons* could mean that the distribution is smaller than previously thought. The species was categorised as Critically Endangered in 2015 based on a decline of 90% in the past three generations. It would therefore appear to meet the criteria for inclusion in Appendix I.

**Other Considerations:** 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. bourreti* is already illegal. Benefits of an Appendix I listing are not likely to be realised unless enforcement efforts are increased.

## Transfer of Vietnamese Box Turtle *Cuora picturata* from Appendix II to Appendix I

**Proponent:** Viet Nam

**Summary**: The Vietnamese Box Turtle *Cuora picturata* is a medium-sized terrestrial turtle, reaching up to 19 cm carapace length. *Cuora picturata* has historically been consumed for food, however in the last decade large-scale consumption has largely ceased with most collected animals now sold into the pet trade or for traditional medicine. Based on observations in captivity, the species lays a single clutch of one to three eggs annually.

*Cuora picturata* has been listed in CITES Appendix II since 2000 under a genus level listing. *Cuora picturata* was previously considered a subspecies of *C. galbinifrons,* however *C. picturata* was recognised as a species in the standard nomenclature reference adopted at CoP17. Before this split was recognised under CITES, *C. galbinifron*s was included in the Periodic Review after CoP16 and the Animals Committee recommended the transfer of *C. galbinifrons* (at that time including *C. picturata* and *C. bourreti*) to Appendix I.

The species is endemic to Viet Nam and thought to be limited to the eastern slopes of the Langbian Plateau. Only one of the three localities where it is confirmed to occur is currently protected. Large areas of the plateau are being rapidly converted to coffee plantations and other agricultural lands and the remaining area of suitable habitat is estimated to be around 3,000 km² in extent. Unsustainable collection is considered to be the main threat given that *Cuora picturata* is a long-lived, late maturing species with limited annual reproductive output and high juvenile mortality.

The species was assessed as Critically Endangered in 2015 on the basis that documented market volumes in China and Hong Kong Special Administrative Region (SAR) indicated a collapse of populations of over 90% in the past 60 years (three generations), and that collection pressure for the last remaining individuals was likely to continue if not increase in the next 20 years. This was inferred from market observations reported as predominantly *C. galbinifrons,* which at the time was also considered to include what are now accepted as *C. picturata* and *C. bourreti.* The global wild population of *C. picturata* is estimated at below 25,000 individuals, and likely no more than 3,000–10,000. Many hunters state that while *C. bourreti* was common 7–15 years ago, it is now increasingly difficult to find.

In 2013 a zero export quota for wild specimens for commercial purposes was adopted for the listing of *C. galbinifrons* (including *C. picturata*) and there has been no legal trade in *C. picturata* reported in the CITES Trade Database since then. Live specimens are observed for sale online, often stating that they are from captive-bred populations. However, *C. picturata* continues to be regarded as a difficult, sensitive species to breed successfully in captivity, reproducing slowly with small clutch sizes. Low numbers have been observed in farms in China, and juvenile animals are said to be raised in villages in Viet Nam for sale into trade, although suffer high mortality rates.

*Cuora picturata* is protected from commercial exploitation in Viet Nam. Illegal trade is considered to continue to the main destination markets in China and Hong Kong SAR. However, no observations of the species were reported in Hong Kong SAR markets between 2014 and 2018.

**Analysis**: No legal trade has been reported since a zero export quota was put in place in 2013. Illegal international trade is thought to occur, but it is not clear on what scale. The population size is estimated at fewer than 25,000 (more likely between 3,000 and 10,000) which could be considered small for a low productivity species such as this. Due to habitat loss only a small part of its range is now believed to be suitable (3,000 $km^2$). The species was categorised as Critically Endangered in 2015 based on a decline of 90% in the past three generations, and this decline was predicted to continue. It would therefore appear to meet the criteria for inclusion in Appendix I.

**Other Considerations:** At CoP16 a zero export quota in wild specimens for commercial purposes was adopted with the listing for *Cuora galbinifrons* and therefore all trade in wild specimens of *C. picturata* is already illegal. Benefits of an Appendix I listing are unlikely to be realised unless enforcement efforts are increased.

## Transfer of Annam Leaf Turtle *Mauremys annamensis* from Appendix II to Appendix I

**Proponent:** Viet Nam

**Summary**: The Annam Leaf Turtle *Mauremys annamensis* is a medium-sized freshwater turtle. Historically *Mauremys annamensis* was consumed as food as part of a subsistence diet, however in the last decade most animals were sold into the higher value international pet and traditional medicine trade.

*Mauremys annamensis* occurs in central Viet Nam in five provinces (possibly seven) where it is found in the marshes and slow-flowing streams of the lowlands. Within this area, the species is now limited to scattered occurrence within isolated wetlands. Conversion of wetlands to agriculture, such as rice paddies and irrigation canals has led to extensive collection of a *M. annamensis* through incidental encounters.

The current or historic population size of *M. annamensis* is unknown. In the late 1930s the species was considered to be abundant, and this remained the case in the 1980s and early 1990s according to anecdotal accounts. *Mauremys annamensis* was assessed as Critically Endangered in 2000 based on a known or inferred population reduction of at least 80% over the past three generations due to actual or potential levels of trade, and a similar projected future decline over the same time period. The main threats were/are over-collection and habitat loss. In recent years, field surveys have found very small numbers of animals in the wild, despite targeted surveys, and the species is rarely observed in market surveys or seizures, indicating it is now extremely rare. Some experts consider that this species is now functionally extinct in the wild.

*Mauremys annamensis* is legally protected from exploitation in Viet Nam, although enforcement is considered to be weak. The species was included in CITES Appendix II in 2003, and since 2013 there has been a zero-export quota for wild specimens for commercial purposes. Captive breeding is known to occur in Viet Nam and non-range States (including China, the USA and Europe) and it is now thought most specimens in trade are captive-bred, although wild individuals may be being used as parental stock. Animals take about seven years to mature, and recruitment is slow.
Prior to 2013, live exports were approximately five individuals per year, whereas from 2013 this increased to ca. 300 per year totaling ca. 2,000 (predominantly reported as captive-bred/born exported from the USA for commercial purposes to Hong Kong Special Administrative Region (SAR) (1,100). Extreme price fluctuations have been observed in trade in China and Viet Nam, and the current price of around USD 30 per juvenile has been inferred to suggest that the demand for this species is decreasing or that there was now an abundance of captive-bred hatchlings available which reduced the market value.

**Analysis**: The ongoing international trade in *Mauremys annamensis* consists mainly of individuals reported as captive-bred and captive-born. Its range is limited to scattered isolated occurrences in five provinces (possibly seven) in central Viet Nam. In 2000 the species was assessed as Critically Endangered. Reports from local people and market observations indicate that the species was considerably more abundant in the 1980s and 1990s, suggesting a marked population decline. It is very rare and could be functionally extinct in the wild. All indications suggest that this species' life history traits make it intrinsically vulnerable to over-exploitation. Following a Periodic Review after CoP16 the Animals Committee recommended the inclusion of *M. annamensis* in Appendix I. It would appear *M. annamensis* meets the criteria for inclusion in Appendix I.

**Other Considerations:** At CoP16 a zero-export quota in wild-sourced specimens for commercial purposes was adopted with the listing for this species and therefore all trade in wild specimens is already illegal. Any additional benefits of an Appendix I listing are not clear.

## Transfer of Star Tortoise *Geochelone elegans* from Appendix II to Appendix I

**Proponents:** Bangladesh, India, Senegal and Sri Lanka

**Summary**: The Star Tortoise *Geochelone elegans* is very popular in the pet trade. It is found in north-western and south-eastern India, eastern Pakistan, and northern and eastern Sri Lanka. Its current area of occupancy is greater than 2,000 km$^2$ and extent of occurrence greater than 20,000 km$^2$, with both reported to be declining.

*Geochelone elegans* is found in a variety of dry vegetation types including scrubland, grassland and desert edge. It is a relatively adaptable species and tolerant of change, being found in agricultural landscapes including fields, hedgerows and plantations.

*Geochelone elegans* faces two main threats; habitat loss, primarily in the form of conversion of preferred habitat to agriculture, and illegal harvesting for the pet trade, particularly the collection of juvenile specimens. Other threats include accidental mortalities from road kills, agricultural equipment and discarded fishing nets, and deliberate killing to protect crops.

There is a lack of quantitative population data for this species. *Geochelone elegans* is categorised by IUCN as Vulnerable having been assessed in 2015; based on past and future declines, a decline of greater than 30% (over a three-generation period) was predicted to occur by 2025 (from a start point of 1995), if exploitation continued or expanded. However, as *G. elegans* was assessed as Vulnerable and not Endangered, declines of greater than 50% were not indicated. Estimated densities of 4.0–2.5 animals/ha were recorded in 1991.

*Geochelone elegans* has been listed in CITES Appendix II since 1975; and is fully protected by law from commercial exploitation, trade or possession in each of its three range States. However, it is the single most confiscated species of tortoise or freshwater turtle worldwide. Seizures of large numbers of *G. elegans* are well documented. At least 34,000 live individuals were seized between 2000 and 2015, with a further ca. 14,400 individuals seized between 2016 and 2018. Observations of 55,000 individuals being removed from the wild from one location over one year (2015), in India, suggest illegal harvest and trade levels could be considerably higher than the observed seizures.

The CITES Trade Database shows high numbers of *Geochelone elegans* in trade; almost 63,000 live specimens were reported between 2000 and 2015, over half of which were reported as captive-born or bred individuals (ca. 37,000). Over a third had no source code reported (ca. 24,000) and were exported from Jordan, a non-range State, and the largest global exporter of *G. elegans*. Jordan also reported exporting almost 31,000 captive-bred individuals, as well as re-exporting just over 1,900 wild-sourced with no origin specified. Afghanistan was also a significant exporter of wild-caught individuals (5,000). Uncertainty over the size of captive breeding populations and numbers exported from non-range States suggest a large portion of the legally permitted trade is likely to include illegally harvested and misreported wild specimens from range States. Trade from Jordan of *G. elegans* has been subject to the “Review of trade in animal specimens reported as produced in captivity”, with recommendations for Jordan including a zero-export quota.

**Analysis**: *Geochelone elegans* does not have a restricted range, nor does it appear to have a small population. The *G. elegans* population has been reported to be declining, there is strong evidence of large-scale illegal international trade, which along with other factors is believed to be driving this decline. Scant quantitative population trend data are available, but it has been estimated that if threats continue, declines of greater than 30% (but less than 50%) are likely to occur during the three generation period from 1995–2025. This is less than the guideline figure given in *Res. Conf. 9.24 (Rev. CoP17)* for a marked recent rate of decline. However, illegal trade appears to present a constant pressure on the population and given concerns raised through the “Review of trade in animal specimens reported as produced in captivity”, it may be precautionary to list the species in Appendix I. *Res. Conf. 12.10* (*Rev. CoP15*) outlines that inclusion in Appendix I would mean commercial captive breeding operations would need to meet the provisions of *Res. Conf. 10.16* (Rev.) to be registered with the CITES Secretariat, and that registered operations shall ensure an appropriate and secure marking system to identify all breeding stock and specimens in trade. This enhanced oversight could

help allay concerns over fraudulent claims of captive breeding and continued wild offtake for breeding stock.

## Transfer of Pancake Tortoise *Malacochersus tornieri* from Appendix II to Appendix I

**Proponents:** Kenya and the USA

**Summary:** The Pancake Tortoise *Malacochersus tornieri* has a unique appearance of a flat and flexible shell allowing it to wedge itself tightly into rock crevices. The species inhabits rocky outcrops in Kenya, United Republic of Tanzania (Tanzania) and northern Zambia, and due to its very specific microhabitat requirements it is discontinuously distributed across its range. While its calculated area of occupancy has been estimated at 72,000 km$^2$, due to the species' specific requirements the actual area of suitable habitat is thought to be less than 5% of this (and even less to have suitable crevices in terms of dimensions and orientation). The species has low productivity in the wild: maturing at over five years and laying one (sometimes two) eggs per year. The species is in demand for the international pet trade, the largest markets are within Asia, and the USA.

It is thought the Pancake Tortoise spends most of its time inactive in the rocky crevices which provide a thermal buffer; a behaviour which makes it difficult to survey. However, an extrapolation based on population density studies in Kenya suggests a global population of between 4,000 and 32,000 in 2001/2002. Presence in Zambia was confirmed in 2006, and based on a mark-recapture study, the Zambian population was estimated at just over 500 individuals. Opportunities for recolonization of over-exploited areas are limited due to the species' limited movement (limited home range and high site fidelity).

A recent assessment accepted for publication in the March 2019 Red List update categorises the species as Critically Endangered due to observed, estimated and projected population reductions of about 80% over three generations (45 years in total) that will be reached in the next 15 years. The population is believed to be declining: the international pet trade has been identified as the main factor but habitat degradation and loss, particularly from rock destruction and farming, are also significant threats to the species. Low population densities have been observed in otherwise seemingly suitable habitat: surveys in Kenya found the location Voo to have the highest density in 2001/2002 (9/km$^2$) but no tortoises were observed in 2014 during a repeat survey, and this was attributed to the establishment of a commercial farming operation nearby using wild specimens for breeding stock. Other areas in Kenya surveyed in 2001/2002 that had good Pancake Tortoise populations at that time were also noted to be depleted in 2014. In Tanzania, in the early 1990s the average number of tortoises encountered per hour was approximately 90% lower in areas where they have been exploited.

The Pancake Tortoise was listed in Appendix II in 1975. Kenya does not permit wild exports, and following inclusion in the Review of Significant Trade in the late 1980s, the Standing Committee recommended a trade suspension for Tanzania for wild specimens which remained in place between 1993 and 2018: this has now been lifted on the condition that Tanzania implements a zero export quota for wild specimens. It is not clear what the legal provisions there are for the species in Zambia. All three countries have licensed captive breeding facilities. Concerns have been raised about the ability of these farms to produce the fluctuating numbers reported in trade, particularly for Zambia, which started exporting captive-bred tortoises in 2006 (the year the wild population was confirmed in Zambia, although some wild/ranched specimens had been exported before that time). Fluctuations could indicate ongoing capture from the wild (within Zambia or neighbouring Tanzania) for export and/or parental stock. Zambia's exports totalled around 23,000 between 2006 and 2016. Significant exports reported as wild have taken place from non-range States, and illegal trade is highlighted as an issue.

**Analysis:** The population size in 2001/2002 was estimated at between 4,000–32,000, but on the basis of results from more recent surveys, the slow breeding potential of the species and inferred ongoing wild collection, it seems possible that the current population now meets the definition of being a small wild population that is declining. An IUCN Red List assessment due for publication in March 2019 has categorised the species as Critically Endangered as it is estimated that the population will have declined by 80% over three generations (two past, one future—through to 2033). If the rate of decline is equal across all three generations this will have meant the species has suffered a marked recent decline of over 50% in the last two generations with the decline predicted to continue. The

species is affected by trade, although most exported specimens are reported to be captive-bred, results from surveys indicate wild harvest has continued, which may be being used as parental stock in farms or being exported. Therefore, it seems that the Pancake Tortoise meets the criteria for inclusion in Appendix I.

**Other Considerations:** Wild exports are not permitted from Kenya, and Tanzania has stated that it does not intend to permit export of wild specimens. *Res. Conf. 12.10* (*Rev. CoP15*) outlines that inclusion in Appendix I would mean commercial captive breeding operations would need to meet the provisions of *Res. Conf. 10.16* (Rev.) to be registered with the CITES Secretariat, and that registered operations shall ensure an appropriate and secure marking system to identify all breeding stock and specimens in trade. This enhanced oversight could help allay concerns over fraudulent claims of captive breeding and wild offtake for breeding stock.

## Inclusion of Glass Frogs of the genera *Hyalinobatrachium, Centrolene, Cochranella* and *Sachatamia* in Appendix II

**Proponents:** Costa Rica, El Salvador and Honduras

**Summary**: Glass frogs (family Centrolenidae) are so called because of their unique transparent abdominal skin. Glass frogs are distributed throughout the Neotropics, from Mexico to Bolivia, with an isolated group of species occurring in southeastern Brazil and northeastern Argentina. After a taxonomic revision of Centrolenidae in 2009, there are currently considered to be 11 (possibly 12) genera included within the family. Only four genera are included in this proposal (*Hyalinobatrachium, Centrolene, Cochranella* and *Sachatamia*) comprising over 100 species.

Information on the population sizes and trends of many species is scarce, although 30 are considered to be declining and 17 stable. Among the 104 species listed by the proponents, four are assessed on the IUCN Red List as Critically Endangered, 11 Endangered, 13 Vulnerable, four Near Threatened, 27 Least Concern and 23 Data Deficient. The main threats appear to be habitat loss and fragmentation, along with pollution, disease and climate change. It was estimated that the habitat for only seven of the species that have been assessed was stable or undisturbed.

Global trade data are not available for any glass frog species. Based on available data on imports into the USA from 2004-2017, international trade appears to mainly be in:
- live animals for commercial purposes (1,147 (260 wild))
- bodies for scientific or educational purposes (389 (all wild))
- specimens for scientific or educational purposes (1,408 (all wild); not possible to equate to number of frogs so not detailed further).

Live glass frogs have also been observed for sale online in Europe, and some illegal trade has been reported. The following species have been identified as being traded:

- ***Hyalinobatrachium fleischmanni*** was assessed as Least Concern in 2010. The primary threats were identified as deforestation and agricultural pollution. Reported imports to the USA from 2004-2017 included 842 live (203 wild) and six bodies (all wild).

- ***Espadarana prosoblepon*** (reported as *Centrolene prosoblepon*) and ***Teratohyla spinosa*** (reported as *Cochranella spinosa*) were both reported in trade, however, following the taxonomy of Guayasamin *et al.* (2009) (reflected in the current version of the CITES Standard Reference for amphibians (Frost, 2015)), both species would fall outside the scope of this proposal. They were both assessed as Least Concern in 2008. The major threats were identified as deforestation and agricultural pollution. Small quantities of both species were reportedly imported to the USA from 2004-2017: 57 live and 304 bodies (all wild) of *E. prosoblepon*, and six live and six bodies (all wild) of *T. spinosa*.

A number of species were assessed on the IUCN Red List as Least Concern between 2008 and 2010 (the main threats identified at the time were habitat loss and degradation), and only relatively small amounts of trade in live individuals and bodies into the USA between 2004 and 2017 were reported. This includes:
- ***Cochranella granulosa*** (12 live and 11 bodies, all wild);
- ***Hyalinobatrachium valerioi*** (50 live, all captive-bred);
- ***Sachatamia ilex*** (reported as *Centrolene ilex*) (20 bodies, all wild).

No trade into the USA was reported for most other species, although for a total of 201 live individuals (198 captive-bred and 3 wild-sourced) the specific species was not reported.

In most range States, harvest of these genera from the wild is prohibited or requires a permit.

The distinction of the species within these four genera is said to be difficult for non-experts, however some identification guides have been developed in recent years. Glass frogs have conserved morphology, and preserved specimens can lose color and distinctive features which poses challenges for identification.

**Analysis:** There is little information on the historical and current size of wild populations for most species of glass frogs. Some species within these four genera appear to have limited ranges while others are considered common. The main threats have been identified to be habitat loss and fragmentation, along with pollution and disease. Some species are known to be in international trade, with demand mainly for live individuals, bodies and scientific specimens. Although few trade data are available, reported levels of international trade are relatively low and there is no evidence that trade presents a threat to any of the species concerned. Based on the information available it therefore does not appear that any species in the four genera subject to this proposal meets the criteria for inclusion in Appendix II.

**Other considerations:** Identification guides have been developed to distinguish live individuals within the family Centrolenidae, however bodies and specimens are thought to be more difficult to identify. Under the current Standard Nomenclature Reference for amphibians, a total of seven (possibly eight) other genera of glass frogs, including some species that appear in trade, are not subject to this proposal and therefore would be excluded from an Appendix II listing should this proposal be adopted. The continual taxonomic changes within the family Centrolenidae may therefore pose implementation challenges, as species may be moved between genera.

## Inclusion of Spiny Newts *Echinotriton chinhaiensis* and *Echinotriton maxiquadratus* in Appendix II

## **Proponent:** China

**Summary:** The genus *Echinotriton* contains three species of spiny newts: *E. chinhaiensis* and *E. maxiquadratus* which are endemic to China, and *E. andersoni* which is now only found in Japan and is not included in this proposal.

***Echinotriton chinhaiensis***
Adult *E. chinhaiensis* are terrestrial and inhabit forests in low hills. The adult population was estimated to be around 300 mature individuals in 2004, and one of the three known subpopulations (the type locality) may have been extirpated. The habitat of *E. chinhaiensis* was estimated to total around 50 $km^2$ in 1999 and 30 $km^2$ in 2004 and is greatly fragmented. While part of the species' range is within protected areas, some of its range is being degraded by human activities (agriculture, pollution, tourism). *Echinotriton chinhaiensis* was assessed as Critically Endangered on the IUCN Red List in 2004 due to its limited distribution, all individuals being in a single location, the low number of subpopulations, and the continuing decline in the extent and quality of habitat. The number of breeding females reduced from 107 in 1999 to 82 in 2000 and 47 in 2008. The species is vulnerable to weather events such as typhoons and floods, which have caused a decline in the population. A number of attempts at *ex-situ* conservation have been made; individuals were collected from the wild and more than 800 larvae were released in 1998. The species is protected in the wild, meaning the hunting, catching or killing, as well as the sale and purchase or utilisation of the species and their products, is strictly prohibited within China. Records of the species in trade appear to be limited to low numbers observed for sale (two in a pet store in Japan, and a trader in Hong Kong SAR posting a picture on social media of at least five) and some discussion on online forums which could indicate demand.

***Echinotriton maxiquadratus***
This species was only described in 2014 and has not yet been assessed by IUCN. Like *E. chinhaiensis*, the species is considered to have a very small wild population with a restricted distribution; one expert stated it was known from two restricted areas of approximately 10 to 20 km˚ with populations each estimated to be less than 100 - 150 individuals. It faces many of the same threats as *E. chinhaiensis*, but due to its recent discovery little is known on population trends. The species is not protected under State law, although at least part of its range is within protected areas where harvest is prohibited. Little is known about the trade of this species, but due to the species' rarity it is highly likely to be in demand. One expert is aware of several specimens apparently being kept outside of China. *Echinotrition maxiquadratus* is morphologically very similar to *E. chinhaiensis*.

**Analysis:** The endemic spiny newt *E. chinhaiensis* has a very restricted, fragmented range in China (around 30 $km^2$) and is estimated to have a very small wild population (less than 400 adults) which is decreasing. It is known to be in demand for the hobbyist trade, although the species is protected in the wild. The species may already meet the biological criteria for inclusion in Appendix I and therefore would appear likely to meet the criteria for inclusion in Appendix II under criterion 2aA of *Res. Conf. 9.24 (Rev.CoP17)*. Less is known about the recently described *E. maxiquadratus,* but it appears to face a similar challenge of a very small wild population and very restricted range and is not yet protected (though part of its range is within protected areas). The possibility of trade seems high due to its recent discovery and rarity, and therefore also meets criterion 2aA for inclusion in Appendix II.

**Other Considerations:** *Echinotriton chinhaiensis* is protected in its only range State and any trade is already illegal, so if this proposal is accepted China could publish a zero-export wild quota on the CITES website to reflect national legislation. An Appendix II listing may help close the apparent loophole of specimens being illegally exported via Hong Kong SAR where they are not protected.

Japan may wish to list the third species in the genus, *E. andersoni,* in Appendix III to monitor any potentially increased trade in this species as a result of the other two species being listed.

It is reportedly difficult to differentiate *Echinotriton* and *Tylototriton* (the latter genus is also subject to a listing proposal (Prop. 41)). If one proposal is accepted then the other could be accepted for inclusion in Appendix II under criterion 2bA for look-alike reasons.

## Inclusion of Asian Warty Newts *Paramesotriton* spp. endemic to China and Viet Nam in Appendix II

**Proponents:** China and European Union

**Summary**: This proposal is for the inclusion of all species of the genus *Paramesotriton* endemic to Viet Nam and China in Appendix II, with the exception of *P. hongkongensis,* which is already included in Appendix II. All currently described species in the genus are endemic to southern China and northern Viet Nam. In the past 15 years the number of described species in the genus has doubled and the updated version of the CITES Standard Nomenclature Reference for newts recognises 14 species.

Each species is thought to have a restricted distribution and to only occur in a few, small known populations. Sexual maturity is normally reached at between three and seven years (sometimes up to 10 years). They are found in or close to forest streams; the adults of some species can be found in water all year round while others become particularly aquatic during the breeding season.

Information on the population size and status of many of the species is lacking. Six of the 14 currently described species have been assessed on the IUCN Red List (one as Endangered, one Vulnerable, two Near Threatened and two Least Concern). Most of these assessments were conducted in 2004 and require updating. Based on China's Red Data List (2016), of the ten species that were assessed, four were endangered and three vulnerable. Wild populations are threatened by habitat loss (deforestation and infrastructure development) and some species are exploited for the Traditional Asian Medicine, food and pet trades. *Paramesotriton hongkongensis* was listed in Appendix II at CoP17, although no trade has been reported for this species in the CITES Trade Database to date. All species in the genus have been listed in Annex D of the EU Wildlife Trade Regulations since 2009.

Some of the species are protected within range States, and commercial imports of all *Paramesotriton* species into the EU and the USA (two of the major markets for the pet trade) have been prohibited since 2018 and 2016 respectively due to concerns over the spread of disease. Illegal collection and trade have been reported. Captive breeding is possible for some species, but the extent to which this is happening appears to be limited to date.

Trade is reported to be mainly in live or whole dried or preserved animals. However, available trade data is restricted predominantly to live animals exported to Europe and the USA for pets and does not capture the volume of harvest and trade for traditional medicine in Asia, or the domestic food or pet market. Imports of live *Paramesotriton* into the EU between 2009-2017 totaled over 1,600 live animals. Imports into the USA involved more than 38,000 individuals between 2000-2016 (species-specific data were only available for the period 2007-2013). The main species reported in trade (aside from *P. hongkongensis)* were:

- *Paramesotriton labiatus:* Endemic to China, this species was previously recognised as *Pachytriton labiatus* including in the latest IUCN assessment (Least Concern, 2004). In 2016 the species was nationally assessed as vulnerable. *Paramesotriton labiatus* (reported as *Pachytriton labiatus*) was the species of this genus imported into the USA in the highest number between 2007 and 2013 (8,400 live, all wild). At the time of the Red List assessment, *Pachytriton labiatus* was considered to have a wide distribution and presumed large, though declining, population. Over-exploitation for use in traditional Chinese medicine and for the international pet trade was identified a major threat, as was habitat destruction and degradation.

- *Paramesotriton chinensis:* Endemic to China, recent research has concluded this species actually encompasses a number of different lineages (e.g. *P. longliensis, P. yunwuensis, fuzhongensis, P. labiatus, P. qixilingensis*), and many *Paramesotriton* species recognised in the CITES Standard Nomenclature Reference still enter the international trade as *P. chinensis*. It was nationally assessed as near threatened in 2016. Imports of 1,100 live *P. chinensis* were reported into the EU from 2009-2017 (source unspecified), and 1,400 live

into the USA from 2007-2013 (1,100 wild). *Paramesotriton* chinensis was assessed as Least Concern in 2004 and was considered common but the population was declining. At the time of assessment, the international pet trade was not reported to be a threat. It is also kept as a pet in China.

Other more threatened species were reported in lesser quantities in trade (although they may have been reported under incorrect names either because they were mis-identified or because the species had not been described at the time):

- *Paramesotriton fuzhongensis*: Endemic to China. The species was assessed by IUCN as Vulnerable in 2004 as at the time the extent of occurrence was less than 20,000 km$^2$, with all individuals in fewer than ten locations, and there was a continuing decline in the extent and quality of habitat and in the number of mature individuals. At the time of the Red List assessment it was considered rare and the population to be declining. Habitat loss and over-harvesting for the pet trade were identified as major threats). However, the current status is unknown. Nationally it was considered vulnerable in 2016. Many specimens reported as *P. chinensis* in trade were believed to be mis-identified *P. fuzhongensis*. Although no trade data are available, the species has been observed for sale in Europe.

- *Paramesotriton guangxiensis:* Endemic to China and Viet Nam, *P. guangxiensis* was assessed in 2004 as Endangered since the area of occupancy was less than 500 km$^2$, none of which was within protected areas. The Chinese population was assessed as endangered in 2016. Wild specimens have been observed for sale in pet shops in Viet Nam (including animals originating from China). *Paramesotriton guangxiensis* was formerly treated as a synonym of the morphologically similar *P. deloustali.*

- *Paramesotriton zhijinensis:* Endemic to China, *P. zhijinensis* is considered to have a restricted range. While it has not yet been assessed by IUCN (it was described in 2008), it was nationally assessed as endangered in 2016. No information on trade could be found, although the species resembles *P. chinensis* so may be traded under that name.

Species identification is difficult - especially if animals are traded in a dried state for traditional medicine. Imports into the EU and USA are reported to be frequently labelled incorrectly (as *P. hongkongensis* or *P. chinensis*). Whilst it does appear possible to distinguish *P. hongkongensis* from other similar species based on morphological characteristics, identification by non-experts may be difficult. The genus is relatively understudied and future taxonomic work is likely to lead to more species being described. Species of the genus *Pachytriton* (not currently listed in the Appendices) are also reportedly difficult for non-experts to distinguish from *Paramesotriton.*

**Analysis**: There is little information available on the wild populations of most *Paramesotriton* species, although many are believed to have small ranges and probably low population sizes. Habitat loss and degradation is a significant threat. Species are used for traditional medicine in Asia, for some species it is thought this could be in significant volumes, although no quantitative information is available. Some species are also traded domestically and internationally as pets. The only data available on legal international trade relate to imports reported by the EU and USA, which have both recently prohibited commercial imports due to concerns over disease. Trade has also been reported between China and Viet Nam.

For most species there is not enough information to determine whether current levels of international trade are having an impact on wild populations, particularly with restrictions on trade to EU and USA markets. A number of species are globally Endangered (*P. guangxiensis)* and/or nationally endangered (e.g. *P. guangxiensis, P. longliensis P. yunwuensis, P. zhijinensi*), and it seems possible that certain species meet the Appendix I biological criteria (e.g. *P. maolanensis* which is known only from one 60 m$^2$ pool, although no information was found on international trade).

Morphological identification of species in this genus is considered to be difficult or even impossible by a non-specialist. Although it is probably possible to differentiate some species when traded live, this is likely much more difficult for dried specimens. It is reported to be difficult for non-experts to identify some *Paramesotriton* species from *P. hongkongensis,* which in already listed in Appendix II, so these species may meet the look-alike criteria in 2bA.

The proponents state that they wish to include all species in the genus that are endemic to China and Viet Nam. However, based on past convention it would seem more logical to list *Paramesotriton* spp. (populations of China and Viet Nam), which would not be expanding the scope of the proposal and would mean that if a species' range was found to extend outside of China/Viet Nam, the national populations in China/Viet Nam would still be covered.

**Other Considerations:** As some species are nationally protected and thus trade is illegal, the range State concerned could put in place a voluntary zero quota listed on the CITES website for those species and empower re-exporting and importing Parties to assist with enforcing the law.
Due to the evolving taxonomy of *Paramesotriton*, there is potential for the current CITES Standard Nomenclature Reference to become out of date. The CITES Standard Nomenclature Reference used for the newt species currently listed in CITES is Frost (2015). CoP18 Doc. 99 recommends a change to a 2017 version of Frost which recognises all 14 species of *Paramesotriton* currently described.

## Inclusion of Crocodile Newts *Tylototriton* spp. in Appendix II

**Proponents:** China and European Union

**Summary:** The species in the genus *Tylototriton*, known as Crocodile Newts, are distributed within montane forests from the eastern Himalaya, through Indochina, to southern and central China. Their taxonomy is rapidly evolving, and the number of described species has increased threefold to 24 since 2010. Twenty species are thought to be endemic to one country and are mainly considered to be of restricted range and consist of few, small known populations, although it is likely that due to their cryptic nature the range of certain species is larger than currently known. Several currently recognised species are considered morphological complexes that may contain multiple species with smaller ranges.

Sexual maturation is reached at between three and five years, and clutches usually consist of less than 100 eggs. Seasonally they accumulate in breeding pools which leaves them susceptible to capture for the domestic and international pet and traditional medicine trades. Outside of the breeding season, adults and juveniles are mostly terrestrial and fossorial.

Thirteen of the species have been assessed on the IUCN Red List (two as Endangered, five as Vulnerable, three as Near Threatened). Of the 14 species assessed on China's Red List (2016), six are threatened and seven near threatened. There is little population information for many species, although most are considered to be declining as a result of habitat loss and degradation (especially around breeding sites), unsustainable harvest and other factors.

It appears that at least some of the species are being impacted by international trade. The genus has been listed in Annex D of the EU Wildlife Trade Regulations since 2009. Available international trade data are restricted predominantly to live animals exported to Europe and the USA for pets, and do not capture the volume of harvest and trade for traditional medicine in Asia, or the domestic food or pet market, which appears to be significant for some species. Some of the species are protected within range States, and commercial imports into the EU and the USA (two of the major markets for the pet trade) have been prohibited since 2018 and 2016 respectively due to concerns over the spread of disease. Illegal harvest and trade have been reported. Captive breeding is possible for some species, but the extent to which this is happening appears to be limited to date.

Key species reported in trade (mainly as live) to the major markets of Europe and the USA include *T. kweichowensis* and *T. verrucosus* (considered a morphological complex), which are discussed below:

- *Tylototriton kweichowensis* is endemic to China and was assessed as Vulnerable in 2004 due to a restricted area of occupancy (<2,000 km$^2$) which was fragmented and declining. The number of mature individuals was also said to be declining. *T. kweichowensis* were imported in large numbers into Europe in the 1990s, and although captive breeding has occurred it is not clear on what scale. *T. kweichowensis* was the species of this genus reportedly imported into the EU in the greatest quantity (850 individuals) since the genus was listed in the EU Wildlife Trade Regulations in 2009. A further 1,130 wild and 350 captive-bred *T. kweichowensis* were imported into the USA between 2007 and 2013. Habitat destruction and degradation are major threats to this species, and it is also collected for use in traditional Chinese medicine.

- *Tylototriton verrucosus* was previously considered to be widely distributed but is now believed to comprise other related species with significantly smaller ranges and fewer populations. *T. verrucosus* was assessed as Least Concern in 2004, but this could change if future taxonomic revisions split the species. It was assessed as near threatened in China (2016). *T. verrucosus* was the species of this genus reportedly imported into the USA in the highest numbers (5,031 wild and 40 captive-bred live individuals between 2007 and 2013), is commonly advertised for sale (in China, Europe and the USA), and was imported into Europe in the 1960s in large quantities for medical research (although these imports likely comprised

other species not yet described). Some populations are highly threatened by habitat loss and degradation.

A number of other (often newly described) species with limited ranges and/or smaller populations have also been observed in trade. While there is little or no data on imports of these species into the EU or USA (suggesting the scale is less than *T. kweichowensis* and *T. verrucosus,* trade but potentially could have a greater impact if they are range-restricted/smaller populations) some specimens may have been traded under incorrect names. Examples of these include:

- *Tylototriton lizhenchangi* is an endemic with a restricted distribution described in 2012, and although not yet assessed on the IUCN Red List, it was nationally assessed as vulnerable (2016). One expert stated that intensive collection following its formal description had reduced the wild populations close to extinction (large adult individuals were already difficult to find in 2014 and 2015). No legal imports were reported into the EU (although it was offered for sale in Germany) or the USA (although it may have been imported under "*Tylototriton* spp.").

- *Tylototriton vietnamensis*, assessed as Endangered in 2016, has an estimated extent of occurrence of 1,345 km$^2$ and appears to be an uncommon species with small and fragmented populations. Tay Yen Tu Nature Reserve and Yen Tu Landscape Protection Area were reported to harbour the largest population of this species, and a survey of all known breeding sites in the Reserve in 2010 found 216 individuals. Unsustainable harvest is reported to be a threat to this species, in addition to intensive deforestation, climate change, and erratic rainfall. Local people are reported to collect newts for private medicinal use, or to sell to local tourists or at Chinese markets for the international pet trade. Limited legal imports into the EU and USA are reported but given historic confusion with *T. asperrimus* and others in the genus it is likely that some specimens have been traded under incorrect names.

- *Tylototriton wenxianensis,* endemic to China, was assessed as Vulnerable in 2004 due to its limited area of occupancy (<2,000 km$^2$) that was declining in extent and quality, as well as limited localities. It was nationally assessed as vulnerable in 2016. The global population was estimated at 30,000 in 2008 but was reported to have more than halved by 2015; threats included habitat loss and degradation. There are reportedly undescribed taxa within *T. wenxianensis,* meaning the population may be smaller should the species be split. No legal imports were reported into the EU (although it was offered for sale in Portugal and Spain) or the USA (although it may have been imported under "*Tylototriton* spp.").

- *Tylototriton yangi* is endemic to China and reported to be highly threatened by overharvest for the terrarium trade; a year after its discovery in 2012, specimens were reported to be exported to Europe and the USA in significant numbers, which was greatly reducing wild populations. One expert has observed considerable population declines since 2014, and thousands are reported to be exported illegally. The species has not yet been assessed by IUCN, but is nationally assessed as near threatened (2016).

Many *Tylototriton* species are considered morphological complexes (e.g. *T. verrucosus*, *T. shanjing* and *T. asperrimus*) and morphological identification is considered difficult or even impossible by a non-specialist. In addition, there is great morphological variation between individuals of the same species. Species are frequently traded using an incorrect name, either erroneously or deliberately. It is also said to be difficult for non-specialists to differentiate between *Tylototriton* and *Echinotriton* (two species in the latter genus are also proposed for inclusion in Appendix II; see CoP18 Prop. 39). The genus is relatively understudied and future taxonomic work is likely to lead to more species being described.

**Analysis:** There is little information available on the wild populations of many species of *Tylototriton*, although they are generally believed to have small and probably declining ranges, and small population sizes. Habitat loss and degradation is a significant threat. Species are used for traditional

medicine in Asia, for some species it is thought this could be in significant volumes, although no quantitative information is available. Regarding the pet trade, it was thought that the USA and European markets were the largest, although this may no longer be the case as imports into both are now restricted due to concerns over disease.

Some species have shown declines likely caused by overharvest (including but not limited to *T. lizhenchangi, T. vietnamensis* and *T. yangi*), and although it is not known what proportion were used domestically for traditional medicine (or pets) versus the international pet trade, significant numbers have been recorded in the latter. There appears to be a pattern of new species being described and then impacted by international trade, although some have likely been in trade previously but under a different name. Certain species already appear to meet the biological criteria for Appendix I (including but not limited to *T. lizhenchangi, T. vietnamensis, T. wenxianensis and T. yangi)* based on apparent marked declines, restricted ranges and/or small wild populations that are declining, and therefore meet the Appendix II 2a criterion.

For other species, there is insufficient information to determine whether the criteria are met. However, since morphological identification in this group is considered to be difficult or even impossible by a non-specialist, and the taxonomy is evolving, for ease of implementation a genus listing seems appropriate.

**Other Considerations:** As some species are nationally protected and thus trade is illegal, the range States concerned could put in place a voluntary zero-export quota for wild specimens which would be listed on the CITES website and empower re-exporting and importing Parties to assist with enforcing the law.

Due to the evolving taxonomy of *Tylototriton*, there is potential for the current CITES Standard Nomenclature Reference to become out of date. The CITES Standard Nomenclature Reference used for the newt species currently listed in CITES is Frost (2015). CoP18 Doc. 99 recommends a change to a 2017 version of Frost, but this will already be out of date (*T. ngarsuensis* was described in 2018). There is some debate regarding whether *Tylototriton* should be split into multiple genera (*Tylototriton, Liangshantriton* and *Yaotriton*), so further taxonomic revisions are potentially significant.

It is said to be difficult to differentiate *Tylototriton* and *Echinotriton.* Two species in the latter genus are also subject to a listing proposal (Prop. 39). If one proposal is accepted, then it seems appropriate for the other to also be accepted on the basis of 2bA (look-alike).

## Inclusion of Mako Sharks *Isurus oxyrinchus* and *Isurus paucus* in Appendix II

**Proponents:** Bangladesh, Benin, Bhutan, Brazil, Burkina Faso, Cabo Verde, Chad, Côte d'Ivoire, Dominican Republic, Egypt, European Union, Gabon, Gambia, Jordan, Lebanon, Liberia, Maldives, Mali, Mexico, Nepal, Niger, Nigeria, Palau, Samoa, Senegal, Sri Lanka, Sudan and Togo

**Summary**: Shortfin Mako Shark *Isurus oxyrinchus* is a fast, large (4 m), widely distributed, migratory shark with low biological productivity. It can be found in all temperate and tropical ocean waters from 50°N (60°N in the North Atlantic) to 50°S. It is distributed across the following oceans: North Atlantic (14.5% of distribution), South Atlantic (12%), North Pacific (32.5%), South Pacific (22%), Indian Ocean (17.9%) and Mediterranean (1.1%).

Longfin Mako Shark *I. paucus* appears in similar waters, although its complete distribution remains unclear. Very little is known about its biology.

The primary threats to *Isurus oxyrinchus* and presumably *I. paucus* are directed and incidental catch in multi-specific fisheries found throughout its range. *Isurus oxyrinchus* is generally retained for its high-valued meat for both national and international markets, whilst its fins are mostly destined for the international market. Its meat is consumed all over the world and is considered a premium product. Fins from *I. oxyrinchus* have been observed in markets in Hong Kong SAR's main commercial centre, where this was reported as the fourth and fifth most abundant species in 1999-2000 and 2014-2015 respectively. *Isurus paucus* fins have also been observed in this market. Other products from this trade include liver oil, skin and teeth. The form in which species are traded (primarily meat) makes it hard to differentiate between species. Although it is possible to visually differentiate the fins of the two species using macro-morphology based on differences in the dermal denticles, it is reported that *I. paucus* fins are often combined in *I. oxyrinchus* and thresher (*Alopias* spp.*)* fin categories, due to a similarity in appearance and market value.

*Isurus oxyrinchus* is also the target of sport fishing and at risk of being caught in shark protection nets. Climate change may also be a threat to *I. oxyrinchus;* warming ocean waters may affect its spatial and temporal distribution.

Both species are considered to have low productivity. Global population sizes are unknown but may number in the millions. Various studies and sources have used a range of indicators to examine the trends in each of the ocean areas including spawning stock fecundity, spawning abundance, biomass and mortality. However, due to different datasets and methods used for analysis, these studies are often not directly comparable and therefore a percentage decline is not always possible to calculate. Available information has been examined for evidence of historical and recent declines in relation to the quantitative guidelines contained in the footnote to Annex 5 of *Res. Conf. 9.24 (Rev CoP17)* for commercially exploited aquatic species. We take these guidelines to refer to the criterion 2aA. Information has also been examined for evidence of decreasing populations considered in relation to criterion 2aB.

The FAO Expert Advisory Panel examined available datasets for robust information on the extent of marked declines for *I. oxyrinchus* (for which more data are available) to determine if there have been historical and recent declines near to the guideline figures in the footnote to Annex 5 of *Res. Conf. 9.24 (Rev.CoP17)*. The Panel concluded that in none of the species' areas of distribution were there historical declines near to the guideline figures, however they did note that there was reliable evidence of historical population decreases in the North Atlantic, Mediterranean and North Pacific (combined distribution of 48.1%). They considered there was not enough reliable evidence for the South Atlantic and Indian Ocean to calculate the extent of decline. The Panel considered that the population of the South Pacific has historically been stable and possibly increasing in recent years.

The Panel determined that recent decreases in the North Atlantic were of between 23-32%. Although they acknowledged decreases in the Mediterranean, they found that the extent of decline was not well determined. They found data to determine recent declines for the South Atlantic and Indian Ocean

were not robust enough to calculate the extent of decline, but noted there were marginal increases (by 0.16% per year) in the North Pacific.

While there appear to be no historic or recent marked declines near to the guideline figures in the footnote to Annex 5, taking into consideration available datasets there is evidence that populations of *I. oxyrinchus* in the North Atlantic, South Atlantic, Mediterranean, Indian Ocean and North Pacific (making up 78% of the distribution) have all undergone historical decreases in population. In recent years the North Atlantic, Mediterranean and Indian Ocean (33.5% of distribution) populations have been decreasing. In the South Pacific there is general agreement that the population is likely increasing marginally, however in the North Pacific there is a lack of consensus over the trend, with some considering a possible continuing decline whereas others consider there to have been a marginal increase. There is a lack of data for the South Atlantic, but in the most recent IUCN Red List assessment it is accepted that the situation in the North Atlantic (decreasing population) is representative of the South Atlantic.

Less information is known on the population size of *Isurus paucus,* although it is considered the rarer of the two species; expert judgement suggests global declines would be similar to *I. oxyrinchus* as it is caught as target and incidental catch alongside *I. oxyrinchus* in offshore and high seas waters.

Recent global IUCN Red List assessments due to be published in March 2019 have categorised both species as Endangered.

Some range States have adopted a variety of legislative measures including quotas, finning bans, fishing gear restrictions, and area and season bans. Within the distribution of *I. oxyrinchus*, at least some areas are known to have stricter legislation in place, often in the form of recommendations or resolutions established by Regional Fisheries Management Organisations (RFMOs), including the banning of shark finning or the requirement for live *I. oxyrinchus* to be released.

**Analysis:** *Isurus oxyrinchus* and *I. paucus* are both widely distributed, occurring in temperate and tropical ocean waters. *Isurus oxyrinchus* meat is utilized both locally and internationally and considered to be high value. Its fins have been observed in some of the largest fin markets. The species' low productivity place them at risk of overexploitation if stocks are overfished and unable to recover. There is no robust evidence of historic or recent marked declines for *I. oxyrinchus* that would meet the guidelines for listing under Annex 2aA. However, historical population decreases have been reported for *I. oxyrinchus* across large parts of its range (78%). Recent data suggest populations are continuing to decrease in 33.5% of its distribution (North Atlantic, Indian Ocean and Mediterranean), and if the condition of the North Atlantic is representative of the South Atlantic, this would add a further 12% of the species' distribution. The populations in the South Pacific appear to be stable or marginally increasing and there are differing opinions on the trend in the North Pacific. When considering the historic and recent trends in populations in conjunction with one another, overall it would appear that regulation of trade in *I. oxyrinchus* 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. Therefore, *I. oxyrinchus* meets the criteria in Annex 2aB of *Res. Conf. 9.24 (Rev. CoP17)*.

Population trend data for *I. paucus* are limited but it is likely to be undergoing similar decreases to *I. oxyrinchus*, thus potentially also meeting the criteria in Annex 2aB of *Res. Conf. 9.24 (Rev. CoP17)*.

Some legislation and regulations are in place in some of the regions where population declines are occurring. The extent to which these are being implemented is unclear. Any CITES listing would reinforce the implementation of any existing legislation and management measures.

Fins of both species are sometimes mixed in the same market category and although it is possible to differentiate the fins due to differences in dermal denticles, *I. paucus* is commonly misidentified as *I. oxyrinchus*. Meat would be less readily identifiable to the species level and therefore enforcement officers who encounter specimens of CITES-listed species are unlikely to be able to distinguish between species. Thus, if either species is considered to meet the criteria in Annex 2a, then the other species should be included in the Appendices in line with Annex 2bA.

## Inclusion of Guitarfish *Glaucostegus* spp. in Appendix II

**Proponents:** Bangladesh, Benin, Bhutan, Brazil, Burkina Faso, Cabo Verde, Chad, Côte d'Ivoire, Egypt, European Union, Gabon, Gambia, Maldives, Mali, Mauritania, Monaco, Nepal, Niger, Nigeria, Palau, Senegal, Sierra Leone, Sri Lanka, Syrian Arab Republic, Togo and Ukraine

**Summary**: Giant Guitarfish species in the family Glaucostegidae are shark-like batoid species occurring in the coastal waters of the Mediterranean and Black Sea, Atlantic, Pacific and Indian Oceans. There are six species in the family, all in the genus *Glaucostegus*. The majority of the species are strongly associated with soft bottom habitats in shallow (<50 m) warm-temperate to tropical coastal waters. Species in the Glaucostegidae family grow slowly, mature late, have a generation length of 10–15 years, and exhibit low to medium productivity with many growing larger than 2 m in total length.

The global population sizes are unknown for all of the species of Glaucostegidae. There are no known stock assessments for any of the species and all information on population trends is based upon fisheries landings and inferred from fishing effort. All six species in the family have recently been assessed by IUCN as Critically Endangered with estimated declines of greater than 80% over the last three generations having occurred (accepted for publication in the July 2019 Red List update). These estimates have been based on new datasets documenting global population reductions.

The primary threats to Glaucostegidae are considered to be unmanaged and unregulated fisheries. Some of the catch is targeted and incidental catch is often retained. Fishing techniques used in these coastal regions mean that species of Glaucostegidae are exposed to intensive fishing. Coastal development is also a threat to these species with human populations increasing, leading to increased fishing pressure, but also habitat degradation, threatening key habitats in the species' life cycle.

Scant species-specific catch or trade data are available; information is often reported using generic terms such as "guitarfish", "giant guitarfish" or "rhinobatid", which likely also include species from other families. Glaucostegids are also known to be caught and reported alongside Rhinidae (wedgefish) species using terms such as "guitarfish etc, nei". Localised landing declines have been reported, for example, in India, an 86% decline in landings reported as guitarfish and wedgefish has been observed from one landing site over a five-year period (2002–2006). In Iran, 66% declines in "giant guitarfish" landings occurred over 20 years (1997–2016), while in Pakistan landings data for "rhinobatids" at two sites showed landings decline by 72% between 1999 to 2011, and 81% between 1994 and 2011. While most of the declines have been reported for species in the Indo-West Pacific, it is highly likely that similar declines are occurring in other regions where fishing pressure is likely to be similar.

Detailed information is given below for two species known to be affected by trade:

- *Glaucostegus granulatus:* A recent IUCN Red List assessment categorised this species as Critically Endangered due to declines of >80% over the last three generations. In India, *G. granulatus* landings declined by 94% over five years from 2002.

- *Glaucostegus cemiculus:* A recent IUCN Red List assessment also categorised this species as Critically Endangered due to declines of >80% over the last three generations. There is evidence that 95% of *G. cemiculus* caught are below their size at maturity. The species' status in the Mediterranean is unclear; while local extirpation is reported in the northern Mediterranean it is still present in the south, but it is expected that there will be declines. The species is reported to be taken in Gambia, Guinea, Guinea-Bissau, Mauritania and Sierra Leone.

*Glaucostegus granulatus* and *G. cemiculus* occur in are some of the most heavily fished coastal regions in the world.

While it appears the meat from glaucostegid species is primarily used locally, the fins of these

species are reported to be exported. Fins from *Glaucostegus cemiculus* have been identified in shops in Hong Kong Special Administrative Region (SAR), included in the highest valued categories of fins, “Qun chi”. They have been observed for auction/sale in Bangladesh, Oman and United Arab Emirates. The form that species are traded in (fins, meat) makes it hard to differentiate between species within the Glaucostegidae family, often requiring genetic analyses. There is conflicting information on whether Glaucostegidae fins are morphologically similar to those from the family Rhinidae (subject to a separate listing proposal, Prop. 44) and Pristidae (listed in Appendix I in 2007except *Pristis microdon* which was transferred from Appendix II to I in 2013), once removed from the whole animals, particularly in the processed form.

Legislation and regulation for Glaucostegidae vary by location and country; where they exist, they primarily cover a range of measures involving either the banning of commercial fishing of sharks in certain zones, size limits or banning the practice of finning. Fishing restrictions in Mauritania have apparently resulted in increases in relative abundance of *Glaucostegus cemiculus*.

**Analysis:** Species of Glaucostegidae are found in coastal waters in the Mediterranean and Black Sea, Atlantic, Pacific and Indian Oceans. While their meat appears to be utilised locally, fins from these species have been observed in international trade, which is presumed to drive the retention of the species as incidental catch.

In the most recent IUCN Red List assessments (to be published July 2019), all six of the species were said to have undergone declines of greater than 80% over the past three generations and therefore already meet the biological criteria for inclusion in Appendix I owing to a marked recent rate of decline. Over-harvest is identified as the main factor driving these declines. Therefore, it is likely that for all of the species in this family, regulation of trade is required to ensure that harvest from the wild is not reducing populations to levels where survival might be threatened by continued harvest or other influences. Management measures have shown to be successful in restoring populations where they are implemented.

Due to the difficulties in differentiating the species in the form that they are traded in, if any of the species are considered to meet the criteria then all should be listed.

**Other Considerations:** Species of Rhinidae (subject to a separate listing proposal, Prop, 44) and Glaucostegidae are often landed and traded together. Therefore, if one of the proposals is accepted then the species in the other family should be included in Appendix II to ease implementation.

## Inclusion of all species of Wedgefish in the family Rhinidae in Appendix II

**Proponents:** Bangladesh, Benin, Bhutan, Brazil, Burkina Faso, Cabo Verde, Chad, Côte d'Ivoire, Egypt, Ethiopia, European Union, Fiji, Gabon, Gambia, India, Jordan, Kenya, Lebanon, Maldives, Mali, Mexico, Monaco, Nepal, Niger, Nigeria, Palau, Philippines, Saudi Arabia, Senegal, Seychelles, Sri Lanka, Sudan, Syrian Arab Republic, Togo and Ukraine

**Summary**: Rhinidae (known as Wedgefish) are shark-like batoid species comprising up to ten species, in three genera (*Rhynchobatus*, *Rhynchorhina* and *Rhina)*. They inhabit shallow, inshore continental waters of the east Atlantic, Indian and western Pacific Oceans, often occurring in muddy enclosed bays, in estuaries and on coral reefs. They are not known to penetrate fresh water. Little is known about their biology, but some species are known to grow to 3 m in total length, and they are considered low productivity species with a generation length of 10–15 years.

Whilst the global population sizes are unknown for all Rhinidae species, populations are reportedly declining based on inferences from fisheries landings, fishing effort, or declines of similar species. Eight species of Rhinidae have recently been assessed by IUCN as Critically Endangered (declines of greater than 80% over the last three generations), with one additional species assessed as Critically Endangered (Possibly Extinct) and one as Near Threatened (with declines of 20–30% over the last three generations).

The primary threats to these species are considered to be unsustainable and unregulated fishing throughout their range. Their retention in catches appears to be driven by the value of their fins on the international market, with fishing pressure being intense across much of their range. Their dependence on inshore habitats makes them susceptible to habitat damage and loss due to anthropogenic impacts. Where shark protective nets occur near beaches, some species get tangled. In South Africa species are sought by sports anglers because of their fighting ability, although they appear to be released live afterwards.

Very little species-specific catch or trade data are available. Information is often reported using generic terms such as "wedgefish" or "rhinobatids". Rhinidae are also known to be caught and reported alongside Glaucostegidae (Guitarfish) species using terms such as "guitarfish etc, nei". Localised landing declines have been reported, for example in India (87% for *Rhynchobatus djiddensis* and 86% for *Rhina ancylostoma* over a five-year period), Pakistan for "rhinobatids" and Indonesia for Wedgefish.

Detailed information is given below for two species known to be affected by trade:

- *Rhynchobatus australiae:* a recent IUCN Red List assessment categorised this species as Critically Endangered due to declines of >80% over the last three generations. Declines in this species have been inferred from landing data in Indonesia, India and Pakistan. The species' distribution may not be fully defined due to confusion with other members of the *Rhynchobatus djiddensis* species-complex.
- *Rhynchobatus djiddensis:* a recent IUCN Red List assessment also categorised this species as Critically Endangered due to declines of >80% over the last three generations. Declines in this species have been inferred from landing data in the Islamic Republic of Iran, Oman and United Arab Emirates, and fishing pressure is thought to be particularly high in east Africa where it is targeted alongside hammerhead sharks. As with *Rhynchobatus australiae*, the species' distribution may not be fully defined.

While it appears the meat from these species is primarily used domestically, the fins of these species are reported to be exported, and the factor driving the retention of these species when caught. Fins from species in the Rhinidae family have been identified in the "Qun chi" category of fins in Hong Kong Special Administrative Region (SAR) as having the highest value, and have also been observed in markets in Singapore. Whole *Rhynchobatus* specimens were reported to be sold for USD 680 in the United Arab Emirates and Oman between 2010 and 2012.

The forms in which species are traded (fins, meat, skins) make it hard to differentiate between species without genetic analysis. There is conflicting information on whether Rhinidae fins are morphologically similar to those from the family Glaucostegidae (subject to a separate listing proposal, Prop. 43) and Pristidae (listed in Appendix I in 2007), once removed from the whole animals, particularly in the processed form.

Legislation and management for the Rhinidae is limited and varies by location and country. Where excluder devices have been used, *Rhynchobatus australiae* have been caught in lower numbers.

**Analysis:** Species of Rhinidae are found in coastal waters in the east Atlantic, Indian and western Pacific Oceans. The species are susceptible to many fishing gear types, and intensively utilized in their distributions. While meat appears to be utilized locally, fins from these species have been observed in international trade, in the highest value fin categories, which is presumed to drive the retention of the species as incidental catch. Localised declines have been reported across much of their ranges from landings data or catch rates, or inferred based on similar species and fishing pressure, in various locations.

In the most recent IUCN Red List assessments (to be published July 2019), eight of the species were said to have undergone declines of greater than 80% over the past three generations, and one species is considered possibly extinct (all nine are Critically Endangered), and therefore these species already meet the biological criteria for inclusion in Appendix I of a marked recent rate of decline. The final species (*Rhynchobatus palpebratus)* has undergone declines of 20–30% (Near Threatened) in the same time period. Over-harvest is identified as the main factor driving these declines. Therefore, it is likely that for all of the species in this family regulation of trade is required to ensure that harvest from the wild is not reducing populations to levels where survival might be threatened by continued harvest or other influences.

Due to the difficulties in differentiating the species in the form that they are traded in, particularly with the taxonomic confusion there is within this family, if any of the species are considered to meet the criteria then all other species in this family should be listed under look-alikes.

**Other Considerations:** Species of Rhinidae and Glaucostegidae (subject to a separate listing proposal, Prop. 43) are often landed and traded together. Therefore, if one of the proposals is accepted then the other family would meet the criteria in Annex 2bA of *Res. Conf. 9.24 (Rev CoP17)*.

It is unclear for species in the Rhinidae family what proportion of animals survive if released after capture. It appears from limited information that initial survival after capture is high. In some instances, incidental catch levels are as high as target catches and therefore survival after potential release could be crucial in determining whether regulation is likely to have conservation benefits. In northern Australia, catches of large elasmobranchs have been reduced after the introduction of turtle exclusion devises (TEDs); *Rhynchobatus australiae* were caught in significantly lower numbers in nets with TEDs. The species in the family Rhinidae are subject to little or no management across their range; an Appendix-II listing could help support the improved management of these species in their range States.

## Inclusion of the following three species belonging to the subgenus *Holothuria (Microthele)*: *Holothuria (Microthele) fuscogilva*, *Holothuria (Microthele) nobilis* and *Holothuria (Microthele) whitmaei* in Appendix II

**Proponents:** European Union, Kenya, Senegal, Seychelles and United States of America

**Summary**: The Class Holothuroidea, commonly referred to as sea cucumbers or beche-de-mer in its dried, traded form (a delicacy prepared from the dried body wall thought to have medicinal properties), contains 1,743 species. The genus *Holothuria* contains more than 20 subgenera, of which the subgenus *Holothuria (Microthele)* contains four species. Three species within the subgenus are commonly referred to as teatfish due to their lateral protrusions, whilst the fourth species *Holothuria fuscopunctata* is known as a trunkfish and lacks teats. The presence of teats (in the three species which display them) differentiate this group from other sea cucumbers, even in dried form, and it is only these three species subject to this listing proposal:

*Holothuria fuscogilva:* Varies in colour from a dark colour with light spots to a light colour with dark spots, with large lateral protrusions (teats) along its flanks. Length and weight vary from 28–57 cm and 2.4–3 kg based on location. This species can be found on reef slopes, sandy areas and seagrass beds between 0–50 m in depth. This species occurs throughout the Indian and Pacific Oceans.

*Holothuria nobilis:* Black in colour with white blotches on the sides of the animal and 6–10 large lateral protrusions (teats) along its flanks. Length varies from 14–60 cm and weight from 0.23–3 kg based on location. This species can be found on shallow coral reef habitats, seagrass beds and sandy substrates between 0–40 m in depth. This species only occurs in the African and Indian Ocean region. *Holothuria nobilis* also includes a yet undescribed species which is likely to be separated from *H. nobilis* named *Holothuria (Microthele) sp. "pentard"*. This yet undescribed species has an average length of 30 cm and weight of 1.7 kg and has been found to prefer sandy substrates at a depth between 10–50 m.

*Holothuria whitmaei:* Uniformly black ventrally and grey ventrally with 5–10 large lateral protrusions (teats) along its flanks. Length of live specimens varies from 23–54 cm and weight is an average of 1.8 kg. This species inhabits shallow waters between 0–20 m and is found in coral reef flats and slopes and sandy seagrass beds. This species is only found in the Pacific Ocean.

Very little is known about generation length and recruitment in Holothurians, but the IUCN Red List assessments suggest that species within this subgenus could live from up to 12 years to several decades.

Trends in populations are derived from density estimates, but due to the large ranges of the three species proposed, very little evidence of overall population trends exists. The FAO Expert Advisory Panel noted that there is a general negative trend in populations in all three species throughout their ranges and that many populations have lower densities than the recommended threshold density (10 per ha) for healthy populations. From surveys in specific sites:

- densities of *Holothuria nobilis* in Sri Lanka were less than one individual per hectare (2010).
- in Zanzibar, *H. nobilis* was not located outside of protected areas, and inside protected areas was found at densities of 1.2 individuals per hectare (2010).
- declines in densities in previously fished areas of 80% over five years in Australia (1998–2005) and 83% over 16 years in Egypt (2000 – 2016) were observed for *H. whitmaei*.
- in the same studies, *H. fuscogilva* densities decreased by 86% over five years in Australia (1998–2005) and 94% over 16 years in Egypt (2000–2016).

Sea cucumbers from the family Holothuridae have been harvested in the Indo-Pacific region for over 1,000 years. In the 1980s harvesting of sea cucumbers increased to feed the demand for beche-de-mer in Asian markets. Trade data for individual species are rarely available as trade is often reported using a generic "sea cucumber" name. Annual global capture of sea cucumbers showed a six-fold increase in the 1980s and from 1990 onwards has been steadily increasing to a weight of 31,000 t in 2016.

One species-specific example of trade comes from the Seychelles, where capture data between 2001 and 2016 totalled 1,700 t of *Holothuria fuscogilva* and 180 t of *H. nobilis*. Complimentary density data showed a 54% decline in *H. fuscogilva* density and a 73% decline in *H. nobilis* density between the two survey periods in 2003–2004 and 2011–2013.

*Holothuria fuscogilva* was assessed as Vulnerable on the IUCN Red List in 2010; the population is estimated to have declined by 30–50% since the 1960s. Both *H. nobilis* and *H. whitmaei* were assessed as Endangered on the IUCN Red List (2010) with declines since the 1960s estimated at 60–70% in at least 80% of its range for *H. nobilis* and 60–90% in most of its range for *H. whitmaei.*

Sea cucumber fisheries are not regulated in several countries, although some have employed various measures. Australia and Egypt both employed closed fishing areas and India employed a total ban on sea cucumber fishing, but these are not widely adopted strategies and there have been issues with implementation. Limited-access fisheries 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 implemented in Australia, Papua New Guinea, Fiji and Tonga. However, large areas of these species' ranges are not protected or regulated.

**Analysis**: *Holothuria fuscogilva, H. nobilis* and *H. whitmaei* are the target of fisheries driven by the international trade of beche-de-mer mainly to Asian markets. Information on the productivity and recruitment of all three species is relatively unknown, but threshold densities are thought to be required to ensure successful reproduction.

Although very little information on species-specific trade is available, all three species have been observed in markets. The only specific data on the impact of fishing, over a period of 11 years in the Seychelles, showed declines in density of 54% for *Holothuria fuscogilva* and 73% for *H. nobilis.* The FAO Expert Advisory Panel Report noted that both historic and recent declines have been observed in the densities of all three species which are consistent with the indicative guidelines for inclusion in Appendix II of commercially exploited aquatic species suggested in the footnote to Annex 5 of *Resolution 9.24 (Rev. CoP17)*. These declines are from studies in limited areas of the ranges of these three species, however fishing pressure is likely over much of their range. The IUCN Red List assessments have estimated the overall declines as: *H. fuscogilva* 30–50% since the 1960s, *H. nobilis* 60–70% in at least 80% of its range, and *H. whitmaei* 60–90% in the majority of its range. Many of the densities considered in the FAO Panel's report were below the "rule of thumb" threshold for healthy breeding populations.

As international trade is likely to be driving the majority of fishing for these species, it would appear that regulation of trade is required to ensure that harvest from the wild is not reducing population to a level where survival might be threatened by continued harvest or other influences.

## Inclusion of Ornamental Spiders *Poecilotheria* spp. in Appendix II

**Proponent:** Sri Lanka and United States of America

**Summary**: There are currently 15 recognized species of ornamental spiders in the genus *Poecilotheria*, with four described since 2006. Eight species are endemic to India, five are endemic to Sri Lanka, and two species occur in both countries. The IUCN Red List categorises two *Poecilotheria* species as Critically Endangered, three as Endangered, one species as Vulnerable, one species as Least Concern and one species as Data Deficient. The remainder are yet to be assessed. *Poecilotheria* spiders live in forested areas including some species in teak and banana plantations. They live in pre-existing holes or cavities in trees or behind loose bark and have been found in crevices of buildings located nearby to forested areas. The main threat to *Poecilotheria* species. appears to be habitat loss and fragmentation.

Due to the cryptic nature of *Poecilotheria,* their nocturnal habits and sensitivity to vibrations by human surveyors they are difficult to study. Therefore, current and historical population estimates and status for these species are lacking and population trends are unknown. Although many of these species' habitats are known to be declining, knowledge on the distribution of some species continues to increase as new localities are recorded extending their known range.

*Poecilotheria* are currently protected from wild harvest in Sri Lanka, however they can be legally collected in India except within protected areas. This genus of tarantulas is popular in the pet trade due to their coloration and size, with the USA and Europe the main destinations. US import data revealed 20,000 live specimens imported between 2008 and 2017, the majority (97%) were reported as captive-bred mostly coming from European countries. According to some experts, most species are considered easy to breed and the number of individuals bred in captivity is likely enough to sustain the overall demand of those species. However, morphological and genetic diversity is said to be highly sought after in the hobby and there are some concerns over ongoing offtake from the wild. Imports into the USA of wild-caught *Poecilotheria* totalled 643 over the same time period and included at least 10 species: *P. metallica* (253), *Poecilotheria spp.* (124)*, P. rufilata* (69), *P. tigrinawesseli* (42), *P. regalis* (38)*, P. formosa* (30), *P. fasciata* (26), *P. ornata* (26), *P. striata* (16), *P. miranda* (14) and *P. subfusca* (5). Few wild sourced specimens where reported as originating in a range State and most were imported from Europe.

***Poecilotheria metallica*** (Indian endemic) was the most commonly imported species into the USA (7,900 live, of which 253 were wild) and was assessed in 2008 by IUCN as Critically Endangered because its range was limited to <100 $km^2$ which was declining and severely fragmented.

***Poecilotheria regalis*** (Indian endemic) was one of the species most commonly imported into the USA (1,700 live, of which 38 were wild) and was assessed in 2008 by IUCN as Least Concern as it was widely distributed in India and although its available habitat was known to be shrinking and faced several threats, it was considered one of the most abundant of all *Poecilotheria* species.

***Poecilotheria hanumavilasumica*** (first described in 2004) was assessed as Critically Endangered in 2008 due to a limited distribution (<6 $km^2$) and continuing decline in area, quality, populations and number of mature individuals. In 2015, this species was discovered in Sri Lanka, extending its known range. A total of 114 live specimens (all reported as captive-bred) were imported into the USA between 2008 and 2017. Smuggling of adults and juveniles from India has been reported.

Several other threatened species were reported in trade, most of which was reportedly captive-bred, although some limited wild trade was reported and for some species international trade was said at the time to be a threat although it is not known if this is still the case.

Some species of *Poecilotheria* appear to be morphologically distinct, such *as P. metallica* and could be easily identified by enforcement authorities. However, other species such as *P. hanumavilasumica* closely resemble other species and could pose challenges in enforcement. The ventral leg markings of the species are the primary identifiers of most species, leg-banding

patterns appear to be relatively conserved with little intra-specific variation between individuals and the taxonomy of the group is unresolved.

**Analysis**: Information on the historical and current wild population sizes of *Poecilotheria* species is lacking and therefore population trends are unknown, although most populations are believed to be fragmented with limited ranges. *Poecilotheria* are currently protected in Sri Lanka, but can be legally collected in India outside of protected areas. Available information indicates that the main threat faced by *Poecilotheria* species is habitat loss and fragmentation.

Of the species which appear in international trade, at least one, *P. regalis* is widespread and considered by IUCN to be Least Concern. Although trade data are limited to US imports, the USA is thought to be one of the main markets (as well as Europe), trade in wild specimens is low and it is unlikely they meet the criteria for inclusion in Appendix II.

Other species such as *P. hanumavilasumica* and *P. metallica* have restricted ranges and declining habitat and may already meet the biological criteria for inclusion in Appendix I, although much of the trade into the USA is reported to be from captive-bred sources and therefore it is unclear what impact trade is having on these species in the wild. It would seem to be precautionary to list these two species in Appendix II.

Species within this genus are distinguished through their leg-banding patterns. *P*. *metallica* could be easily identified by enforcement authorities, whereas *P. hanumavilasumica* closely resembles other species including *P. fasciata* and *P. striata*. It is also likely that the taxonomy will continue to evolve. Thus, if Parties consider *P. hanumavilasumica* and *P. metallica* to meet the criteria for inclusion in Appendix II, then it would be deemed appropriate to list the genus in order to facilitate implementation.

**Other Considerations:** If the proposal is rejected, the range States could consider an Appendix-III listing for their species. In this case stipulating a zero-export quota for wild specimens with the listing for Sri Lanka would reflect that export from there is illegal.

## Inclusion of Mindoro Peacock Swallowtail *Achillides chikae hermeli* in Appendix I

**Proponent:** European Union and Philippines

**Summary**: This proposal recommends the inclusion of Mindoro Peacock Swallowtail *Achillides chikae hermeli* in Appendix I, and the adoption of a new standard taxonomic reference for Papilionidae (swallowtail butterflies) in the Philippines.

This Mindoro Peacock Swallowtail was discovered in 1992 on Mindoro Island in the Philippines and upon its discovery it was named as *Papilio hermeli*. A very similar butterfly the Luzon Peacock Butterfly was already known from Luzon Island, adjacent to Mindoro. The Luzon Peacock Butterfly currently designated *Papilio chikae* was included in Appendix I in 1987. It is one of three species in the genus *Papilio* currently listed in the Appendices. Some taxonomists consider these two populations to be subspecies of the same species. Some also consider these and other species of East Asian swallowtails to belong to a separate genus *Achillides,* which otherwise is considered a subgenus of *Papilio*.

The Proponents recommend the adoption Page and Treadway (2004) as a standard taxonomic reference for Papilionidae in the Philippines, a source that recognises *Achillides* as a separate genus, and that considers the two populations to be subspecies of the same species (*Achillides chikae chikae* and *Achillides chikae hermeli*). Having consulted the Animals Committee Nomenclature Specialist, the Proponents state that the adoption of Page and Treadwell (2004) would have the effect of changing the current listing of *Papilio chikae* in Appendix I to *Achillides chikae chikae*.

They also propose including the Mindoro population, considered as *Achillides chikae hermeli* by Page and Treadway (2004), in the Appendices on the basis that it closely resembles *Papilo chikae*. Although the lookalike criteria in Annex 2bA of *Res. Conf. 9.24 (Rev. CoP17)* allow for listing in Appendix II on that basis, the proponents seek to list this taxon in Appendix I, citing as justification *Res. Conf. 12.11* (*Rev. CoP17*), which recommends that in the case of subspecies:

> b) where there are identification difficulties, the problem be approached by either including the entire species in Appendix I or Appendix II or by circumscribing the range of the subspecies warranting protection and listing the populations within this area on a country basis.

*Achillides chikae hermeli* is found in two separate mountain masses (Mt. Halcon and Mt. Baco) on the island of Mindoro in the Philippines. Page and Treadaway (2004) described it as being observed from 1800-2400 m on Mt Halcon. Its habitat of montane forests has been decreasing and is fragmented in some parts. The taxon was considered to be rare but with a 'probably stable' population soon after it was described. It has not yet been assessed by IUCN. As a species, *Achillides chikae* (including *Papilio chikae* and *A. c. hermeli*) is said to be a very local butterfly with a tendency to concentrate in certain localities.

All swallowtail butterflies are protected in the Philippines, with trade managed through permits of which none have been issued for this taxon, and therefore all trade is presumably illegal. *Achillides* are considered popular among collectors, naturalists and researchers, and *P. chikae [A. c. chikae]* is reported to be amongst the most beautiful and desirable. Both *A. c. hermeli* and *Papilio chikae [A. c. chikae]* have been found offered for sale online within the Philippines and non-range States. Instances of illegal trade have been noted with indications that specimens of *P. chikae [A.c chikae]* have been traded under the name "*P. hermeli" or A. c. hermeli.* Although there are distinguishing features between the two taxa, these may not be easily apparent to enforcement officers.

**Analysis**: *Achillides chikae hermeli* has been observed for sale online (although numbers appear relatively low) within the collector trade, and as the taxon is protected all trade is thought to be illegal. Specimens of *P. chikae* have been traded under the name *P. hermeli* or *A. c. hermeli*. Although there are distinguishing features between the two taxa, these may not be easily apparent to enforcement officers, and it would appear that listing *A. c. hermeli* in Appendix II would ensure more effective control of trade in the taxon currently listed as *P. chikae.*

The Proponents have recommended the adoption of Page and Treadaway (2004) as the CITES standard reference for Papilionidae in the Phillippines as recommended in paragraph 2 d of *Res. Conf. 12.11 (Rev. CoP17) Standard nomenclature.* If this is adopted, the taxon currently listed in Appendix I as *P. chikae* would become *A. c. chikae*.

Under *Res. Conf. 12.11 (Rev.* CoP17). It is recommended in the case of subspecies where there are identification difficulties that the problem be approached by either including the entire species in Appendix I or Appendix II or by circumscribing the range of the subspecies warranting protection and listing the populations within this area on a country basis. Given that *A. c. hermeli* is considered to meet the criteria in Annex 2b as a lookalike, listing both the subspecies in Appendix I, and thus resulting in the full species *Achilides chikae* would appear to be in line with the recommendations in *Res. Conf. 12.11 (Rev. CoP17)*.

*Achillides chikae hermeli* is endemic to the Philippines with a restricted distribution on Mindoro Island and decreasing habitat and remaining natural forest reported to be fragmented and largely confined to higher altitudes. There is little population information and it was considered rare although with a population that was ‘probably stable’ soon after it was described. It may be that the species also meets the biological criteria for listing in Appendix I in its own right.

## Inclusion of Riverside Swallowtail *Parides burchellanus* in Appendix I

## **Proponent:** Brazil

**Summary**: The Riverside Swallowtail *Parides burchellanus* is endemic to Brazil. It is found along river margins and in riparian gallery forests within the Cerrado region, a relatively scarce habitat that is influenced heavily by anthropogenic factors. The species was assessed in 2018 as Endangered, considering the discovery of a subpopulation around the Serra da Canastra National Park, and is considered critically endangered in the Brazilian List of Threatened Species.

The species occurs in three districts of eastern Brazil; Distrito Federal, Minas Gerais and Goiás, and is known from no more than four distinct areas or subpopulations. These subpopulations are spatially restricted, and the population overall is severely fragmented and in decline. Individuals have a limited ability to disperse and move only a few hundred metres along rivers, there is no natural connection between the four known subpopulations. The overall population size is unknown, but known subpopulations are very small, with numbers reaching up to 50 individuals, but more commonly around 30 individuals.

The species' area of occupancy is currently estimated to be 120 km² based on known localities and is unlikely to extend beyond 500 $km^2$. The Cerrado habitat, which *P. burchellanus* relies on exclusively, is under threat from ongoing habitat loss and degradation: Cerrado habitat is estimated to have lost more than half of its original vegetation for farming for crops, cattle-raising activities, energy generation and urbanisation. The only known larval host plant, *Aristolochia chamissonis* is sparsely distributed in small sections along streams associated with fragile and vulnerable environments, which are under threat. The life history traits of *P. burchellanus*, including high habitat specificity and low resilience, make it highly vulnerable to extrinsic factors. Local extinctions have been observed, caused by habitat degradation.

Specimens of *P. burchellanus* appear within international trade with specimens offered for sale online at high prices. *Parides burchellanus* is protected under Brazilian legislation and the capture of specimens is prohibited, therefore trade observed for this species is assumed to be illegal.

**Analysis**: The total population is unknown for *Parides burchellanus,* although subpopulations are estimated to be very small and persist in only four localities that are spatially restricted, severely fragmented and in decline. Some localised extinctions in subpopulations have been observed. Overall population trend data are unavailable however some subpopulations are inferred to be declining due to habitat degradation. This species has observed low resilience to extrinsic factors such as habitat loss and flooding events. There is evidence for international trade in pinned specimens of *P. burchellanus,* which is believed to be illegal. Although little is known of the population overall, it seems likely that the restricted distribution and fragmented range, very small subpopulations, threats to the habitat and vulnerability due to its specialised niche requirements mean that *Parides burchellanus* meets the criteria in Annex 1 of *Res. Conf. 9.24 (Rev. CoP17).*

## Inclusion of Trumpet Trees *Handroanthus* spp.*, Tabebuia* spp. and *Roseodendron* spp. in Appendix II with annotation #6

## **Proponent:** Brazil

**Summary**: *Handroanthus*, *Tabebuia* and *Roseodendron* are genera of Bignoniaceae distributed from southern USA to Argentina and Chile, including the Caribbean. There are currently 106 recognised species across the three genera (30 in *Handroanthus*, 73 in *Tabebuia* and 3 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. There is considerable confusion in the taxonomy and nomenclature of the three genera with differing names used in the literature and in reported trade.

Species within these genera produce a very hard, heavy and durable wood that is used locally in the construction of houses and bridges, flooring, decking and handicrafts. Internationally it is one of the preferred timbers for decking. The wood is marketed with the same common name (ipê); distinguishing between species and between genera is reportedly difficult even at the microscopic level, and there are no identification guides covering all species.

*Handroanthus* timbers are some of the most valuable 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.

Although no estimates for the global trade in ipê exist, ITTO members reported exports totaling approximately 271,000 $m^3$ sawn wood (96% from Brazil) and 5,000 $m^3$ logs (all from Suriname) from 2011-2015. Brazil reportedly exports ipê to 60 countries, the principal importers being the USA and European countries. Trade from Brazil accounted for 93% of ipê sawn wood and ca. 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, and there are concerns over inappropriate management measures including overestimation of sustainable offtakes, although it is unclear what proportion of illegally harvested timber enters international trade.

***Handroanthus serratifolius***
Of ipê exports reported by Brazil from 2010-2016, 70% (ca. 180,000 $m^3$) 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. Although annual production of *H. serratifolius* in Brazil increased by 150% from 2012-2017, reaching 220,000 $m^3$ in 2017, exports of this species decreased from 36,000 $m^3$ in 2012 to 16,000 $m^3$ in 2016. 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 $m^3$/ha. 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 impetiginosus***
Like *H. serratifolius*, populations of *H. impetiginosus* in parts of Brazil have reportedly suffered significant declines through overexploitation, although reported exports of the species from Brazil were relatively low (1,665 $m^3$ from 2010-2016). Exports of *H. impetiginosus* are also reported by Venezuela (20,491 $m^3$ from 2007-2017). The species was categorised globally as Least Concern on the IUCN Red List in 1998, although exploitation was considered to have contributed to population declines, particularly in Brazil. The species is currently categorised as near threatened in Brazil, threatened in Mexico and endangered in Peru.

***Other species***
Other species reported in international trade include *H. capitatus* (6,000 $m^3$ sawn wood exported from Suriname from 2011-2015), *H. heptaphyllus* (5,000 $m^3$ sawn wood exported from Guyana from 2011-2015), *Roseodendron donnell-smithii* (183 $m^3$ sawn wood and 510 roundwood pieces exported from Mexico from 2010-2012), and *Tabebuia rosea* (exports from Venezuela totalling 29,637 $m^3$ from 2007-2017 and seizures destined for international export totalling 66 $m^3$ from 2013-2018). 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, while in other areas reforestation programs are underway.

The proponents seek to include the genera *Handroanthus, Tabebuia* and *Roseodendron* in Appendix II with annotation #6 (logs, sawn wood, veneer sheets and plywood).

**Analysis:** *Handroanthus*, *Tabebuia* and *Roseodendron* are genera of New World trees comprising over a hundred 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 on 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 a number of countries from Mexico to Argentina.

While global data on trade are not available, Brazil appears to be the main exporter of ipê, the majority of which is of *H. serratifolius* with 15 other species also exported. There are also reports of illegal ipê harvest and trade taking place in the country. 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. On this basis, *H. serratifolius* and *H. impetiginosus* may meet the criteria for inclusion in Appendix II in Annex 2a of *Res. Conf. 9.24 (Rev. CoP 17)*. The remaining species in all three genera would therefore meet the criteria for inclusion in Annex 2b, based on the reported identification difficulties as well as taxonomic and nomenclatural uncertainties.

If this proposal is adopted, it is not clear whether the proposed annotation #6 (logs, sawn wood, veneer sheets and plywood) would cover the main commodities that first appear in trade and drive the demand. Decking and flooring accounted for more than three-quarters of Brazil's reported exports of *H. serratifolius* from 2010-2016, and Brazilian legislation currently prohibits the export of unfinished wood of native species (although large quantities of sawn wood are also reportedly imported into the USA from Brazil). None of the parts and derivatives defined in *Res. Conf. 10.13 (Rev. CoP15*) *Implementation of the Convention for timber species* currently explicitly covers flooring or decking, or refers to the HS code that seems most relevant (HS44.09). It may therefore be necessary to create a new annotation to include "Wood" as defined in HS44.09 and amend *Res. Conf. 10.13* accordingly. Proposal 53 seeks to amend the annotation for *Pericopsis elata* to read "Logs, sawn wood, veneer sheets, plywood, and transformed wood", with transformed wood defined as HS code 44.09, and if that proposal is adopted the same annotation could be applied in this case. This may be considered to be expanding the scope of the proposal, but would be in line with the guidance in *Res. Conf. 11.21 (Rev. CoP17) Use of annotations in Appendices I and II*.

## Inclusion of Mulanje Cedar *Widdringtonia whytei* in Appendix II

## **Proponent:** Malawi

**Summary**: The Mulanje Cedar *Widdringtonia whytei* is a slow growing, coniferous tree in the cypress family, endemic to the Mount Mulanje Massif in south-eastern Malawi, which occurs over 650 km$^2$. It can reach a height of 40 m and over 1 m in diameter, taking 80–100 years fully to mature. Much of its habitat is found in the Mount Mulanje Forest Reserve. It historically grew at 1500–2200 m above sea level. There are around 70 ha of plantations on Zomba Mountain and another 80 ha in the large timber plantations of the Viphya Plateau, which may include a mix of *W. whytei* and *Widdringtonia nodiflora.*

*Widdringtonia whytei* faces numerous threats, the most serious of which are changing fire regimes, fuelwood collection, illegal logging, invasive tree species and conifer aphids.

*Widdringtonia whytei* was assessed as Critically Endangered in 2011 on the basis that threats were likely to cause a decline of more than 80% by 2030. In 2014, a Forest Department survey found 38,138 mature, living *W. whytei* (with a further 25,609 standing dead individuals) but by 2017 only seven mature *W. whytei* trees were found, all of which had been felled by 2018. There are no reproductively mature trees on the Mulanje Mountain. The remaining population is thought to comprise of seedlings that have been planted since 2017 as part of a major restoration project. Due to low regeneration and recruitment, the success of the project will not be known for years to come. Plantation forestry has been conducted in other areas of Malawi with limited success.

The export of native hardwood logs has been banned since 2008 and *W. whytei* is listed as a protected species in Malawi. Licences were only meant to be issued for salvage logging of dead trees, but illegal logging that targeted the remaining large, living trees escalated throughout the period 2007–2018. While *W. whytei* has been commercially exploited for over a century, it is unclear whether international trade or national utilisation has driven the recent decline.

The proposal is to list the species *W. whytei* in Appendix II without annotation.

**Analysis**: There are no mature *Widdringtonia whytei* trees remaining in its natural habitat, the last remaining seven having been felled by 2018. The species can be considered to be commercially extinct in the wild and therefore meets the biological criteria for listing in Appendix I already. Seedlings planted since 2017 are unlikely to mature for tens of years and therefore any trade in this species from the wild is not likely in the near future. Appendix II listing is therefore unlikely to have any significant conservation impact.

It is possible that trade in *W. whytei* from plantations may occur as plantation forestry has been attempted for over a century with limited success.

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

**Proponents:** Bangladesh, Bhutan, India and Nepal

**Summary**: North Indian Rosewood *Dalbergia sissoo* is a fast-growing perennial tree, native to Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Iraq, Myanmar, Nepal and Pakistan, and is 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 provides resilience to this threat. In Bangladesh, India, Nepal and Pakistan the species is widely cultivated, and has also successfully naturalised within some new areas, following afforestation programmes. *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 utilised plantation tree species in the Indian subcontinent where it is economically important for its value in forestry, agroforestry and horticulture.

The genus *Dalbergia* was listed in Appendix II at CoP17 (2016) with annotation #15, except for the species already listed in Appendix I. 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 between the various species of *Dalbergia* reliably so the whole genus should be listed. In 2017 the predominant commodities of *D. sissoo* reported in international trade were carvings (~5.8 million kg) and wood products (735,000 items plus ~80,000 kg), and most were reported as pre-Convention (although there was some trade reported as from artificially propagated and wild sources). The majority of trade was from India, and European countries (particularly Germany) and the USA were the major importers.

Many experts acknowledge that, without the use of technology, it is difficult for non-experts readily to identify *Dalbergia sissoo* once made into finished products, and these 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.

A proposal to amend annotation #15 has also been submitted (CoP18 Prop. 52). Should this be accepted, trade in some items, including products containing less than 500 g of wood and musical instruments, would be exempted from controls. This may have a significant impact depending on what proportion of India's carvings contain less than 500 g of wood; India raised particular concerns over the impact that the listing of *Dalbergia sissoo* has had on their handicraft industry.

**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 plantations. While the species does not meet the Appendix II listing criteria in Annex 2a of *Res. Conf. 9.24 (Rev. CoP17)*, differentiating this species in trade from all other *Dalbergia* species does, at present, remain a major implementation challenge. While methods exist to differentiate *D. sissoo* from other members of the genus in trade, these require expertise and technology not currently widely available globally. The species therefore still meets the criteria in Annex 2bA in that "the specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2 (a), or in Appendix I, so that enforcement officers who encounter specimens of CITES-listed species are unlikely to be able to distinguish between them." If the species is not removed from the Appendices, it may be that any impact on the handicraft industry might be mitigated by the proposed change to annotation #15.

## Amendment of Annotation #15

## **Proponents:** Canada and the European Union

**Summary**: The scope of the listing for species of *Dalbergia* included in Appendix II as well as *Guibourtia demeusei, G. pellegriniana* and *G. tessmannii* is defined by annotation #15 to the listing, which currently reads:

All parts and derivatives are included, except:

a) Leaves, flowers, pollen, fruits, and seeds;
b) Non-commercial exports of a maximum total weight of 10 kg per shipment;
c) Parts and derivatives of *Dalbergia cochinchinensis,* which are covered by Annotation # 4;
d) Parts and derivatives of *Dalbergia* spp. originating and exported from Mexico, which are covered by Annotation # 6.

The changes proposed to this annotation are:

- to remove the current part b) and add a new b) “Finished products to a maximum weight of wood of the listed species of 500g per item”
- add a new c) “Finished musical instruments, finished musical instrument parts and finished musical instrument accessories”
- relabel the current c) and d) as d) and e) respectively.

There have been challenges in interpretation and implementation of this annotation. These include concerns that some of the commodities currently covered by the listing (including finished products such as musical instruments and furniture) are not those that first appear in international trade as exports from range States and therefore their inclusion under the annotation was inconsistent with the guidance on annotations provided in *Res. Conf. 11.21 (Rev. CoP17)*. These issues have led to considerations on this matter by the Standing Committee and its Working Group on Annotations.

**Analysis:** The proposed amendment to annotation #15 is the result of the extensive discussions and consensus reached by the Standing Committee Working Group on Annotations (see SC70 Com.17). The Standing Committee has supported the proposed amendment, which is intended to reduce the challenges with interpretation and implementation of the current annotation #15 experienced by Parties and ensure the annotation is in line with guidance on use of annotations in *Res. Conf. 11.21 (Rev. CoP17)*. Given the extensive debate on these changes and the consensus reached by the Standing Committee, the proposed changes should address the issues raised by (the majority of) stakeholders. Finished pieces of furniture made from the species to which the annotation applies are unlikely to contain wood of those species weighing less than 500g, so if the proposal is accepted these would continue to be covered by the listing, regardless of whether they were being exported by a range State or a processing country.

## Amendment of the annotation to the listing of *Pericopsis elata* in Appendix II: expand the scope of the annotation (currently #5) to include plywood and transformed wood

**Proponents:** Côte d'Ivoire and the European Union

**Summary**: *Pericopsis elata*, commonly known as Afromosia or African Rosewood, is a highly valued tropical timber native to Central and West Africa. *Pericopsis elata* was listed in Appendix II in 1992 with annotation #5 (amended in 2007), which restricts the listing to "logs, sawn wood and veneer sheets". At the time the annotation was intended to cover the major products in trade.

The European Union (EU), one of the main importers of timber of this species, has observed instances where traders from range States have been exporting sawn wood with minor, superficial transformation in order to circumvent CITES controls. The Standing Committee Annotations Working Group considered that the extent and scale of cases where the listing was being circumvented warranted a change to the annotation to ensure that CITES controls cover those commodities that dominate the trade, and supports the amendment proposed by Côte d'Ivoire and the EU. Although the full extent of trade in this transformed wood is unknown, it is likely to be only superficially different to sawn wood, which currently dominates the reported international trade.

The proposed amendment would expand the current annotation for *P. elata* to include plywood and transformed wood to read:

> "Logs, sawn wood, veneer sheets, plywood, and transformed wood[1]."

In addition, a footnote is included to "transformed wood" that would read:

"[1] Whereby transformed wood is defined by HS code 44.09: Wood (including strips, friezes for parquet flooring, not assembled), continuously shaped (tongued, grooved, v-jointed, beaded or the like) along any edges, ends or faces, whether or not planed, sanded or end-jointed."

The proposed amendment is intended to expand the scope of the listing of *P. elata* to close the observed loophole and include commodities that first appear in international trade as exports from range States, and commodities that dominate the trade and demand for the wild resource, as advised in *Res. Conf. 11.21* (*Rev. CoP17*) *Use of Annotations in Appendices I and II*.

A similar proposal was submitted for *Dalbergia cochinchinensis* at CoP17 (2016) where the same loophole under annotation #5 was identified as being exploited. That proposal was accepted and the species is now listed with annotation #4.

Other species are currently listed in Appendix II and III with annotation #5, including some species of *Cedrela*. A separate proposal has been submitted to list the *Cedrela* genus in Appendix II with no annotation (CoP18 Prop. 57). It does not appear that the present proposal (CoP18 Prop. 53) is intended to apply to all taxa listed with annotation #5. Therefore, amending the annotation for *P. elata* only would require a new annotation solely for *P. elata*.

**Analysis:** International trade in *Pericopis elata* appears to involve products not included in the current listing under annotation #5, based on the observation of shipments into the EU of superficially transformed sawn wood. The intention to include transformed wood (and plywood) to close the observed loophole seems an appropriate amendment and has been supported by the Standing Committee Working Group on Annotations.

As other species are also listed with annotation #5, if the proposed amendment is accepted a new annotation would be required specifically to cover *P. elata*.

The proposed amended annotation includes the term plywood, which is already defined in *Res. Conf. 10.13 (Rev. CoP15) Implementation of the Convention for Timber Species*. No other existing annotations include the term "transformed wood". The proposed footnote to the annotation provides a definition of "transformed wood" (as HS44.09) in line with guidance in *Res. Conf. 10.13 (Rev. CoP15*).

However, it may be more appropriate to include the proposed definition in *Res. Conf 10.13 (Rev. CoP15)* rather than to have this as a footnote to the annotation. Thus, any changes to the definition could be amended through an amendment to the Resolution rather than through another proposal to amend the Appendices.

**Other Considerations:** There is a proposal (CoP18 Prop. 49) to include the genera *Handroanthus, Tabebuia* and *Roseodendron* in Appendix II with annotation #6 to cover "logs, sawn wood, veneer sheets and plywood", however transformed wood also appears to be one of products in trade and if the amended annotation for *Pericopsis elata* is accepted then the same annotation may also be appropriate for those genera.

The trade term "transformed wood" is not included in the Annex to the *Guidelines for the preparation and submission of CITES annual reports* (Notification No. 2017/006), which may need addressing.

## Inclusion of African Padauk *Pterocarpus tinctorius* in Appendix II

**Proponent:** Malawi

**Summary**: *Pterocarpus tinctorius* is a tree species native to nine countries across Africa's belt of miombo woodland vegetation. It is a slow-growing tree, estimated to take up to 90 years to reach maturity. The species is in international trade, mainly for its timber which is used for furniture and flooring. It is commonly traded under the general name "mukula" or sometimes "African Padauk", names that are also applied to similar species, such as *P. angolensis, P. soyauxii* and *P. castelsii*. Domestic demand is also said to be high for timber, firewood and a variety of other uses.

There is very little information about population size, structure and rates of decline for *P. tinctorius*, although it is thought to be locally common, but declining across its range, and some national populations are known to be decreasing (e.g. Zambia). Taking into account the risk of over-harvesting, *P. tinctorius* was assessed as Least Concern in 2017. The assessment recommended the species' harvest and trade be monitored to identify any major increase in its use, particularly as other *Pterocarpus* species in trade become rare or protected.

The main international market is considered to be China, and to a lesser extent Viet Nam. Although *Pterocarpus tinctorius* is not officially recognised as a "hongmu" species (other species of *Pterocarpus* are) or included on China's list of precious furniture woods, reports suggest that the species has seen an increase in exploitation due to a growth in consumption of "hongmu" and other "rosewoods" in China since 2010.

As multiple species are commonly traded under the same names, it is difficult to determine specific trade levels of *P. tinctorius.* There is some confusion surrounding legislation in certain range States, so it is not clear how much of the trade is illegal, although a number of seizures have taken place. Examples of trade volumes include from the Democratic Republic of the Congo (DRC) where it was estimated in 2015 that almost 45,000 $m^3$ of "mukula" was transported across the border annually to Zambia, and onwards to China. Trade data from Tanzania show that exports of *P. tinctorius* increased seven-fold between 2012 and 2014 from around 800 $m^3$ to 5,600 $m^3$.

*Pterocarpus erinaceus*, listed in Appendix II in 2017, is a "hongmu" species native to west and central Africa, including in countries that border range States of *P. tinctorius*. There is conflicting information regarding the ease of identification of this species and others in the genus. Some consider *P. erinaceus* wood to be distinguishable from other *Pterocarpus* species due to the light base colour of the heartwood, although others say that identification is only reliable at the genus level.

The proposal is to list *P. tinctorius* in Appendix II without annotation, in order to include all readily recognisable parts and derivatives.

**Analysis:** *Pterocarpus tinctorius* is harvested for timber and has a number of other local uses. There is evidence of a recent increase in export of 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 species is widespread and locally common, and although it is thought to be declining it was assessed by IUCN as Least Concern in 2017. It is a slow-growing, late-maturing species. The current level of harvest for timber is likely to be unsustainable, in that it almost certainly exceeds the rate at which harvestable-sized trees are being replenished in the population. However, very little species-specific trade data are available, and it is unknown how much harvest is for domestic versus international markets. While there is insufficient evidence to determine clearly whether the species meets the criteria in Annex 2a of *Res. Conf. 9.24 (Rev. CoP17),* given the uncertainty and the apparent serial exploitation of similar precious wood-producing trees, it may be precautionary to list the species in Appendix II.

There seem to be some difficulties in distinguishing between *P. tinctorius and P. erinaceus* (already listed in Appendix II), and therefore it seems likely that *P. tinctorius* meets the look-alike criteria for listing in Appendix II provided in Annex 2b of *Res. Conf. 9.24 (Rev. CoP17)*.

The proposal without annotation is intended to avoid the potential for regulations to be circumvented as has been seen with other rosewood listings and seems a sensible approach.

**Other Considerations:** Some trade is likely to be illegal as certain range States have export bans in place. Any additional benefits of an Appendix II listing are not clear unless enforcement efforts are increased. If this proposal is accepted, those range States with export bans could request that the CITES Secretariat posts zero quotas on the CITES website if they wished to reflect national legislation.

## Amendment of the annotation to the listing of Bitter Aloe *Aloe ferox*

## **Proponent:** South Africa

**Summary**: *Aloe ferox* is a medicinal plant native to South Africa and Lesotho that has been included in CITES Appendix II since 1975 as part of the genus level listing of *Aloe* spp.
The current annotation to the listing #4 includes the following:

All parts and derivatives, except:
a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae species exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Dypsis decaryi* exported from Madagascar;
b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers;
c) cut flowers of artificially propagated plants;
d) fruits, and parts and derivatives thereof, of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae;
e) stems, flowers, and parts and derivatives thereof, of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and
f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade.

The Proponents seek to amend the annotation so that part f) reads:
finished products[1] of *Aloe ferox* and *Euphorbia antisyphilitica* packaged and ready for retail trade.

The proposed amendment provides a footnote defining "finished product" as follows:
[1]This term, as used in the CITES Appendices refers to products, shipped singly or in bulk, requiring no further processing, packaged, labelled for final use or the retail trade in a state fit for being sold to or used by the general public.

Almost all trade in wild *Aloe ferox* originates from South Africa. Bitter sap ("bitters") is extracted from harvested leaves, crystalised and sometimes ground to powder then exported. Recently, further processing of secondary extracts has been taking place including the inner leaf jelly as a juice, gel or powder, and these products too have been increasingly going into international trade. End uses of *Aloe ferox* products include health drinks, medicines and a range of healthcare and cosmetics products. South Africa's exports have been dominated by extracts (bitters) however, there has been increasing trade reported as derivatives and in the years 2013-2015 exports of derivatives exceeded those of extract by gross weight. South Africa states that its exports of derivatives refer to finished products and the quantities of *Aloe ferox* in these are minimal. However, studies provided on concentrations of *Aloe ferox* extracts contained in finished products do not help to clarify the significance of export quantities reported as derivatives.

Other species in the Appendices are also annotated with #4 but would not be affected by this amendment.

**Analysis:** According to *Res. Conf. 11.21 (Rev. CoP17)* annotations should concentrate on those commodities that first appear in international trade as exports from the range State and include only those commodities that dominate the trade and the demand for the wild resource. South Africa exports large quantities of wild sourced *Aloe ferox* extract and derivatives, the latter having increased proportionately in recent years apparently due to increased processing of finished products in South Africa. South Africa has said that most of the derivatives they have reported are finished products packaged and ready for retail trade and propose that they be excluded from CITES controls by the proposed amendment to the annotation. Exports of derivatives have been increasing over the last 10 years and in some years the total weight reported (which might include significant amounts of other ingredients) has exceeded the export by weight of the primary extract. These derivatives, or finished products are commodities that first appear in international trade. If they are becoming dominant in the volumes of exports their exemption would not be in line with the guidance in

*Res. Conf 11.21 (Rev. CoP17).* However, this is not possible to ascertain without more detailed insight into the concentration of primary and secondary *Aloe ferox* extracts in the products exported.

If the amendment to exclude finished products of *Aloe ferox* is adopted, it would not be necessary to include a footnote defining “finished products” as this definition is the same as that provided in the Interpretation text of the Appendices and therefore does not require a footnote defining it specifically in this annotation.

*Aloe ferox* would only be differentiated from other *Aloe* species on the basis of ingredient lists.

## Amend annotation #16 to the listing of Grandidier's Baobab *Adansonia grandidieri* in Appendix II by deleting reference to live plants

**Proponent:** Switzerland

**Summary**: Grandidier's Baobab *Adansonia grandidieri*, a species of baobab tree endemic to Madagascar, was included in Appendix II at CoP17 with annotation #16 “seeds, fruits, oils and live plants” to indicate the parts and derivatives that were covered by the listing. Switzerland, as the Depositary Government for the Convention, draws attention to the fact that the inclusion of the term “live plants” is redundant, inconsistent with other listings and potentially misleading. This is because, according to Article I of the Convention and *Res. Conf. 11.21 (Rev. CoP17),* live plants (and whole dead plants) are automatically covered by listings in the Appendices. By including reference to live plants in #16, and not in any other annotations, it could be mistakenly interpreted that live plants were not covered by those other annotations. The original intent of listing *Adansonia grandidieri* with #16 was to ensure that enforcement officers would be aware of the full extent of the listing.

Switzerland suggests that the interpretation section of the Appendices be changed to emphasize the fact that all live and whole dead plants (and animals) are always included in listings. The Standing Committee Working Group on Annotations proposed an amendment to paragraph 7 that serves this purpose (see SC70 Doc. 67.1 Annex 2). This amendment will be considered at CoP18 (see CoP18 Doc. 101).

**Analysis**: The proposal is sound and in full accord with the provisions of the Convention.

## Inclusion of all species of the genus *Cedrela* in Appendix II

## **Proponent:** Ecuador

**Summary:** *Cedrela* is a genus of tree with 17 species occurring in Mexico and the Caribbean islands south to Argentina. *Cedrela odorata* is the most widespread species and appears to be the most highly traded species internationally, although other species are also used for their valuable timber.

*Cedrela odorata* has been listed in Appendix III by Colombia and Peru since 2001, by Guatemala since 2008, by Bolivia since 2010, and by Brazil since 2011. Two other species in the genus, *C. fissilis* and *C. lilloi,* have been listed in Appendix III by Bolivia and Brazil since 2010 and 2016 respectively. All listed populations are covered by annotation #5 (logs, sawn wood and veneer sheets).

*Cedrela odorata* was assessed as globally Vulnerable with a decreasing population trend on the IUCN Red List in 2017, with the unsustainable harvest of timber cited as the main threat. Many populations appear to have been severely depleted by targeted over-exploitation, are categorised as nationally endangered or vulnerable, and are subject to laws and other measures to regulate harvest. Illegal trade has been reported. Extensive loss of habitat also threatens the species; deforestation data indicate that the range has decreased by 29% in the last 100 years, and is estimated to decline by 40% in the next 100 years.

The wood of *C. odorata* is used extensively for furniture making and other purposes. According to the CITES Trade Database, large quantities of sawn wood have been exported by Peru, Bolivia and Brazil (noting that data reported to CITES primarily reflect exports from range States with Appendix III-listed populations), as well as non-range States where plantations have been established. The principal importers were the USA and Mexico (43% and 33% of total reported imports from 2007-2016, respectively). Available data for the principal range State exporters indicate that domestic trade exceeds international trade (annual average of 72,000 $m^3$ relative to 46,000 $m^3$ for Bolivia, Brazil and Peru combined over the period 2004-2008).

There was a substantial increase in exports and prices of *C. odorata* timber following the 2003 listing of Big-leaf Mahogany *Swietenia macrophylla* in Appendix II. Reported exports of *C. odorata* timber peaked at over 60,000 $m^3$ in 2007 but subsequently declined to under 10,000 $m^3$ in 2010. Exports then increased slightly with the listing of the Bolivian and Brazilian populations in 2010/2011, and remained relatively stable at around 14,000 $m^3$ per year from 2014 to 2016.

*Cedrela odorata* has been planted widely in parts of the region and introduced to many countries elsewhere. Although monospecific plantations have not generally been successful in the tropical Americas due to vulnerability to the Shoot Borer *Hypsipyla grandella*, in other regions monospecific plantations are well established. The vast majority of reported exports from plantations ("artificially propagated") were from non-range States (Côte d'Ivoire and Ghana). Although exports from plantations exceeded exports from the wild in every year since 2013, there was an overall decline in exports from plantations from 2013 (over 12,000 $m^3$) to 2016 (ca. 8,000 $m^3$).

*Other species*
Both *C. fissilis* and *C. lilloi* are also widely distributed and categorised as globally threatened (Vulnerable and Endangered respectively), with certain national populations also categorised as threatened. Over-exploitation for timber has been reported to be a threat, in addition to habitat loss.

While *C. fissilis* timber is considered inferior to that of *C. odorata*, timber of the two species is reportedly marketed interchangeably. In Ecuador, it was reported in 2018 that most wild populations of *C. fissilis* had been destroyed and the remaining large trees were being felled for export to Colombia. Total exports of *C. fissilis* reported in the CITES Trade Database primarily comprised 1,650 $m^3$ wild-sourced sawn wood and 6,400 $m^2$ source "I" veneer (the majority exported from Brazil); no trade was reported from 2014 onwards. ITTO reports include exports of *C. fissilis* totaling ca. 83,000 $m^3$ sawn wood (60% from Bolivia and the remainder from Brazil) in the period 2002-2016; exports showed a marked overall decrease from 17,000 $m^3$ in 2002 to 2,000 $m^3$ in 2015 (no exports were reported in 2016).

No exports of *C. lilloi* have been reported. Many of the remaining species in the genus are reported to be threatened in all or part of their range due to a combination of deforestation and targeted over-exploitation, although demand for timber of these species appears to be primarily domestic.

The USA, which appears to be one of the principal importers of *Cedrela,* reported imports of sawn/chipped wood (HS code 4407) of unspecified *Cedrela* species totaling 144,663 $m^3$ from 2007-2018. The principal exporters were Peru (21%), Côte d'Ivoire (18%), Ghana (15%), Bolivia (15%) and China (10%). It is not clear if exports from non-range States are re-exports or originate from plantations in those countries.

Although identification manuals have been developed to differentiate the woods of certain *Cedrela* species, several range States have reported identification difficulties and according to one expert it is not possible to distinguish between species in the genus based on either macroscopic or microscopic characters of the wood.

**Analysis:** *Cedrela* is a genus of New World trees of which *C. odorata* is the most widespread species. *Cedrela odorata* has been intensively exploited for its timber, for both domestic and international trade. Based on available data, the principal exporters of *C. odorata* appear to be Bolivia, Brazil, Peru, Côte d'Ivoire and Ghana. Although the timber of certain other species is also reported to be valuable and can be marketed interchangeably with *C. odorata*, it is not clear whether there is significant international demand for other species. Some populations of *C. odorata* and several other species are known to have been substantially reduced by the combined effects of deforestation and targeted over-exploitation. Given the estimated historic and future declines for *C. odorata,* and significant historic impact of international trade, the species may meet the criteria for inclusion in Appendix II set out in Annex 2a of *Res. Conf. 9.24 (Rev. CoP 17)*. Given the reported identification difficulties, the remaining species in the genus would appear to meet the criteria for inclusion in Annex 2b.

**Other Considerations:** The proposal does not include an annotation. However, the scope could be restricted using an annotation that covers the main products in trade (all populations currently included in Appendix III are covered by annotation #5). Sawn wood has been the most common product in reported international trade.

Front cover photo:
Rhino-horned Lizard *Ceratophora stoddartii*
endemic to Sri Lanka by Shanaka Aravinda.

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