ANALYSES

Summaries of the IUCN/TRAFFIC Analyses of the proposals to amend the CITES Appendices at the 16th meeting of the Conference of the Parties

Bangkok, Thailand
3–14 March 2013

Prepared by IUCN Global Species Programme
and Species Survival Commission
and TRAFFIC

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United Kingdom, Department for Environment, Food and Rural Affairs (Defra)

Netherlands, CITES Management Authority, Ministry of Economic Affairs

Finland, Ministry of the Environment

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IUCN – The International Union for Conservation of Nature helps the world find pragmatic solutions to our most pressing environment and development challenges. IUCN's work focuses on valuing and conserving nature, ensuring effective and equitable governance of its use, and deploying nature-based solutions to global challenges in climate, food and development. IUCN supports scientific research, manages field projects all over the world, and brings governments, NGOs, the UN and companies together to develop policy, laws and best practice. IUCN is the world's oldest and largest global environmental organization, with more than 1,200 government and NGO members and almost 11,000 volunteer experts in some 160 countries. IUCN's work is supported by over 1,000 staff in 45 offices and hundreds of partners in public, NGO and private sectors around the world.

The IUCN Species Survival Commission (SSC) is the largest of IUCN's six volunteer commissions with a global membership of more than 7,500 experts. SSC advises IUCN and its members on the wide range of technical and scientific aspects of species conservation, and is dedicated to securing a future for biodiversity. SSC has significant input into the international agreements dealing with biodiversity conservation.

TRAFFIC the wildlife trade monitoring network, works to ensure that wildlife trade is not a threat to the conservation of nature. TRAFFIC is a strategic alliance of IUCN and WWF.

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INTRODUCTION

CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) celebrates its 40th anniversary this year, having been opened for signature in Washington DC on 3rd March 1973. If it is to remain a credible instrument for conserving species affected by trade, the decisions of the Parties need to be based on the best available scientific and technical information. Recognizing this, IUCN and TRAFFIC have provided technical reviews of the proposals to amend the CITES Appendices for each Conference of the Party since 1987. Information on the status and biology of species has been collected from IUCN's Species Survival Commission network of specialist groups and the broader scientific community, and used to evaluate the proposals and the information proponents provided against the CITES biological criteria. TRAFFIC has focussed on the analysis of the trade, using components of the proposals in addition to drawing on its own information sources and expert networks. The resulting document brings together a broad range of expertise, which we are confident will be of assistance in the discussions of the proposals.

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 laid out in the listing criteria elaborated in *Resolution Conf. 9.24 (Rev.CoP15)* and other Resolutions and Decisions. The review of each proposal consists of a summary section and more detailed supporting text. The summary section presents a synthesis of available information and, in a separate part, a specific analysis of whether or not the proposal may be considered to meet the pertinent criteria in *Resolution Conf. 9.24 (Rev.CoP15).* The more detailed supporting text is presented in table form. These tables are designed to focus attention on the biological and trade criteria and the precautionary measures of *Resolution Conf. 9.24 (Rev.CoP15*). Text in the left hand side includes selected information drawn from the supporting statement pertinent to a particular criterion. Text in the right hand side consists of comments, observations and additional information obtained in the review process.

The approach taken for preparation of the Analyses followed that used successfully in preparation of the Analyses for CoP15. Following the deadline for Parties' submission of amendment proposals (4th October 2012), the Analyses team compiled available information to prepare a first draft of the analyses. These drafts, together with a series of additional questions and clarifications, were then sent to a range of expert reviewers who were asked to comment, particularly on the accuracy and reliability of information presented. Reviewers' responses were then incorporated into the final document. The "Analysis" part for each proposal was only finalised at the end of the process and therefore excluded from the external review process. The assessments expressed in this publication do not necessarily reflect those of IUCN or TRAFFIC, nor the reviewers as a body.

To satisfy the needs of the Parties for information well before the CoP, the reviews were completed and made available online on 24th December 2012. Due to funding constraints, the Summary and Analysis paragraphs only will be translated into French and Spanish. Printed versions of the Summary and Analyses paragraphs in all three languages will be made available at CoP16 in Bangkok, Thailand. The background material is available separately online via the IUCN and TRAFFIC websites[1].

These analyses do not aim to be exhaustive, but rather highlight relevant information on which the Parties can base their decisions. Clearly there may be omissions and differences of interpretation in a document compiled on a wide range of proposals covering many different species in such a short time frame. We have nevertheless tried to ensure that the document is factual and objective.

A summary of the CITES listing criteria and the IUCN Red List Categories and Criteria is provided as an annex to the document. It should be emphasized that the numerical guidelines for the listing criteria in *Resolution Conf 9.24 (Rev. CoP15)*, Annex 5 are not thresholds and may not be appropriate for all species. References to source material are provided in the right hand side of the tables (Additional Information) wherever possible; in some cases, these sources have been consulted directly while in others, they have been cited by reviewers to support their statements. Where information is not referenced, it should be assumed that the source is IUCN or TRAFFIC. For source information in the left hand side, the supporting statement within the proposal should be consulted. The term 'CITES trade data' refers to data from CITES Annual Reports as provided by the Parties available in the CITES trade database managed by UNEP-WCMC. Where information has been provided from a particular country's official trade statistics, this has been specified.

[1] *www.iucn.org/about/work/programmes/species/our_work/species_and_policy/iucn_traffic_analyses_of_proposals_cites_cop16*
www.traffic.org/cop16

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We dedicate The Analyses for CoP16 to our former colleague and friend Sue Mainka whose input, insight, experience, tough encouragement and good humour were greatly missed this time.

Contents

Transfer of *Rupicapra pyrenaica ornata* from Appendix I to Appendix II

Proponent: Denmark (on behalf of the European Union Member States acting in the interest of the European Union)

Summary: *Rupicapra pyrenaica ornata* is a subspecies of chamois, or goat antelope, endemic to Italy, where it occurs in four isolated populations, estimated at around 1500 individuals in total, having increased from around 250-300 in the early 1970s. Three of these populations are part of re-introduction programmes, with one of them numbering only a few animals, as the introduction process is still under way. The global population is stable or increasing though one relatively large sub-population peaked at 645 individuals in 2005, but has since stabilized at around 500. The main potential threats to the taxon include effects related to its small population size, low genetic variability, competition for space and food with livestock and the transmission of diseases from livestock to wild animals. The subspecies occurs in a number of protected areas and is protected nationally and internationally. In a 2008 assessment, *R. pyrenaica ornata* was classified as Vulnerable by IUCN. Other populations of the species *Rupicapra pyrenaica* occur in Andorra, France and Spain. One other member of the genus *Rupicapra* is currently recognised, *Rupicapra rupicapra,* which also occurs in Italy. Chamois in general are popular targets for trophy hunters, but are not known to be in significant demand in international trade.

Rupicapra pyrenaica ornata was included in CITES Appendix I in 1975. It is the only taxon in the genus *Rupicapra* to be listed in the CITES Appendices. There has been virtually no reported international trade in recent years (2001-2010).

At its 25th meeting (Geneva, 2011), the Animals Committee selected *R. pyrenaica ornata* for review in the Periodic Review of Appendices. The review was conducted by Italy, in collaboration with UNEP-WCMC.

Analysis: *Rupicapra pyernaica ornata* still has a small global population. The global population is stable or increasing and the taxon is not known to be highly vulnerable to either intrinsic or extrinsic factors. Similarly, its area of distribution is relatively restricted but is not declining or highly fragmented, and is within protected areas. The taxon itself is legally protected and is not known to be in demand for international trade. It would appear that the taxon does not meet the criteria for inclusion in Appendix I.

The current listing of *R. pyrenaica ornata* is inconsistent with recommendations for split-listing set out in Annex 3 of *Resolution Conf. 9.24. (Rev. CoP15*), which advise that split-listings that place some populations of a species in the Appendices, and the rest outside the Appendices, should normally not be permitted (although it should be noted that Article I of the Convention defines “species” as “any species, subspecies, or geographically separate population thereof”).

Following the precautionary measures set out in Annex 4, the taxon is proposed for transfer to Appendix II, rather than immediate deletion from the Appendices.

Transfer of the Ecuadorian population of Vicuña *Vicugna vicugna* from Appendix I to Appendix II

Proponent: Ecuador

Summary: The Vicuña *Vicugna vicugna* is a wild camelid, prized for its fine quality wool. It is native to the high Andes of Argentina, Chile, Plurinational States of Bolivia, and Peru. There is debate over whether the species was originally native to Ecuador or not; no archeological or paleontological evidence has been found to date that Vicuñas historically existed in Ecuador. The current population in Ecuador is derived from animals donated by Chile, Peru and Bolivia in 1988, 1993 and 1999. Three hundred animals were introduced into the Chimborazo Fauna Reserve (585.6 km^2) and another 57 into 20 km^2 of suitable habitat surrounding the village of San José de Tipín, 70 km south of the reserve. Periodic population surveys have been carried out between 2000 and 2012, with marked increases between each and an overall increase from around 1700 to almost 5000 animals, almost all of these within the Chimborazo Faunal Reserve. In addition to an increase in population size, habitat within the Chimborazo Fauna Reserve has reportedly improved.

The global Vicuña population decreased to a few thousand during the mid-1960s due to over-exploitation, leading to the establishment of the *Convenio para la Conservación y Manejo de la Vicuña* (The Vicuña Convention) in 1969. The species was included in Appendix I in 1975. With improving management, the population has increased and was estimated in 2008 at around 350 000 individuals. Several populations have been transferred to Appendix II—all Bolivian and Peruvian populations and select populations from Argentina and Chile. Each Appendix-II population of Vicuña has been accompanied by an annotation stating that it is for "the exclusive purpose of allowing international trade in wool sheared from live vicuñas", also stating the products that can be traded and the system with which products will be labelled and that "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 products currently exported from those countries are fleece, fibre, wool, yarn and/or clothes and the main countries of destination are Australia, China, Germany, Italy, the USA and the United Kingdom, with Italy importing over 90% of all Vicuña fibre/products.

A five year FAO-funded project to protect the natural resources of Chimborazo (PROMAREN) began in 2012. Staff numbers in the reserve have increased to 16 park wardens (from only seven in 2011), an environmental education and capacity building programme has been started and meetings have been held with the local communities to discuss the management of the reserve.

Currently in Ecuador the only commercial use of the species is to attract tourists to the Chimborazo Fauna Reserve. The proponents have estimated that sustainable commercial trade of Vicuña fibre and other products derived from Ecuador's Vicuña population has an annual yearly potential production of 190 kg (from shearing 28% of the 2009 population, namely 886 animals), worth between USD20 000 and USD75 000. Products would be marked "VICUÑA-(Country of origin)-Artesania" as required by the Vicuña Convention. Local communities will be the beneficiaries of any commercialisation of Vicuña fibre/products.

Illegal killing of Vicuña is not currently considered to be a threat in Ecuador, however, conflicts of land use for grazing domestic animals are apparent and ongoing conservation of the introduced and increasing Vicuña population is likely to be reliant on local communities receiving economic benefits from these animals in the near future.

As required under the Vicuña Convention (ratified by Ecuador in 1982), prior to submitting a proposal for transfer of its Vicuña populations from Appendix I to Appendix I, Ecuador has prepared a management plan. This was published by the Environment Ministry in December 2010 and approved by the Ecuadorian Government in March 2011. However, details of the plan are not provided in the supporting statement to the proposal. The plan describes the communities and organizations involved in the programme and methods used for capture and shearing. Planned actions focus on developing institutional and technical capacity (with the support of other Vicuña Convention member countries), carrying out social and ecological research (including annual population monitoring) and strengthening community organisation and participation.
The current proposal does not include any annotation.

Analysis: The Ecuadorian population of Vicuña could be considered to have a fairly restricted range and to have a small population, according to the guidelines in Annex 5 to Resolution Conf. 9.25 (Rev. CoP15). However, the population and range have been increasing since the founding animals were introduced in 1988 and the population appears to be neither excessively fragmented nor highly concentrated geographically, nor to show marked fluctuations or be highly vulnerable to extrinsic or intrinsic factors. The population therefore does not appear to meet the biological criteria for inclusion in Appendix I.

Ecuador has stated that its intention is to initiate international trade in products derived from its Vicuña population. The proposal notes specifically that precautionary measures in A 2c of Annex 4 to Resolution Conf. 9.24 (Rev. CoP15) will be met. These state that "an integral part of the amendment proposal is an export quota or other special measure approved by the Conference of the Parties, based on management measures described in the supporting statement of the amendment proposal, provided that effective enforcement controls are in place." However, no quota is stated in the proposal nor are any other special management measures detailed. A management plan has been prepared but has not been included as part of the proposal.

The addition of an annotation similar to those covering the Vicuña populations currently included in Appendix II would bring the proposed listing into line with that of these other populations.

Transfer of Polar Bear *Ursus maritimus* from Appendix II to Appendix I

Proponent: United States of America

Summary: The Polar Bear *Ursus maritimus* is the largest living member of the bear family or Ursidae. It occurs at high latitudes in Canada, Greenland/Denmark, Norway (specifically Svalbard area), Russian Federation and the United States of America (Alaska), with vagrants recorded in Iceland. Polar Bears are strongly associated with marine environments where there is sea ice for all or part of the year, particularly in coastal regions but also in the central Arctic basin in regions of permanent pack ice. Preferred habitat is ice that is periodically active, where wind and sea currents cause movements and fracturing of the ice followed by refreezing. It is in such areas that Polar Bears can most successfully hunt. Polar Bears feed primarily on seals, particularly Ringed Seals *Pusa hispida*, Bearded Seals *Erignathus barbatus*, other seals, and walruses *Odobenus rosmarus,* and also scavenge on the carcasses of whales. They will infrequently take terrestrial mammals, birds and vegetation when other food is unavailable but such foods are thought to be energetically insignificant. Polar Bears that have continuous access to sea ice are able to hunt throughout the year. However, in those areas where the sea ice melts completely each summer, Polar Bears spend several months on land relying largely on stored fat reserves until freeze-up. Breeding occurs in March to May, implantation is delayed until autumn, and birth is generally thought to occur from late November to mid-January. The average litter size is somewhere between one and two. Cubs are dependent upon mothers until 2.5 years of age. Age of first reproduction is normally 5–6 years for females. Generation time is usually taken as 15 years, but may range from around 12 years to around 15 years, depending on conditions.

For the purposes of conservation and management, the Polar Bear population is generally divided into 19 subpopulations, or stocks, of very unequal size. However, genetic differences between different subpopulations are small and there is considerable overlap between them. The current overall estimate (2012), taken by summing estimates for different subpopulations, is of a global population of 20 000–25 000. Around 65% of the population either occurs entirely in Canada or is shared by Canada and adjacent territories (Alaska and Greenland).

Various attempts were made from the 1950s to the 1970s to produce global population estimates by extrapolating from surveys or den counts in limited parts of the range. These produced estimates ranging from 5000 to 20 000 bears, but are not considered reliable. Because of the lack of reliable historical data it is not possible to determine quantitative trends in overall population size from historical to present level. However, it is suspected that protective measures introduced in various parts of the range, notably in the then USSR in the 1950s and Norway, Canada and the USA in the 1970s, allowed the size of the global Polar Bear population to increase throughout portions of the range where human-caused removals had been occurring. Data are not available to quantify population trend for most of the currently defined subpopulations over this time period.

An assessment by the IUCN Polar Bear Specialist Group in 2009 concluded that the global population was slowly declining based on individual assessments of each of the subpopulations, of which 1 was increasing, 3 were stable and 8 were known or thought to be declining due to habitat loss, direct human-caused effects, or both. Data were insufficient to provide any assessment of current trend for the remaining 7 subpopulations. A similar exercise in 2005 concluded that 2 populations were increasing, 5 were stable, and 5 declining, with insufficient data to provide trends for the remaining subpopulations. On the basis of the 2005 assessment, the Polar Bear has been classified by IUCN as Vulnerable based on a projected population reduction of greater than 30% within the next three generations (taken as 45 years) as a result of reductions in sea ice habitat availability and quality.

The projected declines in extent and quality of habitat are based on observed and predicted changes in sea ice as a result of climate change. Recent modelling of the trends for sea ice extent, thickness and timing of coverage predicts dramatic reductions in coverage over the next 50–100 years. Satellite observations have shown decreases in the extent of summer sea ice coverage since 1979 with greatest losses compared to the 1979-2012 average occurring since 2000. Studies in the Southern Beaufort Sea, Southern Hudson Bay, and Baffin Bay have identified relationships between sea ice decline and various declines in survival, reproduction, and body condition emphasizing the importance of sea ice to vital rates. Body condition similarly declined in

Davis Strait during a period of sea ice loss, but population size was also increasing during this time. However, data are sufficient for only a few subpopulations to determine whether population size also has declined with declining sea ice, and such a decline has only been demonstrated in the Western Hudson Bay subpopulation. In other subpopulations, such as the Northern Beaufort Sea, data suggest that observed sea ice changes have not yet had a negative effect on polar bears. Data are not available for many areas where some of the most significant declines in sea ice have occurred, such as the Kara and Laptev Seas.

While in the short term, relationships between the various effects of climate change (e.g., sea ice loss, changes in biological productivity, changes in trophic structure) and polar bears are likely to vary, long-term subpopulation declines are projected throughout the species' range if sea ice loss continues as forecasted. A 2009 study using resource selection functions applied to general circulation climate models predicted Polar Bear habitat loss of 5% per decade in the polar basin, amounting to 15-22% habitat loss over three generations (based on a generation time of 12-15 years). A 2010 model using Bayesian probability approaches also based on general circulation climate models and combining limited observational data with expert opinion predicted a high likelihood under business-as-usual climate scenarios of Polar Bears becoming extirpated in the seasonal ice and divergent ice ecoregions, where the majority of the population is found, by the middle of the 21th century. If this outcome were realized, it could mean the loss of two thirds of the global population. The model also indicated that if global warming is mitigated, projected declines in polar bear distribution and numbers would be attenuated.

Other factors that may have an impact on recruitment or survival of Polar Bears include toxic contaminants, shipping, tourism, oil and gas exploration, development resource exploration and development and overharvest.

Polar Bears are subject to a range of management measures. At the international level, all range States (including Denmark on behalf of Greenland) are members of the Agreement on the Conservation of Polar Bears, which came into force in 1976. The Contracting Parties (or Range States) met in 1981 and then not again officially until 2009, when they agreed to hold meetings every two years (their third meeting was in 2011). There is also a series of bilateral agreements concerning shared Polar Bear populations. Polar Bears are legally hunted under various restrictions in Canada, Greenland and Alaska (USA). Numbers taken are regulated by quota in some areas and not in others. In Norway and western Russia no hunting is allowed except for that of problem animals and defence kills. Some hunting by native people in the Chukotka (Chukchi) region of the Russian Federation is theoretically allowed under the Agreement between the United States of America and the Russian Federation on the Conservation and Management of the Alaska-Chukotka Polar Bear Population, which came into force in 2007. A quota was established in 2010 and the US is currently working to implement the quota in a phased approach over the next several years. Implementation of the quota in Russia will require introduction of a legal harvest which is contingent on development of adequate monitoring and enforcement mechanisms.

Currently, global legal annual harvest is between 500 and 700 bears. The majority of polar bear harvest in the Arctic is conducted by indigenous peoples for subsistence, cultural, social, and economic purposes. The global legal harvest represents 3-4% of the global population and is generally agreed to be managed to not negatively affect the persistence of most subpopulations at the present. The effects of harvest will depend on the ability of managers to adjust harvest levels with population responses to sea ice loss. It is estimated that some 60-70% of the harvest consists of males. Harvests are managed in some areas to target a 2:1 male to female harvest ratio, but sex selective harvests can be difficult to manage. There have been concerns over harvest rates of two subpopulations shared by Canada and Greenland – Kane Basin and Baffin Bay, but a management agreement was recently established between these two countries and efforts are underway to obtain new scientific data to form the basis of updated management advice. Currently, because of a non-detrimental finding initiated by Greenland, international export of hides from Kane Basin and Baffin Bay is prohibited. There are current concerns regarding harvest levels in Western Hudson Bay and Southern Hudson Bay in Canada. Illegal hunting in the Chukotka region has also been identified as a potential problem, although there are significant challenges to quantifying the number of bears killed annually in this region. Some estimates suggest that current levels exceed the recently identified quota under the US-Russia Agreement.

The Polar Bear was included in Appendix II in 1975. Polar Bear products are in trade. The range of different products and units of measure used in records makes it difficult to relate trade data to number of Polar Bears in trade. However, it is believed that exports in the period 2005-2009 represented between 300 and 400 Polar Bears per year, most exported from Canada. The overall volume of reported trade has changed relatively little in the past 25 years. Greenland introduced a voluntary temporary ban on export of Polar Bear products in 2007 and in 2009 Canada issued a negative non-detriment finding for all Polar Bears from the Baffin Bay management unit. In the US polar bear parts may only be used for traditional handicrafts, and commercial trade in polar bear skins or skulls is prohibited.

Analysis: Regarding the biological criteria for inclusion in Appendix I set out in *Resolution Conf. 9.24 (Rev. CoP15)*, the global population of Polar Bears (ca 20 000) would not appear to be small, following the guidelines for the definition of a small population set out in Annex 5 to the Resolution, which suggests a figure of less than 5000 is an appropriate guideline of what might constitute a small wild population. The Polar Bear's area of distribution extends over several million square kilometres and is clearly not restricted. The Polar Bear's population has not undergone a marked decline in the recent past, nor is there any evidence that the current size of the Polar Bear population represents a marked decline from a (hypothesized) historical baseline. There is general agreement that the Polar Bear population is currently declining, but the rate of decline is believed slow, as evinced by the lack of change in overall population estimates in the past decade. It would appear therefore that current rate of decline does not meet the definition of a marked ongoing decline as elaborated in Annexes 1 and 5 to *Resolution Conf. 9.24 (Rev. CoP15),* which suggest a general guideline for such a decline as 50% or more over 10 years or three generations, whichever is the longer.

Annex 1 of *Resolution Conf. 9.24 (Rev. CoP15)* also refers to a marked decline in the population size in the wild projected on the basis of any one of a number of factors. Annex 5 of the Resolution notes that projection involves extrapolation to infer likely future values. The numerical guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)* do not explicitly address projected future declines and give no indication as to how such declines might be assessed within the context of the criteria. Any future changes in the Polar Bear population remain conjectural. Based on changing habitat conditions brought about by human-induced climate change, at least one model predicts major declines of Polar Bear populations by the middle of the 21st century; others predict less marked changes. The basis for the current IUCN Red List Categorization of the species as Vulnerable (published in 2008), taking all available information into account, was a view that the most likely decline over the next three generations (taken as 45 years) would be more than 30% but less than 50% (as the latter in this case would have led to a categorization of Endangered under criterion A2 of the IUCN Red List Categories and Criteria ver 3.1). If it assumed that the guideline figures in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)* for a marked recent rate of decline could also be applied to a projected future decline, then on this basis, the Polar Bear would not appear to meet the biological criteria for inclusion in Appendix I.

Deletion of Percy Island Flying Fox *Pteropus brunneus* from Appendix II

Proponent: Australia

Summary: '*Pteropus brunneus'* (Percy Island Flying Fox) is the name attached to a single specimen of flying fox collected in the 19th century lodged in the Natural History Museum, London, UK. The collecting location was given as Percy Island, Australia, and the collection date as 1859. The Percy Islands are a group of islands in the Northumberland Group (to Australia) some 50-75 km off the Queensland coast. The specimen closely resembles the Little Red Flying Fox *Pteropus scapulatus*, which occurs on the Australian mainland opposite the Percy Islands group. Although there is not complete agreement on the matter, there is a general view that the Percy Island Flying Fox is in fact a misattributed specimen of *P. scapulatus*, likely also with a misattributed collection site. The only flying fox known to occur on the Percy Islands is the considerably larger Black Flying Fox *P. alecto.*

Pteropus brunneus was included in CITES Appendix II in 1990 as part of a general listing of *Pteropus* spp. Eight species in the genus had been included in Appendix II in 1987 owing largely to concerns regarding international trade for food in the South Pacific region; in 1990 seven of these species were transferred to Appendix I and the rest of the genus included in Appendix II, largely for look-alike reasons. Under the current standard taxonomic reference for the genus, 65 species are recognised. Six species other than *P. brunneus* occur in Australia; all assessed by IUCN as Least Concern except for *P. poliocephalus* which is regarded as Vulnerable. Of the other members of the genus, two species – *P. subniger* from Mauritius and Réunion (France) and *P. tokudae* from Guam (to US) – are classified as Extinct and several others are in a similar position to *P. brunneus*, i.e. are known from one or two specimens of ancient provenance whose taxonomic status is uncertain. All Australian native mammals, including *Pteropus* species, are covered by legislation that strictly prohibits export for commercial purposes.

As part of the periodic review of the Appendices, the Animals Committee recommended that the Percy Island Flying Fox be removed from Appendix II (AC 26 WG1 Doc. 2). The recommendation was made based on information provided by the Australian CITES Scientific Authority for consideration at the 26th meeting of the Animals Committee (Geneva, March 2012).

Analysis: It is very likely that *Pteropus brunneus* never existed as a valid species. If it was a valid species, and its distribution was the Percy Islands, Australia, then it is almost certainly long extinct. All Australian native mammals are covered by legislation that strictly prohibits export for commercial purposes. There is evidently therefore no risk entailed in deleting *P. brunneus* from the Appendices. However, the species is included as part of a higher taxon listing (in this case for all *Pteropus* spp. other than those included in Appendix I). Several other species of *Pteropus* currently listed in Appendix II are of doubtful validity as species, or extinct – that is, the same conditions apply to these as to *P. brunneus*. Deletion of *P. brunneus* from the Appendices will require a specific amendment to the current listing to that effect. It is not apparent what function this would serve, in terms of simplifying the Appendices and facilitating implementation of the Convention.

Deletion of Thylacine *Thylacinus cynocephalus* from Appendix I

Proponent: Australia

Summary: The Thylacine *Thylacinus cynocephalus,* the sole modern representative of the family Thylacinidae, was the largest recent carnivorous marsupial, doglike in appearance. In modern times the species has only been recorded on the island of Tasmania, Australia. Prehistoric records indicate it once occurred widely in mainland Australia and on New Guinea, but died out here probably around 2000 years ago, possibly as a result of introduction of dogs (dingoes) by Aboriginal people. On Tasmania the Thylacine was widespread until the late 19th century although probably never very abundant. By the start of the 20th century the population had collapsed, almost certainly largely as a result of persecution under a bounty system (it was regarded as a threat to sheep), although disease and competition from domestic or feral dogs may also have played a part. The last recorded specimen was captured alive in 1933 and died in Hobart Zoo, Tasmania in 1936. It has been classified as Extinct by IUCN since 1982.

The Thylacine was included in CITES Appendix I in 1975, when the Convention first entered into force.

In the highly unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native mammal species for commercial purposes and requires a permit for export for non-commercial purposes.

Analysis: *Resolution Conf. 9.24 (Rev. CoP15)* notes in Annex 4 (Precautionary measures) that no species listed in Appendix I shall be removed from the Appendices unless it has been first transferred to Appendix II, with monitoring of any impact of trade on the species for at least two intervals between meetings of the Conference of the Parties (para. A. 1). It also notes: 'Species that are regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery; these species should be annotated in the Appendices as 'possibly extinct' (para. D).

It is not evident that either of these two apply in this case. Para. A 1 clearly applies to extant species as there can be no impact of trade on an extinct species, With regard to para. D, the species is regarded as extinct rather than possibly extinct. In the highly unlikely event of its rediscovery, commercial export would be prohibited by Australian legislation.

Deletion of Crescent Nailtail Wallaby *Onychogalea lunata* from Appendix I

Proponent: Australia

Summary: The Crescent Nailtail Wallaby *Onychogalea lunata* was one of three members of the genus *Onychogalea* (part of the Kangaroo family or Macropodidae) endemic to Australia. It was a small wallaby, formerly distributed over a large part of western central Australia. The last reliable report dates from 1956. In 1964 a wallaby carcass from the Gibson Desert was reportedly identified as this species on the basis of a still greasy mandibular fragment, but the specimen was not preserved and the authenticity of this record has been questioned. The species has been classified as Extinct by IUCN since 1982.

Onychogalea lunata was included in CITES Appendix I in 1975, when the Convention came into force. No trade in any specimens has ever been recorded.

In the highly unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native mammal species for commercial purposes and requires a permit for export for non-commercial purposes.

Of the two other species in the genus, one, the Bridled Nailtail Wallaby *O. fraenata*, from Queensland, is classified by IUCN as Endangered and is included in Appendix I; the other, the Northern Nailtail Wallaby *O. unguifera*, is classified by IUCN as Least Concern and is not listed in the Appendices.

Analysis: Resolution Conf. 9.24 (Rev. CoP15) notes in Annex 4 (Precautionary measures) that no species listed in Appendix I shall be removed from the Appendices unless it has been first transferred to Appendix II, with monitoring of any impact of trade on the species for at least two intervals between meetings of the Conference of the Parties (para. A. 1). It also notes: 'Species that are regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery; these species should be annotated in the Appendices as 'possibly extinct' (para. D).

It is not evident that either of these two apply in this case. Para. A. 1 clearly applies to extant species as there can be no impact of trade on an extinct species, while para. D applies to species that are 'possibly extinct' rather than species that are regarded as extinct, as in the present case. There is no reason to assume that the species would be affected by trade in the extremely unlikely event of its rediscovery. Export for commercial purposes would be prohibited by Australian legislation.

Deletion of Buff-nosed Rat-kangaroo *Caloprymnus campestris* from Appendix I

Proponent: Australia

Summary: The Buff-nosed Rat-kangaroo *Caloprymnus campestris* was a small marsupial recorded in semi-arid and arid areas in eastern central Australia. It bore a resemblance to species of bettong *Bettongia* but was placed in its own genus. The last definite records of the species were in 1935. There were unconfirmed sightings in western Queensland following periods of rain in 1956-1957 and 1974-1975 and in South Australia as recently as 1988 although a comprehensive search in north-east South Australia and south-west Queensland carried out between 1984 and 1989 failed to find convincing evidence of its survival. The species is believed likely to have been affected by predation by introduced Red Foxes *Vulpes vulpes* and feral cats and by habitat alteration owing to grazing by cattle. These factors are so pervasive that it is thought highly unlikely that the species still survives. It is now classified as Extinct by IUCN.

Caloprymnus campestris was included in CITES Appendix I in 1975, when the Convention first entered into force. It has never been recorded in international trade.

In the unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native mammal species for commercial purposes and requires a permit for export for non-commercial purposes.

Analysis: Resolution Conf. 9.24 (Rev. CoP15) notes in Annex 4 (Precautionary measures) that no species listed in Appendix I shall be removed from the Appendices unless it has been first transferred to Appendix II, with monitoring of any impact of trade on the species for at least two intervals between meetings of the Conference of the Parties (para. A. 1). It also notes: 'Species that are regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery; these species should be annotated in the Appendices as 'possibly extinct' (para. D).

It is not evident that either of these two applies in this case. Para. A. 1 clearly applies to extant species as there can be no impact of trade on an extinct species. With regard to para. D there is no reason to assume that the species would be affected by trade in the unlikely event of its rediscovery. Commercial export would, in any event, be prohibited by Australian legislation.

Deletion of Pig-footed Bandicoot *Chaeropus ecaudatus* from Appendix I

Proponent: Australia

Summary: The Pig-footed Bandicoot *Chaeropus ecaudatus* was a highly distinctive Australian marsupial, regarded as the sole representative of the family Chaeropodidae, although previously included with other bandicoots in the family Peramelidae. It formerly had an extensive range in the interior of Australia. The last confirmed specimen was collected in 1907, with sightings and unconfirmed records reported into the 1920s, recollections of the species by the Pintupi people in the Great Sandy and northern Gibson Deserts into the 1950s and reports by Aboriginal people of its presence in and around the Tanami Desert in the Northern Territory into the 1960s. The species has been classified as Extinct by IUCN since 1982.

Chaeropus ecaudatus was included in CITES Appendix I in 1975, when the Convention came into force, by which time it was almost certainly extinct. No trade in any specimens has ever been recorded under CITES.

In the highly unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native mammal species for commercial purposes and requires a permit for export for non-commercial purposes.

Analysis: Resolution Conf. 9.24 (Rev. CoP15) notes in Annex 4 (Precautionary measures) that no species listed in Appendix I shall be removed from the Appendices unless it has been first transferred to Appendix II, with monitoring of any impact of trade on the species for at least two intervals between meetings of the Conference of the Parties (para. A. 1). It also notes: 'Species that are regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery; these species should be annotated in the Appendices as 'possibly extinct' (para. D).

It is not evident that either of these two apply in this case. Para. A. 1 clearly applies to extant species as there can be no impact of trade on an extinct species, while para. D applies to species that are 'possibly extinct' rather than species that are regarded as extinct, as in the present case. There is no reason to assume that the species would be affected by trade in the extremely unlikely event of its rediscovery. Export for commercial purposes would be prohibited by Australian legislation.

Deletion of Lesser Bilby *Macrotis leucura* from Appendix I

Proponent: Australia

Summary: The Lesser Bilby *Macrotis leucura* was one of two species of bilby (genus *Macrotis*) in the bandicoot family (the Peramelidae). It was endemic to Australia where it occurred in arid regions in the interior. The last verified specimen was collected in 1931, although oral accounts by Aboriginals suggest that it may have survived into the 1960s. It has been classified as Extinct by IUCN since 1982. The reasons for its demise are unclear, although predation by introduced Red Foxes *Vulpes vulpes* and feral cats and habitat alteration have been implicated.

Macrotis leucura, along with its sister-species the Greater Bilby *Macrotis lagotis,* was included in CITES Appendix I in 1975, when the Convention came into force, by which time it was almost certainly extinct. No trade in any specimens has ever been recorded under CITES.

In the highly unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native mammal species for commercial purposes and requires a permit for export for non-commercial purposes.

Macrotis lagotis, which is easily distinguishable from *M. leucura* by its greater size and different colouration, is extant and classified as Vulnerable by IUCN. A very small amount of non-commercial trade in specimens of this species is recorded in the CITES trade database.

Analysis: Resolution Conf. 9.24 (Rev. CoP15) notes in Annex 4 (Precautionary measures) that no species listed in Appendix I shall be removed from the Appendices unless it has been first transferred to Appendix II, with monitoring of any impact of trade on the species for at least two intervals between meetings of the Conference of the Parties (para. A. 1). It also notes: 'Species that are regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery; these species should be annotated in the Appendices as 'possibly extinct' (para. D).

It is not evident that either of these two apply in this case. Para. A. 1 clearly applies to extant species as there can be no impact of trade on an extinct species, while para. D applies to species that are 'possibly extinct' rather than species that are regarded as extinct, as in the present case. There is no reason to assume that the species would be affected by trade in the extremely unlikely event of its rediscovery. Export for commercial purposes would be prohibited by Australian legislation.

Amend the annotation for *Ceratotherium simum simum*

Proposed amendment (new text underlined): "*Ceratotherium simum simum* - only the populations of South Africa and Swaziland; all other populations are included in Appendix I. For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies. <u>Hunting trophies from South Africa and Swaziland shall be subject to a zero export quota until at least CoP18.</u> All other specimens shall be deemed to be specimens of species included in Appendix I and the trade in them shall be regulated accordingly."

Proponent: Kenya

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*, which currently survives only as four individuals from captivity in a private sanctuary in Kenya. The Southern White Rhinoceros currently numbers around 20 000 wild individuals, 93% of which occur in South Africa. There are introduced or reintroduced populations based on founder stock from South Africa in Botswana, Kenya, Mozambique, Namibia, Swaziland, Uganda, Zambia and Zimbabwe and over 700 individuals in captivity around the world. The subspecies has been increasing (it was estimated at 11 000 individuals in 2004) and is currently classified as Near Threatened by IUCN.

The entire rhinoceros family, the Rhinocerotidae, was included in Appendix I of CITES in 1977. The South African population of Southern White Rhinoceros 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." The population of Swaziland was transferred to Appendix II in 2004 under the same annotation. The population of Southern White Rhinoceros in Swaziland is very small, and no export of the species from the country is recorded in the CITES trade database.

There is a highly significant demand for rhino horn in consumer countries, particularly in Asia. This provides strong incentives for illegal killing of rhinos and illegal trade in rhino horn. Illegal killing of rhinos in South Africa has increased very markedly in recent years, from 13 in 2007 to 448 in 2011 and, as of early December, 618 in 2012. There is also concern that sport hunting of Southern White Rhinoceros has provided a legal method of obtaining rhino horn which can then be legally exported and which may then be sold commercially for medicinal, ornamental and status purposes. These end-uses are in contravention of import permits granted for hunting trophies. Hunting with this intention has been referred to as "pseudohunting". It has been estimated that in the period 2009 to September 2012 "pseudohunting" has been the second largest source of horns from Africa destined for the illegal Asian market, accounting for around 17% of the number of horns, with almost all the rest (75% of the total) coming from illegally killed rhinoceroses. The majority of applications for sport hunting of Southern White Rhinoceros that are believed to represent "pseudohunting" have originated in Viet Nam. An increase in sport hunting applications from the Czech Republic and Poland in 2011 is believed to have represented proxy "pseudohunting", it being thought very likely that any resulting trophies were destined for Asia.

In February 2012, South Africa's national Department of Environmental Affairs suspended the issuance of hunting permits to Vietnamese citizens until Viet Nam reported back on the status of previously exported hunting trophies to ensure that they have not entered trade. This was followed in April 2012 with the publication of revised norms and standards for marking rhinos and rhino horn, and for trophy hunting of rhino. In South Africa compulsory attendance by an official is now legally required at all hunts, and hunting *curricula vitae* from applicants which show their hunting experience in their country of origin and with African game are now required before permits can be granted. DNA sampling of horns is now mandatory. Implementation of these measures has resulted in a marked decline in rhino hunting applications by citizens from Southeast Asia, the Czech Republic and Poland, and a reduction of over 60% in total number of rhino hunting applications in South Africa in 2012 compared to 2011.

The proponents believe that continued legal trophy hunting of rhino may be stimulating demand for illegal uses of horn and have therefore proposed a zero quota for export of hunting trophies from South Africa and Swaziland until at least CoP18.

Analysis: As a general point, proposals to introduce annotations to the Appendices that attempt to bind Parties to an agreement not to make changes to the Appendices in future appear to go against both the letter and the spirit of the Convention and to be in practice unenforceable, in that there is nothing to prevent Parties proposing amendments to them at a later CoP (or intersessionally). This is borne out by the only current example in the Appendices, concerning the African Elephant *Loxodonta africana*, adopted at CoP14 and proposed for amendment both at CoP15 (CoP 15 Prop 6) and (currently) at CoP16 (Cop16 Prop. 12) by one or more of the Parties that proposed an annotation of this form in the first place. The current proposal takes this form, as it asks Parties to agree to a zero quota at least until CoP18.

There are no guidelines in *Resolution Conf.* 9.24 (*Rev. CoP15)* for assessing amendment proposals of this kind. However, a zero export quota for an Appendix-II listed species is similar in effect (though in fact stricter than) an Appendix-I listing. The combined populations of Southern White Rhinoceros in South Africa and Swaziland do not meet the criteria for inclusion in Appendix I. However, the proponents argue that the existence of a legal trophy export trade provides a conduit for rhino horn to enter illegal commercial markets in Asia through '"pseudohunting"' and believe that this has the effect of stimulating demand, thereby increasing pressure on rhino populations and on those charged with protecting them.

The first part of this argument seems undoubtedly true, supported in particular by the large numbers of imports of rhino trophies to Viet Nam in recent years. However, South Africa in 2012 has taken extensive domestic measures to deal with the issue of "pseudohunting". These have resulted in a recent marked reduction in number of hunting licences issued, particularly to applicants from countries whose nationals are believed to be participating in or to have participated in "pseudohunting". The second part seems more questionable. It is very hard to establish any direct link between supply and demand for commodities such as these which are highly valued but traded in small volume (in absolute terms) and in which most of the trade is illegal.

This proposal, if accepted, would not affect the ability of all other range States – i.e. those whose White Rhino populations are in Appendix I – to allow export of hunting trophies for non-commercial purposes.Only a small amount of such trade has been reported in recent years. However, this means that the proposal would not have the intended outcome of stopping all international trade in White Rhino trophies, but would have the effect of imposing stricter export controls on South Africa and Swaziland than on any other range State.

Amend the annotation for African Elephant *Loxodonta africana*

Proposed amendment: (additional text underlined, deleted text struckthrough):

h) no further proposals to allow trade in elephant ivory from any 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 14.77 and 14.78 (Rev. CoP15).

Proponent: Burkina Faso and Kenya

Background: The African Elephant *Loxodonta africana* 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 annotations that were further modified during subsequent meetings of the Conference of the Parties. The current annotation was agreed at CoP14. With regard to trade in raw ivory, it allowed those African Elephant range States whose populations are already included in Appendix II to dispose of agreed quantities of stockpiled ivory in a one-off sale, under a series of restrictions. One of these restrictions is that included in the paragraph proposed for amendment here, namely that those range States (Botswana, Namibia, South Africa and Zimbabwe) should not submit further proposals to allow trade in elephant ivory for a period of nine years after the single sale of their ivory stockpiles. This restriction does not apply to other African Elephant range States, which all have their elephant populations in Appendix I and can therefore submit proposals concerning trade in African Elephant ivory. The sale of ivory in question took place in November 2008. The current annotation therefore applies until November 2017.

The proponents believe that the agreement reached during discussions among the African Elephant range States at CoP14 was that no proposals for trade in elephant ivory would be submitted by any range State until at least nine years had elapsed after the one-off sale of ivory from Botswana, Namibia and South Africa. They believe that the amendment proposed here, if adopted, would make this clear.

Discussion: There are three issues with this proposal. The first concerns whether it is appropriately dealt with as a proposed amendment to the Appendices; the second with the interpretation of the wording; and the third with whether it would be practical in whatever form it were considered.

Appropriateness as an annotation under *Resolution Conf. 11.21 (Rev. CoP15)*

The Appendices comprise lists of species the trade in specimens of which is regulated under the Convention. Many of the entries in the Appendices are annotated to specify or clarify the type of specimen actually regulated, this being allowed in some cases under the Convention. At CoP11 and again at CoP14, the Parties considered the use of annotations in the Appendices, producing *Resolution Conf. 11.21 (Rev. CoP15)*. They recognised two kinds of annotations: reference annotations and substantive annotations.

Reference annotations are for information purposes only and include those relating to nomenclature and whether a species is possibly extinct or not.
Substantive annotations are considered to be integral parts of the species listing. There are two kinds. One specifies the inclusion or exclusion of designated geographically separate populations, subspecies, species, groups of species, or higher taxa, which may include export quotas. The other specifies the types of specimen or export quota. No other kind of annotation is recognised, nor is it easy to see how any other kind of substantive annotation could be regarded as consistent with the provisions of the Convention as they currently stand.

As noted in the Analysis for CoP15, the paragraph in question does not conform to either of the two kinds of recognised annotation and is therefore not in conformity with *Resolution Conf. 11.21 (Rev. CoP15)*. The proposed amendment would not alter this.

Wording of the proposed amendment

Retaining a reference to the past ("the period from CoP14") in a substantively changed annotation, as would occur if the current proposal were adopted, would render the annotation an nonsensical – Parties cannot agree not to do something (or to do something) in the past. This could be resolved by altering the phrasing simply to refer to the date in question ("no proposals shall be submitted to the Conference of the Parties…… until November 2017 at the earliest").

It is questionable whether the proposed amendment would achieve the proponent's aim. If adopted, the amendment would now read "no proposals to allow trade in elephant ivory from any populations in Appendix II....". But the proposals that the amendment is intended to address are for populations in Appendix I, not II, at the time that transfer and trade are proposed. The proposal (CoP16 Prop. 11) from the United Republic of Tanzania at CoP16 is a case in point.

Practicality of implementation

The Parties could, in theory, agree to the substance of this proposal in a Resolution or Decision, rather than as an annotation to the Appendices. Even if they were to do so, it is difficult to see how this would prevent a Party submitting a relevant proposal under the terms of Articles XV and XVI of the Convention text at any time, should it decide to do so. Unless the text of the Convention were amended (as is allowed by Article XVII), it would appear that the Secretariat and the Parties would then be obliged to follow the procedures set out in the appropriate Articles to consider, and if necessary vote, on the proposal.

Moreover, were the substance of this proposal to be accepted as a Decision, a Resolution or an annotation to the Appendices, any Party could submit a revised version for consideration at any meeting of the CoP (or, if an annotation, at any time), creating a challenge to its sustained implementation. This proposal is itself intended to amend an annotation that was agreed at CoP14 to stand for nine years from the time of sale of the ivory referred to in paragraph g) of annotation 5 (i.e. until Nov 2017, as the sale took place in Nov 2008), demonstrating the difficulty of sustaining an agreement of this kind.

Transfer of West African Manatee *Trichechus senegalensis* from Appendix II to Appendix I

Proponent: Benin, Senegal, Sierra Leone

Summary: The West African Manatee *Trichechus senegalensis* is a herbivorous aquatic mammal found in coastal and estuarine habitats, coastal lagoons and river systems over a wide area of western Africa from Mauritania to Angola, extending as far inland as Mali, Niger and Chad. There are 21, possibly 22, range States. The species is one of three extant members of the genus *Trichechus*. Life history parameters are poorly known; females of the closely related Caribbean Manatee *T. manatus* produce a single calf on average once every 2.5 years, though this figure varies greatly, and mature at around four to five years. Florida Manatees *T. manatus* and Dugongs *Dugong dugon* can be long-lived (up to 60–70 years), though approximately 40 years may be a better estimation for the West African Manatee. The West African Manatee is difficult to survey and there are few recent population estimates. However, based on those that have been conducted, the population is believed to have declined and several local populations have been extirpated. The population is under pressure from hunting for meat and oil, incidental by-catch, and the destruction and fragmentation of habitat from mangrove harvesting, pollution and dams that restrict the movement and isolate some populations. Nearly 300 West African Manatee were estimated to be accidently captured annually in Cameroon alone. No reliable population estimate has been made based on quantitative data, but it may be that there are fewer than 10 000 individuals. The species was assessed by IUCN as Vulnerable in 2008, based on a high probability of a 30% or more projected population decline within three generations (taken as 90 years).

Hunting pressure is believed to be high. Manatee products, chiefly meat and oil, are used domestically but are also believed to be traded across national borders within West Africa. Legislation in all range States currently prohibits trade in any part of the West African Manatee but is reported to be largely ineffective, mainly due to the weak capacity and lack of resources in enforcement agencies.

The West African Manatee was first included in Appendix II in 1975; the two other manatee species were included in Appendix I in the same year. From 2000 to 2010, the CITES trade database recorded 27 wild live animals of the species in international trade, in addition to 120 specimens and a small number of bones, skins and other derivatives, mainly for scientific purposes and zoos. Any cross-border trade within western Africa goes unrecorded.

The proposal seeks to transfer West African Manatee from Appendix II to Appendix I in accordance with biological criteria A i) and v), and C ii) in *Resolution Conf. 9.24 (Rev. CoP15).*

Analysis: The West African Manatee does not have a restricted range. There is no reliable global population estimate for the species. It is thought possible that the current population may number fewer than 10 000, however, it seems unlikely that it would be considered small under the guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15).* There are no historic or recent data on population trends, although there is no indication that the species is considered to have undergone a recent decline that would be considered marked under the guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)*.

Annex 1 of *Resolution Conf. 9.24 (Rev. CoP15)* also refers to a marked decline in the population size in the wild projected on the basis of any one of a number of factors. Annex 5 of the Resolution notes that projection involves extrapolation to infer likely future values. The numerical guidelines in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)* do not explicitly address projected future declines and give no indication as to how such declines might be assessed within the context of the criteria for inclusion in Appendix I. Any predictions of future changes in the West African Manatee population remain conjectural. The basis for the current IUCN Red List Categorization of the species as Vulnerable (published in 2008), taking all available information into account, was a view that the most likely decline over the next three generations (taken as 90 years) would be more than 30% but less than 50% (as the latter in this case would have led to a categorization of Endangered under criterion A2 of the IUCN Red List Categories and Criteria (ver 3.1)). If it is assumed that the guideline figures in Annex 5 to *Resolution Conf. 9.24 (Rev. CoP15)* for a marked recent rate of decline could also be applied to a projected future decline, then on the basis of the

scant information available, this decline would be less than that suggested as a marked decline in the Resolution.

The species is hunted for meat and oil, some of which is said to be traded across borders within West Africa, although this trade goes unregulated and unreported. Very limited international trade under CITES has been reported since the species was listed in Appendix II in 1975, notably a small number of live individuals as display animals and some skins. All domestic and international trade has been prohibited under legislation in all range States. The species has a relatively low productivity and harvesting may be having a negative impact on the species along with other threats. However, from the scant information available it would appear unlikely that West African Manatee meets the criteria for inclusion in Appendix I.

Deletion of Guadalupe Caracara *Caracara lutosa* from Appendix II

Proponent: Mexico

Summary: The Guadalupe Caracara *Caracara lutosa* was a falcon endemic to the 240 km^2 Guadalupe Island in the Gulf of California, Mexico. It was described in 1875 but by 1889 it was thought to have been extirpated from the island as a result of persecution from local goat farmers protecting their livestock through poisoning and hunting. However, eleven individuals were reportedly collected in 1900. A survey in 1906 failed to locate a single individual, and more recent surveys through the 20th century have found no individuals. The species is classified on the IUCN Red List as Extinct.

Caracara lutosa was listed in Appendix II in 1975 as part of the listing for all Falconiformes, of which all species are included in either Appendix I or II except for *Sarcoramphus papa,* listed in Appendix III by Honduras in 1987. The Guadalupe Caracara was one of three species in the genus *Caracara*¸ and was similar in appearance to the two others *Caracara cheriway* (Northern Crested Caracara) and *Caracara plancus* (Southern Crested Caracara), both extremely widespread birds in the Americas, neither of which is considered threatened. There has been some trade in *Caracara plancus* with 323 live birds reported as exported since 1977, around 14% of these being reported as hatched or bred in captivity. Minimal trade has been recorded for *Caracara cheriway* since 2008 (one live, one captive-bred body and four scientific specimens).

In the highly unlikely event of the species being rediscovered it would be protected by Mexican legislation under the Ley General de Vida Silvestre which would only authorize the use of specimens of species at risk when prioritizing collection and capture for restoration activities, restocking and reintroduction.

Analysis: *Caracara lutosa* was last recorded in the wild at the start of the twentieth century. Since then surveys conducted over an appropriate time-frame have not found any specimens in the wild; it is now considered to be extinct. It has not been recorded in international trade since it was listed in Appendix II as part of the listing of all Falconiformes. It is said to have resembled two other caracaras, one of which seems to be in moderate demand internationally. In the highly unlikely event of its rediscovery, Mexican legislation would prevent its collection for purposes other than conservation and would prohibit its export for commercial purposes. It does not meet the criteria for inclusion in Appendix II. However, because *Caracara lutosa* was listed in Appendix II as part of the listing of all Falconiformes (at a time when it was undoubtedly already extinct), it is not clear that removing the species from the Appendices would simplify the implementation of the Convention.

Deletion of Grey Junglefowl *Gallus sonneratii* from Appendix II

Proponent: Switzerland, as Depositary Government, at the Request of the Animals Committee (prepared by New Zealand)

Summary: The Grey Junglefowl *Gallus sonneratii* is endemic to India and inhabits subtropical and tropical moist forests, bamboo thickets, open woodlands and dry deciduous shrubland. The species has a wide range, estimated at around 1 million km^2. It is believed to be affected by habitat loss and by some illegal hunting for its meat for domestic consumption. Good populations are likely now to be mainly confined to protected areas. The overall population is believed likely to be declining, though not at a rate fast enough to merit classifying the species as threatened. It was assessed as of Least Concern in 2012 by BirdLife International.

Gallus sonneratii was one of several species of Galliform included in Appendix II in 1975 owing to concerns about the international trade in their feathers – the males possess long neck hackles (elongated feathers) with very distinctive patterning, which are in demand for making fishing flies. In the period 2000–2010, nearly 240 000 *G. sonneratii* feathers were recorded in the CITES trade database as in international trade; 99% of these were reported as coming from captive-bred birds and virtually all exported from non-range States. Over half were exported from the UK to the USA in 2001. Very little trade in feathers has been reported since 2004. There is a small amount of trade in live, captive-bred birds. The species is reported to be easy to keep in captivity. No other species of *Gallus* is listed in the Appendices.

The species is legally protected from hunting in India. There are records of seizures of illegal shipments from India in the CITES Trade database but no records of legal commercial export. There is additional evidence to suggest some illegal trade in feathers from wild sourced birds in India to Europe.

Gallus sonneratii was one of 18 species of Galliformes chosen to be reviewed between CITES CoP13 and CoP15 as part of the Periodic Review of the Appendices. At AC26 (Geneva, 2012) the Animals Committee recommended that *Gallus sonneratii* should be deleted from Appendix II and requested Switzerland, as Depositary Government to submit this proposal.

Analysis: The Grey Junglefowl has been listed in Appendix II since 1975. It has a large though evidently fragmented range in India in which it is regarded as at least locally common. The population is thought likely to be declining, albeit slowly, and the species is not currently considered threatened. The major use of the species internationally is to supply feathers for use in fly-fishing. It is easily bred in captivity and all legal supply of feathers is derived from birds captive-bred outside the range State. The species is legally protected in India, although is subject to illegal harvest, primarily for local consumption as food, with evidence of some illegal export of feathers and skins, although this is believed to be at a relatively low level. It is unlikely that deletion of the species from the Appendices would result in it qualifying for inclusion in the Appendices in the near future. The species has not been subject to a recommendation under the provisions of the Review of Significant Trade within the last two intervals between meetings of the Conferences of the Parties.

Deletion of Blood Pheasant *Ithaginis cruentus* from Appendix II

Proponent: Switzerland, as Depositary Government, at the request of the Animals Committee (prepared by New Zealand)

Summary: The Blood Pheasant *Ithaginis cruentus*, a round partridge-shaped pheasant (40-45 cm in length) is found in Bhutan, southwestern and central China, northern India, extreme northern Myanmar, and Nepal. It is the only pheasant in the genus *Ithaginis*. The species has a very large range estimated at between 650 000 and 800 000 km^2 although is believed to occur only patchily within this. There are no overall population estimates; it is considered to be locally common in some areas but rare in others. Blood Pheasants are hunted locally for food and the species may in some areas be targeted for its bright plumage as well as opportunist egg collection. Normally a fairly tame bird, where it is hunted it is wary. The species is also believed to be affected by habitat loss and degradation caused by timber extraction for firewood, overgrazing and agricultural conversion. The global population is suspected to be slowly declining but not sufficiently rapidly to approach the thresholds used by BirdLife International and IUCN as criteria for listing as threatened. It is currently classified by BirdLife and IUCN as Least Concern.

The species was listed in CITES Appendix II on 1st July 1975 along with a number of other Phasianidae species, due to concerns about the international trade in live specimens for private aviary holdings and in feathers for use in the manufacture of fly-fishing lures. There has been little recorded trade in the species since the listing, a total numbering perhaps in the region of 100 live specimens from captive and wild sources have been recorded. Since 2000 only four trophies have been reported in trade. There is apparently limited demand by collectors and the species is not known to breed well in captivity.

It is difficult to confuse *Ithaginis cruentus* with other species. The male is very distinctive. The less brightly coloured female is still readily recognisable because of its erectile crest, which means that it cannot be confused with female *Tragopan spp.* or Koklass Pheasant *Pucrasia macrolopha.*

Analysis: The Blood Pheasant has a very large range. There are no recent population estimates, but the species is considered to be at least locally common and is classified by IUCN as Least Concern. There has been very little reported trade in this species since its inclusion in the CITES Appendix II in 1975 and no evidence of significant international demand. There are no records of illegal trade in the CITES trade database, nor has the species been subject to a recommendation under the provisions of the Review of Significant Trade to improve its conservation status within the last two intervals between meetings of the Conference of the Parties. It seems unlikely that deletion from the Appendices would stimulate trade such that it would qualify for inclusion in the Appendices in the near future. It would appear therefore that the species does not meet the criteria for inclusion in Appendix II and that the precautionary measures in Paras 4 and 5 of Annex 4 to *Resolution Conf. 9.24 (Rev. CoP15)* Annex 4 Paragraphs 4 and 5 are met.

Deletion of Imperial Pheasant *Lophura imperialis* from Appendix I

Proponent: Switzerland, as Depositary Government, at the request of the Animals Committee (prepared by France)

Summary: The Imperial Pheasant *Lophura imperialis* is a rare dark-blue pheasant known in the wild from just four records from Viet Nam. First described in 1924 from a single live pair, it is now accepted as being an occasional naturally-occurring hybrid between Silver Pheasant *L. nycthemera* and Edward's Pheasant *L. edwardsi*. A bird captured in 1990 was likely a hybrid between *L. nycthemera* and Vietnamese Pheasant *L. hatinhensis* which itself has been found to be an inbred form of *L. edwardsi*. There have been no other confirmed reports of Imperial Pheasant in the wild. A captive stock was established in Europe and the USA from a pair caught in 1923, which were subsequently cross-bred with *Lophura nycthemera* to create new stock. Birds with Imperial Pheasant phenotype have also been created in captivity by hybridizing Silver Pheasant and Edward's Pheasant.

Lophura imperialis and *L. edwardsi* were both listed in CITES Appendix I in 1975. Since 1975 international trade in 31 *L. imperialis* individuals has been reported in the CITES trade database, all but four declared as captive-bred. These four comprise animals exported before 1999 from non-range States with no source code included in the record. There is no reason to suppose that these were not also captive-bred.

Lophura imperialis is proposed for removal from Appendix I on the basis that it is no longer recognised as a species. The proposal notes that under *Resolution Conf. 10.17 (Rev. CoP15)* on animal hybrids the Imperial Pheasant would still be considered as included in Appendix I because one of its parents (*L. edwardsi*) is in that Appendix. There is therefore no need to transfer the taxon to Appendix II before then removing them from the Appendices, as would normally be the case under the precautionary measures in para A 1 to Annex 4, of *Resolution Conf 9.24 (Rev. CoP15*).

The proponent has also asked for an Amendment in the Annex to *Resolution Conf 12.11 (Rev CoP15)* regarding the reference standard for birds adopted by the Conference of the Parties: "Dickinson, E. C. (ed.) (2003): *The Howard and Moore Complete Checklist of the Birds of the World.* Revised and enlarged 3rd Edition. 1039 pp. London (Christopher Helm). [for all bird species – except for the taxa mentioned below]" by replacing "for all bird species – except for the taxa mentioned below" with "for all species birds, except *Lophura imperialis* and taxa mentioned below". *Lophura imperialis* will not appear in the upcoming 4th edition of the publication "*The Howard and Moore Complete Checklist of the Birds of the World*" (scheduled for publication in 2012/2013), as it has been permanently removed from the taxonomy of birds.

At its 26th meeting (Geneva, March 2012) and in the context of the Periodic Review of the Appendices, the Animals Committee recommended preparing a proposal to delete *Lophura imperialis* from Appendix I because of its status as a hybrid of (see document AC26 Doc. 13.2.1 and its Annex). France volunteered to prepare such proposal.

Analysis: Based on the low number of individuals found, despite search efforts, it seems unlikely that *L. imperialis* forms the 'distinct and stable populations in the wild' required allowing hybrids to be specifically included within the Appendices and as such would appear not to be eligible for inclusion in its own right. Under *Resolution Conf. 10.17 (Rev. CoP15)*, if *L. imperialis* were deleted from the Appendices, specimens would still be treated as if included in Appendix I because one of its parents (*L. edwardsi*) is in that Appendix.

Transfer of Caspian Snowcock *Tetraogallus caspius* from Appendix I to Appendix II

Proponent: Switzerland, as Depositary Government, at the request of the Animals Committee (prepared by New Zealand)

Summary: The Caspian Snowcock *Tetraogallus caspius* is a large (55-65 cm) gamebird found in mountains in Armenia, Azerbaijan, Georgia, Iraq, Islamic Republic of Iran, Turkey and Turkmenistan. It is one of five species of snowcock in the genus *Tetraogallus,* part of the pheasant family (Phasianidae). The species has a very large range, estimated at over 300 000 km^2. In 2004 the population was estimated by BirdLife International at between 10 000 and 50 000 individuals (6700-33 000 mature individuals). There is said to be some harvest for local use, with over-hunting and habitat degradation from over-grazing believed to have some impact on the species. The population is thought to be declining but not sufficiently rapidly to approach thresholds used by BirdLife and IUCN as criteria for listing as threatened. It is currently classified by BirdLife and IUCN as Least Concern.

The species was included in CITES Appendix I in 1975 when the Convention first came into force. It was one of a number of species of Phasianidae listed at that time, including the Tibetan Snowcock *Tetraogallus tibetanus*, also listed in Appendix I. Since then no trade in it has been recorded (although no commercial trade would be expected, given that the species was listed in Appendix I). On the basis of available information it appears that there is little demand for the species in international trade.

The Caspian Snowcock can be clearly distinguished by its plumage from the Tibetan snowcock *Tetraogallus tibetanus*, itself the subject of a proposal for transfer from Appendix I to II (CoP16 Prop. 19). It resembles the three other *Tetraogallus* species (*T. caucasicus*, *T. altiacus* and *T. himalayensis*) although both adults and juveniles of *T. capsius* can be distinguished reasonably easily from these by differences in plumage. None of these species is listed in the Appendices.

The proponents state that they are proposing to transfer *Tetraogallus caspius* from Appendix I to Appendix II, in accordance with provisions of *Resolution Conf. 9.24 (Rev. CoP15)* Annex 4 precautionary measures A1 and A 2a/b. This suggests that the intention is to remove the species from the CITES Appendices after an appropriate period of monitoring of any impact of trade on the species whilst it is in Appendix II. The proponents have been requested by the Animals Committee to submit this proposal, the species having been subject to the Periodic Review process.

Analysis: It would appear that the Caspian Snowcock does not meet the biological criteria for inclusion in Appendix I. No trade has been recorded since its inclusion in Appendix I in 1975 and it is not known to be in demand for international trade. The only other *Tetraogallus* species currently listed in the Appendices is the Tibetan Snowcock *Tetraogallus tibetanus*, itself proposed for transfer from Appendix I to Appendix II (CoP16 Prop. 19). The two species can be clearly distinguished by their plumage. The transfer of the Caspian Snowcock to Appendix II is unlikely to stimulate trade in, or cause enforcement problems for any other species included in Appendix I regardless of whether the proposal regarding *T. tibetanus* is accepted. The proposal thus appears to meet the precautionary measures in *Resolution Conf. 9.24 (Rev. Cop15)* Annex 4 A1.

Transfer of Tibetan Snowcock *Tetraogallus tibetanus* from Appendix I to Appendix II

Proponent: Switzerland, as Depositary Government, at the request of the Animals Committee (prepared by New Zealand)

Summary: The Tibetan Snowcock *Tetraogallus tibetanus* is a large (45-55 cm) gamebird widely distributed in the high mountains of central Asia, from the extreme east of Tajikistan, through extreme northern India, Nepal, south western China, Bhutan, and the extreme north of Myanmar. It is one of five species of snowcock in the genus *Tetraogallus,* part of the pheasant family (Phasianidae). The species has a very large range at over 1 000 000 km^2. Although there are no recent population estimates its wide range suggests that there are several hundred thousand individuals. There is no evidence of any substantial threats, although the glacial moraines that it inhabits at high altitude are expected to be more affected than other types of habitats by climate change. The population is believed to be stable and is currently classified by IUCN as Least Concern.

The species was listed in CITES Appendix I on 1 July 1975 when the Convention first came into force. It was one of a number of species of Phasianidae listed at that time, including the Caspian Snowcock *Tetraogallus caspius*, also listed in Appendix I. Since then almost no trade in it has been recorded; there has only been one record of a captive-bred bird being imported by the UK from the US in 1981 (although no commercial trade would be expected, given that the species was listed in Appendix I). On the basis of available information it appears that there is little demand for the species in international trade.

The Tibetan Snowcock can be clearly distinguished by its plumage from the Caspian Snowcock *Tetraogallus caspius*, itself the subject of a proposal to transfer it from Appendix I to II (CoP16 Prop. 18). In appearance it is similar to *T. himalayensis* and *T. altiacus*; however, they are smaller and have distinct markings that differentiate them. Neither of these two species is listed in the Appendices.

The proponents state that they are proposing to transfer *Tetraogallus tibetanus* from Appendix I to Appendix II, in accordance with provisions of *Resolution Conf. 9.24 (Rev. CoP15)* Annex 4 precautionary measures A1 and A 2a/b. This suggests that the intention is to remove the species from the CITES Appendices after an appropriate period of monitoring of any impact of trade on the species whilst it is in Appendix II. The proponents have been requested by the Animals Committee to submit this proposal having been the subject of the Periodic Review process.

Analysis: It would appear that the Tibetan Snowcock does not meet the biological criteria for inclusion Appendix I. No trade has been recorded since its listing in Appendix I in 1975 and *Tetraogallus tibetanus* is not in known demand for international trade. The only species of snowcock that is currently listed in Appendix I is the Caspian Snowcock *Tetraogallus caspius*, itself the subject of a proposal to transfer to Appendix II (CoP16 Prop. 18). Regardless of whether that proposal is accepted, the two species can be clearly identified by their plumage features and therefore the transfer of the Tibetan Snowcock to Appendix II is unlikely to stimulate trade in, or cause enforcement problems for any other species included in Appendix I thus meeting the precautionary measure A 2a of Annex 4 *Resolution Conf. 9.24 (Rev. CoP15)*.

Transfer of Attwater's Prairie Chicken *Tympanuchus cupido attwateri* from Appendix I to Appendix II

Proponent: Switzerland, as the Depositary Government, at the request of the Animals Committee (prepared by the United States of America)

Summary: Attwater's Prairie Chicken *Tympanuchus cupido attwateri* is a subspecies of prairie-chicken endemic to the USA where it is now present in three locations in Texas. It is one of two extant subspecies of *T. cupido,* the other being *Tympanuchus cupido pinnatus.* The nominate subspecies *T. cupido cupido* is extinct. The subspecies has not been assessed for the IUCN Red List, but is listed as Endangered under the U.S. Endangered Species Act. The population occupies a very small geographic range which is fragmented thus isolating each sub-population. Prior to the 1890s, the population numbered nearly one million individuals, but had declined to 46 individuals by 2012. This extreme decline has largely been due to loss of habitat (in 1991 it was estimated that less than 1% of coastal prairie grasslands were in a habitable condition for this subspecies), as well as hunting pressure in the early part of the 20th century. The subspecies is intensively managed, relying on the reintroduction of captive-bred birds to maintain a wild population. The species as a whole remains relatively widespread and abundant in northern-central parts of the USA, although its range has contracted markedly and numbers declined in the past century. It is currently classified as Vulnerable by IUCN. A population estimate of around 700 000 birds was made in 2004. *Tympanuchus cupido* is one of three species in the genus *Tympanuchus*. All are native to North America (Canada and USA).

Under the US Endangered Species Act a permit is required for import and export. The subspecies is managed by Texas Parks and Wildlife Department under corresponding State legislation and is not subject to harvest.

Tympanuchus cupido attwateri was listed in CITES Appendix I in 1975, since then there has been no reported trade in wild specimens, although given its Appendix-I listing, no commercial trade would be expected. There is limited trade in live birds and specimens of other *Tympanachus*, including *T. cupido.*

Attwater's Prairie Chicken was included in the Animal's Committee's Periodic Review process. The range State supports the Animal Committee's decision that prior to the taxon being removed from the Appendices, the precautionary measures described in Annex 4 para A 1 of *Resolution Conf. 9.24 (Rev. CoP15)* should be complied with and the taxon be transferred to Appendix II for two intervals between meetings of the Conference of the Parties to allow for monitoring of any impact of trade.

Analysis: It would appear that *Tympanuchus cupido attwateri* still meets the biological criteria for inclusion in Appendix I, having an extremely small and fragmented population and a restricted area of distribution. However, the taxon is intensively managed and covered by domestic legislation and there is no evidence of any international demand for specimens. Thus it would appear that the precautionary measures in Annex 4 A2a are met.

The current listing of *Tympanuchus cupido attwateri* is inconsistent with recommendations for split-listing set out in Annex 3 of *Resolution Conf. 9.24. (Rev. CoP15)*, which advise that when split-listings occur they should be on the basis of national or regional populations rather than subspecies, and that split-listings that place some populations of a species in the Appendices, and the rest outside the Appendices, should normally not be permitted.

Deletion of Imperial Woodpecker *Campephilus imperialis* from Appendix I

Proponent: Mexico

Summary: The Imperial Woodpecker *Campephilus imperialis,* the world's largest woodpecker, was formerly distributed throughout the Sierra Madre Occidental of Mexico where the population may historically have numbered around 8000 birds. Extensive habitat destruction through logging has reduced suitable habitat to less than 1% of its former range. This and hunting have led to collapse in the population. The species has not been recorded with certainty since 1956, despite extensive and prolonged searches within its former range. Thorough mapping and analysis of remaining habitat has been conducted and the results do not provide much hope that any population has been able to survive. However, unconfirmed sightings persist – the most recent in 2005 – and IUCN and BirdLife International consider that it cannot yet be presumed to be Extinct as the degree to which individuals can use sub-optimal regenerating forest is unknown, and it remains possible that some individuals survive. Any remaining population is likely to be tiny, and for these reasons it is treated by IUCN as Critically Endangered (Possibly Extinct).

Campephilus imperialis was listed in Appendix I in 1975. Since then there has only been one record of re-export of four specimens for scientific purposes from the USA back to Mexico in 2006. There are about 160 stuffed specimens worldwide. The only other woodpecker in the CITES Appendices is the Appendix-I listed *Dryocopus javensis richardsi,* a subspecies of the Asian White-bellied Woodpecker that occurs in the Democratic People's Republic of Korea. This taxon resembles the Imperial Woodpecker in that both are large black-and-white woodpeckers in which the male has a red crest.

In the unlikely event of the species being rediscovered it would be protected by Mexican legislation under the Ley General de Vida Silvestre which would only authorise the use of specimens of species at risk when prioritising collection and capture for restoration activities, restocking and reintroduction.

The Animals Committee at its 26th Meeting (Geneva, April 2012), considered that the precautionary measures in Annex 4 of *Resolution Conf. 9.24 (Rev CoP15)* regarding the transfer of Appendix-I listed species to Appendix II before their removal from the Appendices are not considered applicable in this case, and asked Mexico to prepare the proposal to remove the species from the Appendices at CoP16.

Analysis: Despite recent unconfirmed sightings, the Imperial Woodpecker *Campephilus imperialis* is almost certainly extinct.
Resolution Conf. 9.24 (Rev. CoP15) notes in Annex 4 (Precautionary measures) that no species listed in Appendix I shall be removed from the Appendices unless it has been first transferred to Appendix II, with monitoring of any impact of trade on the species for at least two intervals between meetings of the Conference of the Parties (paragraph A. 1). It is not clear that this is intended to apply to species that are definitely or almost definitely extinct. The Resolution also notes: "Species that are regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery; these species should be annotated in the Appendices as 'possibly extinct' (paragraph D)". In the highly unlikely event that the Imperial Woodpecker were to be rediscovered, it would be protected by Mexican legislation under the Ley General de Vida Silvestre, which would not permit trade in this species.

Deletion of Laughing Owl *Sceloglaux albifacies* from Appendix II

Proponent: New Zealand

Summary: The Laughing Owl *Sceloglaux albifacies* was a tall owl (35-40 cm) with relatively long legs, endemic to New Zealand. It was the only species in the genus *Sceloglaux*. The last confirmed sighting of the species was 1889. Unconfirmed sightings persisted until the 1960s; however, over the past century exhaustive surveys have been undertaken throughout its historical range in known or suspected habitat, at appropriate times (night and day) throughout the year, all of which have failed to confirm the presence of the species. It is believed that the causes of its extinction were habitat loss through grazing or burning, predation by introduced mammals and hunting by humans. It is now accepted as Extinct by IUCN and BirdLife International.

The Laughing Owl was included in the CITES Appendices in 1979 as part of the listing of the whole Order Strigiformes, although it was almost certainly already extinct at that time. Since then there has been one record of trade in the CITES trade database, but these are now known to have been misreported White-faced Scops Owl *Ptilopsis leucotis*.

In the unlikely event of the species being rediscovered, it would be covered by New Zealand's Wildlife Act 1953 which would prevent the hunting, killing, taking, trapping, capturing, or trading of the species by any means.

Analysis: *Sceloglaux albifacies* is almost certainly extinct. The one record of trade in the CITES trade database is an error. It was distinctively different from the other three owl species found in New Zealand and it is unlikely that removal of the species would stimulate the trade of look-alike species under the name of this species. It therefore does not meet the criteria for inclusion in Appendix II. In the highly unlikely event of its re-discovery it would automatically become protected according to New Zealand's Wildlife Act 1953, preventing the hunting, killing, taking, trapping, capturing, or trading of the species by any means.

However, the Laughing Owl forms part of a generic listing of a higher taxon (the Order Strigiformes) in the Appendices. At the time the Order was listed, the species was almost certainly already extinct. Removing it would likely result in an annotation to the current listing for Strigiformes. It is not clear how this will simplify implementation of the Convention.

Transfer of the American Crocodile *Crocodylus acutus* population in the Bahia Cispata of Colombia from Appendix I to Appendix II

Proponent: Colombia

Summary: The American Crocodile *Crocodylus acutus* is a widely distributed New World member of the family Crocodylidae, found in 17 range States in southern North America, Central America, the Caribbean and northern South America. It was assessed at species level by IUCN in 2012 as Vulnerable. In Colombia, it is found in a number of mangrove swamps and river deltas, including the Bay of Cispata, municipality of San Antero, Department of Cordoba. The proposal applies to this population only, delimited by the perimeter of the Integrated Management District (IMD).

Cispata Bay mangroves extend over a total area of 115 km^2, within which around 14 km^2 is considered to be suitable habitat for *Crocodylus acutus*. Since 2003 the species has been the subject of an active management programme involving the construction of artificial nesting areas and head-starting based on release of juveniles hatched from eggs taken from the wild. Nearly 3000 individuals were released in total between 2003 and 2011. Population trends are unclear. Surveys between 2003 and 2010 variously counted between 67 and 122 animals with no obvious trend. A survey in 2011 counted just over 200 individuals; nearly one third of these were in the smallest size category, in which few animals were recorded in previous surveys. The number of recorded nests increased from 15 to 67 in the period 2003-2005. Subsequently (i.e. during 2006-2012) it has fluctuated between 50 and 60 per year. There are some indications of increasing average clutch size (from around 25 eggs per nest in 2004-2006 to around 30 in 2010-2012), associated with an increasing average size of reproductive females in the population. Annual hatching rate has varied from 40% to 80%, averaging around 65%, although has declined in the last two years.

In 2006, Cispata Bay mangrove forests and surrounding areas were declared an Integrated Management District of natural resources (IMD). A management plan for the conservation of *Crocodylus acutus* in the Cispata Bay IMD has been drawn up, including activities such as monitoring, research, practical conservation and environmental education. Community participation is a major component of the Cispata Bay conservation programme, including ex-hunters of crocodiles, which have formed a conservation co-operative ASOCAIMAN. There are plans to use this as a pilot for developing national conservation of the species in the future. In 2012 Colombia introduced a new policy for the integrated management of biodiversity (PNGIBSE) which aims to ensure the conservation and equitable sharing of benefits derived from use of biodiversity. The supporting statement estimates potential skin production and export from the Cispata Bay population at 1500 to 4500 skins per year.

The Colombian population of *Crocodylus acutus* was originally included in CITES Appendix II in 1975 and transferred to Appendix I in 1981. Commercial hunting of *Crocodylus acutus* has been banned in Colombia since the late 1960s. The proposal seeks to transfer the population of the Bay of Cispata to Appendix II with a note stating the intentions of the project are predominantly conservation; if there is a surplus of animals in the immediate future they could be used for commercial issues, and indicating an intention to submit a ranching proposal to CoP17.

There is an international market for *Crocodylus acutus* skins. Colombia exports predominantly raw and salted products produced in six CITES-registered captive-breeding facilities. Principal destinations for these skins are France, Italy, Japan and Singapore, and between 2001 and 2011 importers reported importing around 3500 skins from Colombia, nearly 60% of these in 2011.

Analysis: The *Crocodylus acutus* population of Cispatá Bay, Colombia, remains very small, with a restricted range and occurrence at few locations. Population trends are unclear; after an initial increase in the number of nesting females, there has been no further increase in the past seven years despite considerable management efforts, including head-starting. It would appear that the population still meets the biological criteria for inclusion in Appendix I as set out in Annex 1 to *Resolution Conf. 9.24 (Rev. CoP15)*.

Adoption of the proposal would result in the split listing of Colombia's population of Crocodylus acutus; Annex 3 of *Resolution 9.24 (Rev. CoP15)* states that when a split-listing does occur, it should generally be on the basis of national or regional populations.

Para A 2 of Annex 4 of the Resolution sets out a series of precautionary measures regarding transfer of species from Appendix I to Appendix II. It is not apparent that these are met in this case. The species is in demand for trade, with export of skins of captive-bred *C. acutus* from Colombia recorded up to 2011. The proposal is not a ranching proposal, and no export quota or other special measure has been proposed. Management measures are set out in general terms in the supporting statement but enforcement controls, for example with regard to the tagging of skins for export, are not specified. It is thus not clear how skins from this source might be distinguished from those of other wild *C. acutus* in Colombia, which would remain in Appendix I. The basis for the suggested productivity of the population in supplying skins for export is not clear.

Transfer of the Thai population of Salt-water Crocodile *Crocodylus porosus* from Appendix I to Appendix II (with a zero quota for wild specimens)

Proponent: Thailand

Summary: The Salt-water Crocodile *Crocodylus porosus* is a very large species formerly widespread in South and Southeast Asia and Australasia. It is extinct or nearly so in some range States, strongly depleted in most, but retains good populations in the island of New Guinea and Australia. It is not considered threatened at the global level.

The Thai population of Salt-water Crocodiles used to be found in estuarine and coastal areas adjoining the Andaman Sea and the Gulf of Thailand. Once feared extinct in Thailand, sightings and reports in recent years have shown that the species persists in low numbers at scattered locations, almost all within protected areas. It has been suggested that the population may number 200 or more, but it is not known what the basis for this estimate is. Depletion in Thailand and elsewhere was caused mainly by excess hunting for skins, and also by habitat loss or modification. The species is also persecuted as a danger to people and individuals were in the past taken from the wild to stock farms.

The entire species was listed in CITES Appendix I in 1985 except for the populations of Australia, Indonesia and Papua New Guinea, which were included in Appendix II at that time. Thailand's captive population of *Crocodylus porosus* could number in the thousands. Registered captive-breeding crocodile farms are permitted to export specimens of species listed in Appendix I as if they were of species included in Appendix II. As of late 2012 there were 14 farms in Thailand registered with CITES as breeding *C. porosus*. Thailand reported an average of 1850 skins exported per year from captive sources between 2006 and 2010.

The proponent proposes the transfer of the Thai population of *Crocodylus porosus* from Appendix I to Appendix II (with a zero quota for wild specimens), on the basis of Article II, Paragraph 2 (A), and in accordance with the preventative measures of the appropriate management controls included in Annex 4 (2B) of the *Resolution Conf. 9.24 (Rev. CoP 15).*

Analysis: Available evidence confirms that the species is not extinct in Thailand but persists at a handful of sites. Although most or all of these sites are within protected areas, the population evidently remains extremely small and fragmented and would appear still to meet the biological criteria for inclusion in Appendix I. There are clearly high levels of international demand for skins from this species, currently met by long established captive-breeding facilities, of which there are currently 14 registered in Thailand as breeding *C. porosus*. Specimens originating in these facilities are already treated as if they were specimens of species included in Appendix II.

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

Proponent: Thailand

Summary: The Siamese Crocodile *Crocodylus siamensis* is among the most threatened crocodilians with a global wild population almost certainly comprising fewer than 1000 mature individuals. It was formerly widely distributed in Southeast Asia and apparently common in some areas until the mid 20th century when brought to the verge of global extinction mainly by hunting for skins. Recent surveys have shown that the species persists in parts of the former world range, with remnant populations in Cambodia, Indonesia (Kalimantan), Lao PDR and Thailand. There is a reintroduced population in Viet Nam. It is currently classified by IUCN as Critically Endangered.

The species was formerly widely distributed in suitable habitat in Thailand. The current population is estimated at up to 200 individuals in a small number of scattered localities in central and western Thailand, most notably in Bueng Boraphet Non-hunting area, which may hold around half the total. Fewer than five wild nests have been located in Thailand during the five years up to 2012.

Very large numbers (~ 600 000) are held in captive breeding farms in Thailand. Twenty-four registered captive-breeding operations are permitted to export specimens as if they were specimens of species included in Appendix II. Thailand reported an average of almost 33 000 skins exported per year from captive sources between 2006 and 2010. Very large numbers of live animals are also exported from Thailand and there is concern that this trade is more difficult to regulate than the skin trade. Some individuals have been released in the wild in Thailand although with no evidence as yet of expanding populations.

The proposal to transfer the Thai population of *Crocodylus siamensis* from Appendix I to Appendix II with a zero quota for wild specimens is on the basis of Article II, paragraph 2 (a), and in accordance with the preventative measures of the appropriate management controls included in Annex 4 (2b) of the *Resolution Conf. 9.24 (Rev. CoP15*).

Analysis: The Thai population of the Siamese Crocodile remains extremely small and fragmented. The viability of existing groups is poorly known and recorded breeding success is extremely low. The species would therefore appear still to meet the biological criteria for inclusion in Appendix I. Skins from this species are in demand for international trade, currently met by skins from long established captive-breeding facilities, of which there are at present 24 registered in Thailand as breeding *C. siamensis*. Specimens originating in these facilities are already treated as if they were specimens of species included in Appendix II.

Inclusion of all species of New Zealand geckos in the genus *Naultinus* in Appendix II

Proponent: New Zealand

Summary: *Naultinus* is a genus of lizards in the family Diplodactylidae endemic to New Zealand comprising eight described species, and an additional species, *Naultinus* "North Cape", which is yet to be formally described. *Naultinus* spp. are characterized by ovoviviparity (live birth of young), low reproductive output (1-2 offspring per adult female per year), delayed maturity (2-4 years) and likely extreme longevity. Once widespread, their ranges are now highly fragmented due to habitat loss and modification. *Naultinus* populations continue to be affected by clearance of secondary shrublands for grazing and plantation forestry, predation from introduced mammals, illegal collection (at least in part to supply the international pet trade) and competition from introduced species for favoured food sources. Population sizes are extremely difficult to estimate, due in part to the geckos' arboreal and cryptic behavior, extremely good camouflage and weather-dependent activity, although it has been suggested that most species probably have a global population somewhere between 5000 and 30 000. Difficulties in assessing population sizes and trends may mean species are less threatened than they appear. Conversely, declines may not be noticed until they are very advanced. Studies have found local population densities of up to 40 and, exceptionally, 500 individuals per hectare; however, it is thought that most populations are at much lower densities. As of 2012, all *Naultinus* species except *N. rudis and N. tuberculatus* were considered "At Risk" under the New Zealand Threat Classification System, with populations assessed as declining at a rate of at least 10% over three generations. *N. rudis* and *N. tuberculatus* were considered Nationally Vulnerable based on an estimate of 15 or fewer populations each with 500 or fewer individuals and an expected continued decline of 10-50% over the next three generations.

The species that features most frequently in international trade is *N. gemmeus*. This has a wide extent of occurrence (over 50 000 km²) but its distribution within this area is severely fragmented, with two main known populations, on the Otago and Banks Peninsulas, the former estimated at around 1400 individuals. An overall population estimate of 12 000-20 000 has been suggested; however, its status in tall forest canopies towards the western edge of its range is largely unknown. One *N. gemmeus* population on the Otago Peninsula has been well-studied; a severe decline with a 95% reduction in 14 years from 1994 to 2008 is estimated, attributed to mammalian predation, habitat loss and poaching. The species was assessed as Near Threatened by IUCN in 2010.

Both the Otago and Banks Peninsulas have apparently been targeted by poachers in recent years. It is estimated that 100-200 specimens of *N. gemmeus* were harvested from the Otago Peninsula in one year, corresponding to a 7-14% of the estimated population there. Between 2009 and 2012 New Zealand border control agencies intercepted 24 live *N. gemmeus* being smuggled from the country. Specimens intercepted, photographed and returned to the wild at their original location have since been identified as advertised for sale on internationally-hosted reptile websites, indicating repeated illegal collection at the same site. Gravid females have been disproportionately represented in consignments seized from poachers (likely due to greater value, larger size and emergence behaviour). The geckos evidently command high prices in consumer countries.

Other species have been offered for sale on internet sites including *N. elegans*, *N. grayii*, *N. manukanus, N. rudis* and *N. stellatus*, although it is not clear whether these are from captive sources. *N. manukanus* was assessed as Data Deficient by IUCN in 2010; *N. rudis* was assessed as Lower Risk/least concern in 1996 by IUCN although the assessment is noted as in need of updating.

All *Naultinus* species share characteristics that make them desirable among enthusiasts. Distinguishing between the different *Naultinus* species is also problematic, with field identification commonly based on location rather than morphological features.

The entire genus *Naultinus* has been protected under New Zealand's Wildlife Act 1953 since 1981, prohibiting collection from the wild and commercial use. All endemic New Zealand gecko species were listed in CITES Appendix III on 28 May 2003. While legal trade in *Naultinus* has been minimal since CITES listing, illegal trade in *Naultinus* spp. is a concern.

The genus *Naultinus* is proposed for inclusion in Appendix II. *Naultinus gemmeus* is proposed under the criteria in Annex 2 a paragraph B of *Resolution Conf. 9.24 (Rev. Cop15)*, with the other members of the genus proposed under look-alike criteria (Annex 2 b) on the basis that enforcement officers are unlikely to be able to reliably distinguish between the various *Naultinus* species, especially between the uniformly green morphs of *N. gemmeus* and other species. The Proponent suggests that some other species may also meet the criteria in Annex 2 a paragraph B of *Resolution Conf. 9.24 (Rev. CoP15)*.

Analysis: *Naultinus* species are endemic to New Zealand where they are fully legally protected. The species, especially, *N. gemmeus,* are sought after in the international hobbyist trade and can command high prices in consumer countries. There is evidence of ongoing illegal trade in wild-caught animals. All species are believed to have fragmented distributions and populations that are slowly declining. The species have low productivity and there are some indications of at least local impacts from illegal collection. However, it is not clear what proportion of the population of any species is subject to such collection. Overall, there is insufficient information to determine whether regulation of trade (which is in any event illegal) is required to prevent any of the species becoming eligible for inclusion in Appendix I in the near future or whether harvest for trade is reducing any species to a level at which its survival might be threatened by continued harvesting or other influences.

The species resemble each other, and appear to be relatively easily distinguishable as a group from other geckos. If it were considered that any one of the species met the criteria for inclusion in Appendix II under Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)* then the other species in the genus would appear to meet the look-alike criteria in Annex 2 b.

Inclusion of the Mangshan Pit Viper *Protobothrops mangshanensis* in Appendix II

Proponent: China

Summary: The Mangshan Pit Viper *Protobothrops mangshanensis* is a snake endemic to south China. It has a small area of distribution in moist subtropical forest around Mt. Mang in the Nanling Mountains (Hunan-Guangdong border). It is known to occur in two protected areas: Mangshan and Nanling National Nature Reserves, and in adjacent unprotected areas. It is thought to have a very small total population, of perhaps fewer than 500 individuals and likely to be decreasing. The species is a large, attractively patterned, and only recently described (1990) venomous snake, and as such is much in demand amongst specialist hobbyists. Collection for the live animal trade is considered a major threat to the population, which has also been affected by habitat changes and extreme weather events. Collection is prohibited within the two National Nature Reserves, but there are apparently no national level trade restrictions or national protection. Several zoos and private individuals outside China hold this species. In 2010 it was reported that around 100 had been raised in captivity to date. It was assessed by IUCN in 2012 as Endangered and is listed as critically endangered in the Chinese national red data book.

Analysis: The endemic Mangshan Pit Viper has a restricted range in southern China and is believed to have a very small (estimated at fewer than 500 individuals) and probably decreasing global population. It is known to be in international demand for the hobbyist trade. A proportion of the population occurs in protected areas, but there are no national level trade restrictions or national protection. 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 in paragraph A of Annex 2 a *Resolution Conf. 9.24 (Rev. CoP15).*

Transfer of Roti Island Snake-necked Turtle *Chelodina mccordi* from Appendix II to Appendix I

Proponent: United States of America

Summary: The Roti Island Snake-necked Turtle *Chelodina mccordi* is a small to moderate-sized, side-necked freshwater turtle in the family Chelidae, known from Roti Island, Indonesia and the Democratic Republic of Timor-Leste. It is almost entirely nocturnal and on Roti Island inhabits permanent and semi-permanent shallow eutrophic inland lakes and swamps as well as adjacent rice paddies and irrigation ditches on the inland highland plateau areas. According to the local people of Timor-Leste, it may also be found in seasonal wetlands. Average clutch size in captivity is 10–12 eggs.

The species has a very restricted range. The estimated extent of suitable habitat on Roti Island is 200 km^2, however, much of the area has evidently been depleted of turtles and the total area of occupancy with relatively intact sub-populations and good habitat might be as small as 20 km^2. The primary area of distribution on Timor-Leste is the 400 km^2 highland plain around Lake Iralalaro, which itself has a surface area between 10 and 15 km^2.

Historically, this species was not used or traded; it was introduced into international trade in the1980s, since then it has reportedly suffered a dramatic population decline on Roti Island ascribed very largely to collection for the international pet trade. When first entering trade, Roti Island Snake-necked Turtles were considered to belong to *Chelodina novaeguinae* (a more widespread species occurring in Australia and New Guinea), but were described as a distinct species in 1994. Targeted collection reportedly then increased to meet international demand. It is now considered to be effectively commercially extinct in Indonesia. The sub-population in Timor-Leste was not discovered until 2003 and was reported in 2008 as not apparently having been subject to collection pressure up to then. The species is also reportedly affected by habitat degradation, predominantly as a result of agricultural conversion and use of chemicals in agriculture, although it is known to use modified habitats. It is currently classified as Critically Endangered by IUCN. This assessment was made in 2000, before the discovery of the Timor-Leste population.

The species was included in Appendix II in 2004. It is not protected under Indonesian legislation. However, in 2002 the Indonesian Management Authority issued a zero export quota, owing to concerns that the species was on the brink of extinction in Indonesia. Records from the CITES trade database indicate that in the period 2008–2011 some 100–200 specimens of the species were reported exported from Indonesia, declared as raised in captivity. It is noted that as recently as 2005 there were no registered captive-breeders of this species in Indonesia and it is thought likely that a high proportion, if not all, of the specimens in question may have been wild-caught. There are indications that wild specimens are preferred by some hobbyists as some captive stock of the species has resulted from interbreeding between this species and *Chelodina novaeguineae.* If the specimens were indeed wild-caught, it is not known what their origin was, but given the apparent virtual extinction of the species in Roti, it is at least possible that they originated in Timor-Leste.

Timor-Leste is not currently a Party to CITES and has not informed the CITES Secretariat of a competent authority able to issue comparable documentation. The country is in the process of drafting a Biodiversity Decree Law that is likely to give full protection to *Chelodina mccordi* as an internationally recognised threatened species.

Analysis: *Chelodina mccordi* has a restricted range in two States and is known to be in high demand internationally amongst hobbyists. The population in one range State (Indonesia) is believed to have suffered a severe decline as a result of harvest for international trade. Given the extreme depletion of this population, it is believed likely that collection pressure may shift to the other population if it has not already done so. It may be expected to drive a similar decline there, so that it is possible that the species meets the criteria for inclusion in Appendix I set out in Annex 1 to *Resolution Conf. 9.24 (Rev. CoP15)* on the basis of a marked observed and projected decline in the wild population.

Inclusion of Spotted Turtle *Clemmys guttata* in Appendix II

Proponent: United States of America

Summary: The Spotted Turtle *Clemmys guttata* is a small, semi-aquatic turtle found in wetlands in eastern North America, in Canada and the USA. The species occupies a wide range of at least 200 000 km^2, but is reported to occur in generally small, scattered populations. The total population in Canada is estimated at up to 2000 individuals. There is no reliable assessment for the US. The US population has been categorised as between 10 000 and one million individuals, the lower figure based on an estimate of there being at least 500 populations, each with a minimum average population size of 20 individuals. Spotted Turtles are long-lived: females mature between seven and 15 years of age and produce one or two clutches, generally of three to five eggs, in a breeding year. Many females do not breed every year. Individuals aggregate to hibernate and breed. Habitat has declined in quality and extent over the past century. However, an overall assessment in the USA in 2005 concluded the species was nationally and globally secure. The species was classified in 2011 as Endangered by IUCN, on the basis of a long generation time and inferred population declines.

Clemmys guttata is collected predominantly for the pet trade and collection for this purpose has apparently resulted in local extirpation in some areas. It is not clear what proportion of harvest in the USA is destined for international trade and how much for the domestic trade. Between 1999 and 2010, just under 8000 individuals were recorded as having been exported from the USA. Exports have shown an increasing trend, from about 400 per year for 1999–2001, to approximately 1100 per year for the period 2008–2010, to 1600 in 2011 and around 2000 for 2012 (data incomplete). The great majority of exports are now reported as being captive-bred or farmed, with fewer than 400 specimens reported as wild-collected or with undeclared origin since 2006. Most exports are destined for Asia, and surveys have found this species for sale in pet stores and markets there. Regulatory requirements generally prohibit the commercial export of this species from Canada.

Analysis: The Spotted Turtle is a widespread species that occurs in scattered populations in eastern US and south-eastern Canada. There are no reliable overall population estimates. The species is not considered rare but is believed to be declining slowly. It has a long lifespan and generally low productivity. It is exported from the USA for the international hobbyist trade, particularly to Asia. Exports have shown a rising trend in the past decade, although the great majority of recent exports are declared as captive-bred, with fewer than 100 per year declared as wild-collected or of unknown origin. If this is accurate, then it seems very unlikely that the harvest of specimens from the wild for international trade would reduce the wild population to a level at which its survival might be threatened by continued harvesting or other influences, or at which it might become eligible for inclusion in Appendix I in the near future.

Inclusion of Blanding's Turtle *Emydoidea blandingii* in Appendix II

Proponent: United States of America

Summary: Blanding's Turtle *Emydoidea blandingii* is a medium-sized, semi-aquatic turtle that occurs in southeastern Canada and in the USA in the Upper Midwest and New England. The species uses a range of permanent and temporary wetland habitats and is highly mobile; individuals move extensively between wetlands, and to terrestrial nesting sites which are often well away from their resident wetlands. The range is extensive but has been reduced through habitat loss and fragmentation. An estimated 30–50% of suitable habitat in the Midwestern region of the USA has been lost in recent decades. Reductions in the number of known populations have been recorded in some US states but not in others; many remaining populations are believed to have declined. There is no estimate of the total US population, though the largest known (in Nebraska) is estimated to be over 130 000 individuals (excluding hatchlings and yearlings). The estimated population in Canada is around 10 000 adults. Individuals reach maturity late (12 years for males, 14–20 years in females); once mature, females generally breed every two to three years, producing one clutch of 8-15 eggs, and may remain reproductive for 40–50 years. The species was assessed as Endangered in the IUCN Red List in 2011, based on extensive slow population declines and long generation time.

Wild individuals are collected for the domestic and international pet trade. There may also be some harvest for traditional medicinal use in Canada. Some are caught as by-catch in the harvest of Snapping Turtles *Chelydra serpentina*. Demand in international markets does not appear high, possibly owing to similarity with the widely kept European Pond Tortoise *Emys orbicularis.* Exports from the USA recorded in US Customs data are at a low level, although have increased from an average of under 40 individuals per year in the period 1989–1997 to around 80 per year, 1999–2010. At the same time, the proportion of exports declared as wild-caught has declined from over 80% in the period 1989–1997 to less than 10% in 1999–2010. If these figures are reliable, they equate to an export of fewer than 10 wild animals annually. Canada generally prohibits the commercial export of this species. There are no indications of any non-commercial trade.

Analysis: *Emydoidea blandingii* is fairly widespread in the USA and Canada. The global population is believed to exceed 140 000, although is thought to be declining slowly through loss of habitat. The species is reported to be in low demand in international markets. Recorded international trade is at a low level, with fewer than 10 specimens recorded as wild-collected exported from range States in recent years. Even if all exports reported in fact originate from the wild it seems very unlikely that the harvest of specimens from the wild for international trade would reduce the wild population to a level at which its survival might be threatened by continued harvesting or other influences or become eligible for inclusion in Appendix I in the near future.

Inclusion of Diamondback Terrapin *Malaclemys terrapin* in Appendix II

Proponent: United States of America

Summary: The Diamondback Terrapin *Malaclemys terrapin* is a medium-sized turtle that occurs in Bermuda and the USA. In the USA the species occurs in brackish coastal swamps in 16 eastern and south-eastern states. The population on Bermuda may well be the result of natural colonisation several centuries ago; it numbers fewer than 100 individuals at a single site. Life history parameters vary considerably across the range, with northern populations producing larger clutches (10-13 eggs compared with 4-7 eggs in southern populations). Male terrapins have been found to mature at 4-7 years of age, and females between 8-13 years, and are estimated to live for as long as 50 years. Historically very abundant in the USA, the species became popular as a gourmet food in the late 19th century in consequence of which the population declined greatly through overharvesting. As demand for the meat declined, populations began to recover. Nowadays, a major cause of mortality throughout much of the range is accidental capture and drowning in Blue Crab *Callinectes sapidus* traps, with a 1995 report suggesting that tens of thousands of individuals are killed in this way annually. Roadkill is also a significant cause of mortality in some areas. Males and juveniles are particularly vulnerable to being caught in crab traps as adult females are often too large to fit in the opening. Conversely, females are more likely to be killed by motor vehicles as they move around looking for nesting sites. Raccoon predation on adults appears to be important in some sites. There is no current range-wide population estimate, but the species is believed to number in the hundreds of thousands.

Since the 1980s there has been a resurgence in demand for the meat, both domestically and abroad, particularly in Asia. In addition to its meat, *Malaclemys terrapin* is also harvested for use in the pet trade due to its attractive patterning, and has been found for sale in pet markets in Asia. Trends in many parts of the range are unknown, but where there is information, populations are generally believed to be declining or stable. The species is currently classified as Lower Risk/Near Threatened by IUCN, based on a 1996 assessment (regarded as in need of updating). It is not listed as Threatened or Endangered in the US Endangered Species Act. Harvest for domestic use is, or has been, extensive, with a minimum of 10 000 turtles believed sold annually in New York city alone in the 1980s. At that time the annual harvest in Chesapeake Bay was estimated at 8000-12 000. More recently, in Maryland recorded harvest increased 23-fold to 10 500 in 2006 compared with 2005; legislation enacted in 2007 has closed the Maryland fishery. The extent of commercial harvest for domestic consumption in US States that still permit this is unclear.

Some 26 000 individuals were reported as exported from the USA in the period 1999-2010, Average annual exports increased from around 750 for the period 1999-2003 to a peak of over 6000 in 2006. Exports dropped to around 1800 in 2007 and then rose to an average of around 3000 per year for 2008-2012 (data for 2012 are incomplete). Data from 1996-2000 indicate around 60% of exports during that period were from wild-caught specimens, as were around two-thirds of the 2006 exports. More recently the great majority of exports have been reported as captive-bred, although some 800 individuals exported in 2012 are of wild or undeclared origin.

Analysis: The Diamondback Terrapin occurs in coastal areas of eastern and south-eastern USA, with a tiny, possibly natural, population on Bermuda. The species has an extensive range and evidently a substantial global population, although there are no precise estimates for the latter. Historically harvested in very large numbers for domestic consumption, populations greatly declined, although recovered to some extent in the 20th century. Harvest, at least initially largely for domestic consumption (and to a lesser extent for the pet trade), appears to have increased again from the 1980s. Export increased markedly after 2000, peaking in 2006 at 6000 individuals, although the likely source of most or all of the 2006 exports (Maryland) has now banned commercial harvest. The great majority of exports since then have been declared as captive-bred; however, a notable number of exports in the most recent year (2012) are of wild or undeclared origin. If a significant proportion of recent exports are in fact of wild origin, and given the relatively high mortality rates reported from other causes, particularly drowning in crab traps, it is conceivable that the species might meet the criteria for inclusion in Appendix II in that regulation of trade may be required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences (Paragraph B of Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15).*

Proposal Part A. Inclusion of the following taxa of the Family Geoemydidae in Appendix II: *Cyclemys* spp., *Geoemyda japonica, G. spengleri, Hardella thurjii, Mauremys japonica, M. nigricans, Melanochelys trijuga, Morenia petersi, Sacalia bealei, S. quadriocellata,* and *Vijayachelys silvatica*

Proposal Part B. Zero quota on wild specimens for commercial purposes for the following taxa already listed in Appendix II: *Batagur borneoensis, B. trivittata, Cuora aurocapitata, C. flavomarginata, C. galbinifrons, C. mccordi, C. mouhotii, C. pani, C. trifasciata, C. yunnanensis, C. zhoui, Heosemys annandalii, H. depressa, Mauremys annamensis,* and *Orlitia borneensis*

Proponent: China and the United States of America

Proposal Part A. Inclusion of the following taxa of the Family Geoemydidae in Appendix II: *Cyclemys* spp., *Geoemyda japonica, G. spengleri, Hardella thurjii, Mauremys japonica, M. nigricans, Melanochelys trijuga, Morenia petersi, Sacalia bealei, S. quadriocellata,* and *Vijayachelys silvatica*.

Summary: The proposal concerns Geoemydidae in Asia. The first part proposes to list 15 (or 17, depending on the species content of *Cyclemys*) species in Appendix II: four are currently in Appendix III (China) and the remainder are at present not listed in the CITES Appendices. The four Appendix III species now proposed for transfer to II are: *Geoemyda spengleri, Mauremys nigricans, Sacalia bealei,* and *S. quadriocellata.* The proposal would have the effect of listing essentially all valid Asian species of Geoemydidae in CITES except for two farmed species (*Mauremys reevesii* and *M. sinensis*).

About half the species proposed for addition in Appendix II are globally threatened according to the current IUCN Red List: six are classified as Endangered and two as Vulnerable. Of the remainder, three were assessed as Lower Risk/near threatened and the others were not evaluated. Recently the IUCN Tortoise and Freshwater Turtle Specialist Group has reviewed current listings and proposed some changes. Almost no quantitative information from assessment or monitoring studies of wild geoemydid populations is available. For most Asian turtle species in trade, population trends are inferred from the volume of trade and/or the relative availability of specimens in food and pet markets. It is widely held that exploited populations of Asian turtle species, including Geoemydidae, are in decline and field collectors typically report that more effort is required now to find a turtle than in the past.

Demand in eastern Asia, particularly in China, for turtles for food and medicinal use and for the live animal trade is very heavy, and there is a very large volume of international trade, some of it illegal. Use of turtles has a long tradition in eastern Asia and recent increase in demand has intensified collection pressure and is believed to have depleted or extirpated populations of most turtle species in the region. Turtles are vulnerable to overexploitation because of life history characteristics, including high longevity, late maturity and limited annual reproductive output. Collection and trade tend to shift in turn from one species to another as supply declines below commercial viability, or trade becomes better controlled. Species are nominally protected by law in many range countries but it is clear that high levels of illegal trade exist, with substantial cross-border movement between Southeast Asian countries and southern China. Few data on levels of international trade, even where species have been listed in Appendix III, are available. Legal trade in Appendix-III listed species as reported to CITES has been mainly at low level. Loss or degradation of habitat, caused by sand or gold mining, dam construction, drainage and pollution also affects many species. Local subsistence use is high in several areas.

Asian species in the family Geoemydidae are broadly similar in appearance and the ways they are used in international trade: as food, medicine, to supply farming and ranching operations and for pets. Because of these similarities, combined with their shared biological vulnerabilities, the proposal suggests these species warrant inclusion in CITES at a higher taxon level under Paragraph B of Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Cyclemys atripons A poorly-known species with a relatively small range in adjoining parts of southwest Cambodia and southeast Thailand. Recently reported fairly common in Cambodia probably because it is not in much demand for food (unpalatable) or medicine, and is rarely traded. Red List status not assessed by IUCN.

Cyclemys dentata An inadequately known species quite widely distributed in Southeast Asia from southern peninsular Malaysia to the Philippines. Formerly regarded as locally common although reportedly heavily exploited for the food trade. Assessed in 2000 by IUCN as Lower Risk/near threatened. This, however, was before 2008 work on genetic diversity within the genus which led to recognition of three new species within the range of '*C. dentata*' *sensu lato*. Systematics and species taxonomy within the complex remain imperfectly resolved, and it is not always possible to determine which species is being referred to in pre-2008 literature.

Cyclemys enigmatica A poorly-known species occurring in Malaysia (West, Sabah, Sarawak) and Indonesia (Sumatra, Java, Kalimantan), probably also Brunei. Red List status not assessed by IUCN. See remarks under *C. dentata*.

Cyclemys fusca A poorly-known species centred in Myanmar, possibly extending to adjoining northeast India and Bangladesh. Red List status not assessed by IUCN. See remarks under *C. dentata*.

Cyclemys gemeli A poorly-known species occurring in Bangladesh, extreme northeast India and possibly Nepal. Red List status not assessed by IUCN. See remarks under *C. dentata*.

Cyclemys oldhamii Widespread in mainland Southeast Asia, from Myanmar to Viet Nam, possibly extending to southern China. Not well known. This was recently the turtle most commonly encountered in two areas in Cambodia, probably because it is not in much demand for food (unpalatable) or medicine, and is apparently rarely traded. Red List status not assessed by IUCN.

Cyclemys pulchristriata A poorly-known species with a relatively small range in adjoining parts of eastern Cambodia and Viet Nam. Recently said to be still fairly common in Cambodia, probably because it is not in much demand for food (unpalatable) or medicine, and is apparently rarely traded. Red List status not assessed by IUCN.

Cyclemys shanensis This species appears in the CITES standard taxonomy for chelonians but is no longer recognised, with populations divided among three new species, none of which is in the CITES standard list.

Geoemyda japonica Endemic to Japan. Subject to a separate proposal (CoP16 Prop. 34) for inclusion in Appendix II (with a zero annual export quota with primarily commercial purposes for wild-caught specimens). See separate analysis for details.

Geoemyda spengleri Occurs in southern China, northern Viet Nam, and recently reported in adjacent Lao PDR. Formerly said to be abundant in China but now reportedly rarely seen in the wild, except in very remote places, and in steep decline; also said to be the only turtle still present in many areas where all others had become extremely rare or had been extirpated. Relatively abundant in parts of northern Viet Nam, although large numbers are exported to markets in south China for live animal trade; excess collection appears to have caused decline in some populations. In the period 2004-2009, transactions reported to CITES indicate 1204/24 live specimens were imported/exported, mainly from China and Thailand. Assessed by IUCN as Endangered in 2000.

Hardella thurjii Present in the lower and middle reaches of the main river systems of the Indian subcontinent: Indus, Ganges, and Brahmaputra. Formerly not uncommon in Bangladesh and parts of India, but apparently rare in Nepal, status in Pakistan not known. Appears to have declined greatly in India and parts of Bangladesh, probably because of the long-standing heavy exploitation for food, attributed to its large size and palatability. Also affected by drainage and water pollution. Assessed by IUCN as Vulnerable in 2000.

Mauremys japonica Endemic to Japan; widespread, known from Honshu, Shikoku, Kyushu and several smaller islands. Although often found at high density, many populations are thought to be

depleted or in decline, mainly because of land-use changes, also affected by collection for pets and competition with the introduced *Trachemys.* Assessed by IUCN in 2000 as Lower Risk/near threatened.

Mauremys nigricans Present in southern China, and may extend into northern Viet Nam. Appears to have declined sharply over the last few decades, and has not been located in the wild for several years. Because it is rare and attractive it is much in demand and expensive in the pet trade. Unlike many other Asian turtles, this species is not widely consumed, nor used for medicine, because of its strong musk odour. Assessed by IUCN as Endangered in 2000.

Melanochelys trijuga Widespread over the Indian subcontinent, Sri Lanka and Myanmar, and just extends into the northwest margin of Thailand. Exists in good numbers in many parts of India, where it is often the most frequently encountered turtle, particularly after first rains; low population density in some parts of India is probably a result of exploitation and water pollution. Also frequent in parts of Sri Lanka, particularly protected areas. Not in immediate danger in India, Nepal or Sri Lanka although widely collected for food and sometimes affected by habitat loss or modification. Little recent information available on populations in Bangladesh or Myanmar. Assessed by IUCN as Lower Risk/near threatened in 2000.

Morenia petersi Confined to sites with the Ganges-Brahmaputra systems in India, Bangladesh and possibly Nepal (where marginal and not recently confirmed). No substantive population data available. Two decades ago said to be common in parts of Bangladesh where other large turtles had become rare because of exploitation, but also said to be uncommon. Widely used for food, said to be heavily used in parts of Bangladesh, and has appeared in food markets in south China. Has never been widely available in the pet trade. Assessed by IUCN as Vulnerable in 2000.

Sacalia bealei Has a restricted range at lower elevations in southeast China. A decade ago said to be uncommon and declining, but little detailed and current information on population or trade levels appears to be available. Assessed by IUCN as Endangered in 2000.

Sacalia quadriocellata Formerly distributed over much of northern Viet Nam, parts of the eastern margins of Lao PDR, southern mainland China (and Hainan Island). A decade ago the species was said to exist in small to moderate numbers in northern Lao PDR and northern Viet Nam, where it was not under great threat, but it was reportedly severely threatened in China. No detailed and current information on population or trade levels appears to be available. In Lao PDR, turtles were caught for consumption or sale to Vietnamese traders. Assessed by IUCN as Endangered in 2000.

***Vijayachelys silvatic*a** Endemic to southwest India, with a restricted range in moist forests in the southern Western Ghat hills, mainly in Kerala. Rediscovered in the 1980s having not been seen since first described in 1912. Previously assigned to *Heosemys* (and formerly *Geoemyda*) but now seen as an isolated basal lineage within the family and placed in its own monotypic genus *Vijayachelys.* Generally appears rare and infrequently encountered, although highly cryptic and seasonal in appearance. Most individuals among local indigenous communities interviewed considered the species not uncommon and not declining. Forest fire was reported a threat and turtles are widely caught for local consumption. A few specimens have appeared in the European pet trade. Assessed by IUCN as Endangered in 2000.

Analysis: Information on population trends and trade volume in these species of Asian Geoemydidae is not comprehensive and for some included taxa little or no species-specific information is available. The following brief observations can be made regarding whether the species may meet the criteria for inclusion in Appendix II set out in Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)*, that is whether regulation in trade in the species is necessary to prevent it becoming eligible for inclusion in Appendix I in the near future, or to ensure that harvest for trade is not reducing the population to a level at which its survival might be threatened by continued harvest or other influences.

Cyclemys species are poorly-known and taxonomically confused. One widespread form (*Cyclemys dentata sensu lato)* is reportedly heavily exploited for the food trade; others are reportedly not in demand for food or medicine and are rarely traded. There is insufficient information to determine

whether *Cyclemys dentata s.l.*) meets the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*. Where it to do so, the others might well meet the look-alike criteria set out in Annex 2 b of the Resolution.

Geoemyda japonica is endemic to Japan and subject to a separate proposal (CoP16 Prop. 34) for inclusion in Appendix II (with a zero annual export quota with primarily commercial purposes for wild-caught specimens). It is not clear that the species meets the criteria for inclusion in Appendix II. See separate analysis for discussion.

Geoemyda spengleri has a relatively restricted distribution in southern China and northern Indochina. Populations are said to have declined greatly in China as a result of overexploitation and the species is reported to be harvested in Viet Nam for export to China, leading to further population declines. The species would appear to meet the criteria for inclusion in Appendix II.

Hardella thurjii occurs widely in the Indian subcontinent where it is reported to have declined greatly, apparently largely as a result of local exploitation for food. The species has appeared in international trade, but there is no information on current trade levels. It is not clear whether the species meets the criteria for inclusion in Appendix II.

Mauremys japonica is widespread in Japan and apparently locally common. There is some domestic use. The species is available in small numbers (as captive-bred animals) abroad but there is no evidence of any significant international trade, or any indication that harvest for international trade has an impact on wild populations. The species would not appear to meet the criteria for inclusion in Appendix II.

Mauremys nigricans is endemic to China where it has not been found in the wild by scientists for several years. China has reported no export since including the species in Appendix III in 2005. The absence of recorded international trade in recent years indicates that the species is unlikely to meet the criteria for inclusion in Appendix II. It probably meets the criteria for inclusion in Appendix I.

Melanochelys trijuga is widespread in South Asia and adjacent Southeast Asia. It is harvested for local consumption and has in the past been noted as exported from Myanmar. There is no information on current international trade or on the impact of harvest for trade on wild populations. It is not clear whether the species meets the criteria for inclusion in Appendix II.

Morenia petersi has a relatively restricted range in north-east India, Bangladesh and possibly Nepal. Information on its status is sparse and conflicting. The species is apparently harvested for local consumption and there are reports of its presence in large amounts in food markets in Hong Kong in the mid-1990s. There is little information on its current availability in markets outside range States. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II.

Sacalia bealei is endemic to China and does not appear to feature to any significant extent in international trade. Any extensive use of the species is likely to be domestic. The absence of recorded international trade in recent years indicates that the species is unlikely to meet the criteria for inclusion in Appendix II. It may conceivably meet the criteria for inclusion in Appendix I.

Sacalia quadriocellata has a reasonably restricted distribution, is reportedly harvested for international trade and is regarded as severely threatened in one range State. It may meet the criteria for inclusion in Appendix II.

*Vijayachelys silvatic*a is a localised species in southwest India that does not appear to be heavily affected by harvest for export. The great majority of use of the species is evidently domestic. It is unlikely that it meets the criteria for inclusion in Appendix II.

In summary: *Geoemyda spengleri* and *Cyclemys dentata sensu lato* appear likely to meet the criteria for inclusion in Appendix II set out in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15); Sacalia quadriocellata* may meet the criteria; the other *Cyclemys* spp., *Geoemyda japonica, Mauremys japonica, M. nigricans, Sacalia bealei* and *Vijayachelys silvatica* appear not to meet the

criteria (although *Mauremys nigricans, Sacalia bealei* and conceivably *Geoemyda japonica* may meet the criteria for inclusion in Appendix I). There is insufficient information to determine whether *Hardella thurji, Melanochelys trijuga* or *Morenia petersi* do or do not meet the criteria.

The various species above resemble each other to greater or lesser degrees. It is conceivable that, were some species to be included in Appendix II on the basis of the criteria in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15),* inclusion of others would facilitate implementation and they would therefore be considered to meet the criteria in Annex 2 b to the Resolution. It is not clear that this applies in all cases. In particular, neither of the two *Mauremys* species appears to meet criteria for inclusion under Annex 2 a (for different reasons in each case), both occur in countries that are not major exporters of the other species, and both resemble other *Mauremys* species in Europe and western Asia, not in the Appendices, more than they resemble the other species considered here.

Proposal Part B. Zero quota on wild specimens for commercial purposes for the following taxa already listed in Appendix II: *Batagur borneoensis, B. trivittata, Cuora aurocapitata, C. flavomarginata, C. galbinifrons, C. mccordi, C. mouhotii, C. pani, C. trifasciata, C. yunnanensis, C. zhoui, Heosemys annandalii, H. depressa, Mauremys annamensis,* and *Orlitia borneensis.*

Summary: A zero quota for wild-caught specimens is proposed for fifteen geoemydid species currently listed in Appendix II. Almost all are categorised by IUCN as Critically Endangered. Most have restricted ranges in China and Southeast Asia, some extremely so, and the range of one remains unknown. They are widely used for food and are heavily collected and traded for this purpose; some, particularly the rare or attractively marked *Cuora*, are subject to intense demand for the pet trade and command a very high price. Legal trade in listed species as reported to CITES has been mainly at low to moderate level.

Batagur borneoensis Formerly assigned to Callagur. A large riverine species, *widespread from extreme south Thailand to Borneo, most populations are thought to be in decline because of excess exploitation for meat and eggs; also affected by habitat changes.* Assessed by IUCN as Critically Endangered in 2000.

Batagur trivittata Formerly assigned to *Kachuga*. Endemic to Myanmar. Thought possibly extinct a decade ago until individuals were found in a temple pond in 2002, and two small wild populations were found in the Dokkhtawady and the Upper Chindwin during 2002-2004 surveys. Current status not known in detail. Acutely threatened by fishing, gold-mining and dam construction. *Assessed by IUCN as Endangered in 2000*.

Cuora aurocapitata A restricted range species, endemic to China, and known from three river systems in southern Anhui. Described from market turtles in 1988 and found in the wild by scientists in 2004. Collection for pet trade began to deplete populations from the 1990s onward. Wild population now estimated at 50-100, probably fewer than are held in captivity. Threatened by fishing, pollution and habitat loss to hydroelectric projects as well as excess collection. Assessed by IUCN as Critically Endangered in 2000.

Cuora flavomarginata Present in China and Japan (Ryukyus). A decade ago, the mainland China population was considered highly endangered; the Taiwanese population had declined because of agricultural expansion but was then thought to be stable or recovering. In Japan (Ryukyus) populations are small and somewhat threatened but relatively well protected. Assessed by IUCN as Endangered in 2000.

Cuora galbinifrons Occurs in southern China (Gunagxi, Hainan) and neighbouring parts of Viet Nam and Lao PDR. The subject of a separate proposal (CoP16 Prop. 33) for transfer to Appendix I. See separate analysis for details.

Cuora mccordi Endemic to China. Described in 1988 on the basis of animals from a market in western Guangxi and only located in the wild in 2005; the known range extends over only 50 sq kms. Much in demand by collectors. Formerly said to be common, turtles began to be collected for trade in the 1980s and one of the last known to have been collected sold for USD 20 000 in 2008.

Surveys found one animal in the known range in 2009 and none in 2010. Assessed by IUCN as Critically Endangered in 2000.

Cuora mouhotii Present in China and Southeast Asia west to Assam (India). Little information on population status available. *Believed to be widely consumed and in much trade.* Assessed by IUCN as Endangered in 2000.

Cuora pani Endemic to China where restricted to small streams in the Qin Ling mountain range in Shaanxi, central China. Few specimens with exact locality data are known; the species appears to exist as fragmented small populations. Exploited by the pet trade and affected by habitat loss. Some 250 animals are known in captivity where breeding has been quite successful. Assessed by IUCN as Critically Endangered in 2000.

Cuora trifasciata Extends from southern China to adjacent parts of Viet Nam, Lao PDR and possibly Myanmar. Has long been in demand for live animals and medicinal use but subject to rising demand and excess collection over recent decades. Also in demand to stock farming operations. Recent high prices (reportedly up to USD 20 000) thought to be driven by its supposed efficacy in combating cancer. Assessed by IUCN as Critically Endangered in 2000.

Cuora yunnanensis Endemic to China. The first specimens known were obtained in the vicinity of Kunming (Yunnan) but, despite intensive searches, the species was virtually unknown until live individuals were found in Kunming market in 2004. The wild range was only located in 2008. There is said to be exceptionally high demand from collectors. Breeding has occurred among turtles recently found. Assessed by IUCN as Critically Endangered in 2010.

Cuora zhoui Originally described from turtles in a market in southern Guangxi (China), the natural range remains unknown and only collectors have ever seen it in the wild. The species may occur in China or in northern Viet Nam, or conceivably both. No specimens are known to have entered trade in recent years. About half the 200 specimens that went to live animal collections survive; some breeding has occurred. Assessed by IUCN as Critically Endangered in 2000.

Heosemys annandalii Widely distributed in Southeast Asia. Formerly in the genus *Hieremys*. Threatened by collection for trade in Cambodia, Lao PDR and Viet Nam, probably threatened in Thailand, the population in Malaysia is marginal and very small. Habitat loss is a contributing factor throughout the range. Among the most immediately threatened turtles in Viet Nam because of its relatively large size and association with lowland wetlands in populated areas. Assessed by IUCN as Endangered in 2000.

Heosemys depressa Endemic to western Myanmar where restricted to the Arakan hills (Rakhine). Not seen by scientists in the wild for more than a century; turtles of this species began to appear in food markets in Myanmar and China during the 1990s, and the species was rediscovered in the wild in 2007 within a protected area established for elephants. Used locally for food and traded to China. Some breeding has occurred in captive groups in Myanmar, Europe and USA. Assessed by IUCN as Critically Endangered in 2000.

Mauremys annamensis Endemic to Viet Nam. The subject of a separate proposal (CoP16 Prop. 35) for transfer to Appendix I. See separate analysis for details.

Orlitia borneensis Ranges from peninsular Malaysia to Sumatra and Borneo. Traded in vast numbers and all sizes in East Asian food markets. Threatened in peninsular Malaysia, and highly so in Indonesia whence exported in large quantities despite official protection. Assessed by IUCN as Endangered in 2000.

For some species there has been little reported wild trade. Some are protected from harvest and trade in some range States, with some having adopted zero export quotas. It is not clear whether a zero quota is intended to cover ranched specimens, trade in which essentially involves individual taken from the wild. Some trade in some of the species is reported as of ranched specimens; there are not known to be commercial ranching operations for these species in range States.

Analysis: The stated original intention of the proponents was to transfer these existing Appendix II species to Appendix I, but this was modified following consultation with range States, although two separate proposals for transfer of *Cuora galbinifrons* (Prop. 33) and *Mauremys annamensis* (Prop. 35) to Appendix I have been submitted.

There are no guidelines for assessing a proposal to annotate an Appendix-II listing with a zero export quota of wild specimens for commercial purposes. However, such a listing is close to an Appendix-I listing in its effect. It seems reasonable therefore to assess these proposals against the criteria for inclusion in Appendix I set out in Annex I to *Resolution Conf. 9.24 (Rev. CoP15).* The following brief observations may be helpful regarding which species may or may not meet these criteria. Some of these species have not been recorded in (legal) international trade recently; all may be expected to be in demand in international trade.

Batagur borneoensis is relatively widespread. There is no information on population levels, nor survey data on population trends. It may meet the criteria for inclusion in Appendix I on the basis of inferred population decline.

Batagur trivittata was until recently thought extinct. Known populations are apparently very small and highly vulnerable. The species would appear to meet the criteria for inclusion in Appendix I.

Curoa aurocapitata is believed to have an extremely small wild population and to have undergone major population decline in the past few decades. It appears to meet the criteria for inclusion in Appendix I.

Cuora flavomarginata appears to have relatively stable populations in two parts of its range (Taiwan POC) and Ryukyu Islands (Japan) and may not meet the criteria for inclusion in Appendix I.

Cuora galbinifrons As discussed in the analysis for proposal CoP16 Prop. 33, this species may meet the criteria for inclusion in Appendix I.

Curoa mccordi is known from a small area of China where it appears to have undergone a very marked population decline in the past few decades and now appears extremely rare. It appears to meet the criteria for inclusion in Appendix I on the basis of a marked decline and a small population with high vulnerability.

Curoa mouhoti is a widespread species for which no information is available on population levels, nor survey data on population trends, nor information on numbers harvested and in trade. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix I.

Cuora pani occurs in central China where populations are assumed to be small and fragmented. There is no survey data on population trends. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix I, although it may conceivably do so by virtue of a small population and high vulnerability.

Cuora trifasciata has (or had) a reasonably wide distribution but has undoubtedly been subject to intense collection pressure because of its high value. It is likely to meet the criteria for inclusion in Appendix I on the basis of inferred population decline.

Cuora yunnanensis if the species still persists in the wild, it is highly likely that it would meet the criteria for inclusion in Appendix I on the basis of a small wild population, restricted range and high vulnerability.

Cuora zhoui is an enigmatic species whose wild range (presumed China or Viet Nam, or both) remains unknown to science. No specimens are known to have entered commerce recently. If it still exists in the wild it seems highly likely to meet the criteria for inclusion in Appendix I on the basis of a small wild population, restricted range and high vulnerability.

Heosemys annandalii is relatively widespread. There is no information on population levels, nor survey data on population trends. It may meet the criteria for inclusion in Appendix I on the basis of inferred population decline.

Heosemys depressa is currently known from a single protected area in Myanmar and may meet the criteria for inclusion in Appendix I by virtue of a restricted range and high vulnerability.

Mauremys annamensis. As discussed in the analysis for proposal CoP16 Prop. 35, this species may meet the criteria for inclusion in Appendix I.

Orlitia borneensis is relatively widespread. There is no information on population levels, nor survey data on population trends. It may meet the criteria for inclusion in Appendix I on the basis of inferred population decline.

An Appendix-II listing with a zero quota for wild specimens that allowed export of ranched or captive-bred specimens may create implementation and enforcement problems in that wild-collected specimens could be reported as ranched or captive-bred.

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

Proponent: Viet Nam

Summary: The Indochinese Box Turtle *Cuora galbinifrons* is a medium-sized omnivorous turtle, reaching up to 19 cm carapace length, known from China, Lao PDR, Viet Nam and possibly northeastern Cambodia. It is predominantly terrestrial and inhabits cool upland, moist, closed-canopy forest, usually between 300 and 1700 m altitude. From observations in captivity it seems that *C. galbinifrons* is slow to mature (10-15 years) and has low fecundity, with a single clutch of one to three eggs produced annually.

Apparently once common, field encounters with species are reportedly now rare even during dedicated surveys, indicating that populations have suffered severe declines. These are ascribed to over-collection, as the species is reportedly in high demand in the international pet trade and the Asian food market. The species is collected both during targeted searches and when encountered in searches for other forest products. It is reported that any individuals encountered are collected, regardless of legal protection status or location inside protected areas. Collected turtles are traded, apparently mostly illegally, through a network of local middlemen before being exported or consumed locally. The species is also affected by habitat loss and degradation, although this is generally considered to have less of an impact than over-collection. The species was classified as Critically Endangered by IUCN in 2000 due to an inferred 80% population decline. It is listed as endangered in the Viet Nam Red Data Book, and also as endangered in the China Red Data Book of Endangered Animals. It is legally protected from exploitation in China and Lao PDR. In Viet Nam it is under evaluation for inclusion under strict protective legislation. Enforcement is said to be insufficient.

The species has been included in Appendix II since 2000. Since then around 2500 specimens have been reported in trade in the CITES trade database, the majority in a single shipment of 1500 recorded by Viet Nam as imported from Lao PDR in 2006, and reported as ranched specimens. No exports were reported by Lao PDR in that year. However, the species is known to be difficult to raise in captivity, owing to a high rate of mortality in eggs and hatchlings and there are not known to be any facilities for rearing the species in Lao PDR. Around 480 animals traded under CITES since 2000 have been recorded as being of wild origin. Observations from markets indicate that actual volumes in trade may be or may have been several orders of magnitude greater than reported legal trade volumes. From 2000-2003 over 15 000 individuals were recorded from Hong Kong markets alone yet only 905 individuals were reportedly exported worldwide in that period, suggesting a very high level of illegal trade in this species. The species was included in the Animals Committee's Review of Significant Trade process, which eventually resulted in the Standing Committee recommending in July 2009 that all Parties suspend trade in the species with Lao PDR and Viet Nam. These trade suspensions are still (late 2012) in place.

Analysis: *Cuora galbinifrons* is a relatively widespread species that has been harvested intensively. There is no quantitative information on population levels or trends. However, the species is now apparently rarely recorded in surveys, with anecdotal information indicating that it was once common. It may meet the criteria for inclusion in Appendix I in Paragraph C of Annex 1 to *Resolution Conf. 9.24 (Rev. CoP15)* on the basis of inferred population decline.

Inclusion of Ryukyu Black-Breasted Leaf Turtle *Geoemyda Japonica* in AppendixII (with a zero annual export quota for wild specimens)

Proponent: Japan

Summary: The Ryukyu Black-breasted Leaf Turtle *Geoemyda japonica* is endemic to Japan where it is restricted to moist forest on three islands in the Okinawa group (Ryukyu Archipelago). Forest cover has declined markedly on the islands since the 1980s and potential habitat for the species is now believed to cover around 300 km^2, virtually all on Okinawa Island. There are no population estimates available. The species was declared a National Natural Monument in 1975 and is therefore completely legally protected in Japan. There are no indications of domestic use of the species. It is in demand from hobbyists in North America, Europe and Asia and it is thought likely that at least a proportion of the turtles entering trade are wild-collected and illegally exported from Japan. Quantitative information is scarce, but it appears that the numbers entering international trade outside Japan are not large (e.g. the total founder population in the USA is estimated at 100–150). The species was assessed by IUCN in 2000 as Endangered.

Analysis: *Geoemyda japonica* has a restricted range, believed to be declining in extent as a result of deforestation. It is legally protected in its range State, with commercial collection and export banned, but is believed to be illegally exported to meet demand in the international hobbyist trade. There are no population estimates for the species, nor figures for numbers in trade, although indications are that the latter are not large. Overall, there is insufficient information to determine with any degree of confidence whether the species meets the criteria for inclusion in Appendix II. Were the species to be included in the Appendices, a zero quota for wild specimens would reflect the national legislation protecting it in Japan.

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 moderately large freshwater turtle, endemic to Viet Nam. Its known distribution is the marshes and slow-flowing streams of the lowlands of Quang Nam, Da Nang and Gia Lai Provinces in the centre of the country. The provinces have a combined area of approximately 27 000 km^2; suitable habitat within this area would be considerably smaller. Records of specimens in markets in Southern Viet Nam indicate that the species may be considerably more widespread than this in Viet Nam, but this remains unconfirmed. The species has been very rarely recorded in the wild. There are anecdotal accounts that it was locally common in the 1980s and 1990s. In recent years, very few animals have been found in the wild by scientists, despite targeted survey efforts, nor is the species frequently seen in market surveys or recorded in trade seizures. Observations in captivity indicate that it takes about seven years to mature, and females may produce one or two clutches of five to eight eggs per year.

The species was included in Appendix II in 2002. Since then, fewer than 200 have been recorded in CITES trade data, and fewer than 30 of those are recorded as having been taken from the wild. The species is protected in Viet Nam; there have been numerous documented seizures made within the country, apparently with the intended destination of China. Collection for trade is considered to be the primary threat to the species. It is in some demand in the international pet trade and the Asian food trade, and is also used locally for medicinal purposes. Apparently wild-collected turtles pass through a network of local middlemen before being exported or consumed locally. There has been some success in captive-breeding the species in Viet Nam and elsewhere; the largest known holding in Viet Nam is of around 40 individuals. A European studbook has been established, and the Asian Turtle Consortium in the USA is also holding a number of animals.

Wetland habitat loss and degradation as a result of conversion to agriculture is a secondary threat to the species; the species may well be able to adapt to agricultural landscapes with wet rice fields, ponds and canals, but in this habitat animals are extremely likely to be encountered by humans and collected. There are currently no records from any protected areas. *Mauremys annamensis* was assessed as Critically Endangered by IUCN in 2000.

Analysis: *Mauremys annamensis* is endemic to Viet Nam and is in demand in international trade. There are no estimates for a global population but the species now appears to be rare or very rare, with few specimens encountered in the wild in surveys. 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 possible, therefore, that it meets the criteria for inclusion in Appendix I set out in Paragraph C of Annex I to *Resolution Conf. 9.24 (Rev CoP15).*

Transfer of the Family Platysternidae from Appendix II to Appendix I

Proponent: United States of America and Viet Nam

Summary: The Big-headed Turtle *Platysternon megacephalum* is the only species in the family Platysternidae. It is a small to medium-sized turtle (up to 18 cm carapace length) with a large head that occurs in Cambodia, China, Lao PDR, Myanmar, Thailand and Viet Nam. It is restricted to unpolluted, clear, cascading mountain streams usually within closed-canopy forest and bordering riparian areas. Because of historical deforestation, it is believed to be now largely restricted to protected areas. Reproductive characteristics are not well known, but based on captive observations individuals mature at five to nine years and females normally lay up to four eggs per clutch.

The species is collected for food and for the international pet trade, in which hatchlings are particularly highly sought-after because of their vivid colouration. Overall population estimates are lacking although some data are available from two recent studies. In Hong Kong, where collection pressure is low, a density of 60-145 individuals per km^2 has been recorded, while in Guangdong, China, in 2007-2009 only six individuals were found in over 2000 trap-days, with an inferred population density of 0.125 individuals per km^2 of suitable habitat. The difference is believed to be a result of different collection pressure in the two areas. Information on the current and historical status of the species elsewhere is patchy, with indications that it may be locally common in parts of Cambodia and Thailand. Anecdotal information indicates that the availability of the species in markets, chiefly in China, has declined considerably in the past two or three decades, and from this it is inferred that the wild population has also declined. The species was assessed in 2000 by IUCN as Endangered.

Platysternon megecephalum was included in Appendix II in 2002. Since then, around 1700 specimens have been reported in trade under CITES, the great majority in a single shipment of 1500 recorded by Viet Nam as imported from Lao PDR in 2006. These were reported as ranched specimens, which seems highly unlikely: the species does not breed readily in captivity and it is believed that most, if not all, specimens in trade are of wild origin. No exports were reported by Lao PDR in that year. Juveniles of the species fetch high prices in the international pet trade.

Analysis: *Platysternon megacephalum* occurs relatively widely in Southeast Asia and would not appear to have a restricted range under the terms of *Resolution Conf. 9.24 (Rev. CoP15),* although within its range it is restricted to unpolluted areas of habitat. There are no overall population estimates for the species; given the size of the range, and observations of some reasonably high population densities, it seems unlikely that the population is small under the guidelines in Annex 5 of the Resolution. Anecdotal information based on market observations and low population densities in an area where the species is believed to have been exploited indicates that the population has declined in recent years. However, there is insufficient information to determine whether this decline would be considered a marked decline as set out in Paragraph C of Annex 1 to *Resolution Conf. 9.25 (Rev. CoP15).* On current information, it is not possible to determine whether this species meets the biological criteria for inclusion in Appendix I. The species is in demand for international trade.

Transfer of the Burmese Star Tortoise *Geochelone platynota* from Appendix II to Appendix I

Proponent: United States of America

Summary: The Burmese Star Tortoise *Geochelone platynota* is a medium-sized tortoise endemic to the dry zone of central Myanmar. It occurs in deciduous forests, thorn scrub and pastures and possibly various other agricultural landscapes. Historically *G. platynota* was collected for local human consumption. From the mid-1990s it has been in demand internationally for meat and medicine as well as for the pet trade. Fragmentation and conversion of land to row crop agriculture have affected its habitat, including in protected areas where shifting cultivation, illegal tree-felling and bamboo harvesting take place. However, the species can survive in modified habitats if not subjected to excessive harvesting.

The species appears to be extremely depleted in the wild and the view has been expressed that there may now be no viable wild populations.
Three areas were identified in the 1990s and early 2000s with notable populations, including one (Myaleik Taung) with what was described as the most significant *G. platynota* population ever found in Myanmar. Populations in all three areas have been reported as subsequently very rapidly reduced to extremely low levels by collection. There are scattered records from elsewhere in central Myanmar, but no recent information from these locations. Three professional hunters reported that they last encountered Burmese Star Tortoises in the wild three to four years ago and have seen none since. Apparently wildlife traders have recently stopped making visits to *G. platynota* areas because few, if any, tortoises are available. The species was assessed by IUCN as Critically Endangered in 2000.

Geochelone platynota was included in the general listing of the family Testudiniade in Appendix II in 1975. Myanmar became a Party to CITES in 1997. Trade has only been reported in the CITES trade database since 1986. From then until 2005, approximately 140 live wild specimens were reported as exported from Myanmar and some 500 re-exports reported as originating from Myanmar. Since 2005, nearly 800 captive-bred specimens and 500 ranched specimens have been reported as exported from Myanmar. An additional 2500 live individuals have been recorded in trade from non-range States, just under half of which have been reported as wild (or with no origin stated) and some of which were re-exports from non-range States.

Commercial harvest and trade of this species is illegal under Myanmar law although export of captive specimens is permitted from one facility within the country, which also contributes to a future release programme.

Analysis: From available information it would appear that *Geochelone platynota* meets the biological criteria for inclusion in Appendix I on the basis of a marked decline as set out in Paragraph C of Annex I to *Resolution Conf. 9.24 (Rev. CoP15)*. It is likely also to have a very small and fragmented population as set out in Paragraph A. The species is in demand for international trade.

Proposal Part A. Inclusion of the following species of the Family Trionychidae in Appendix II: *Aspideretes leithii, Dogania subplana, Nilssonia formosa, Palea steindachneri, Pelodiscus axenaria, P. maackii, P. parviformis,* and *Rafetus swinhoei*

Proposal Part B. Transfer of the following species from Appendix II to Appendix I: *Chitra chitra* and *Chitra vandijki*

Proponent: China and the United States of America

Proposal Part A. Inclusion of the following species of the Family Trionychidae in Appendix II: *Aspideretes leithii, Dogania subplana, Nilssonia formosa, Palea steindachneri, Pelodiscus axenaria, P. maackii, P. parviformis,* and *Rafetus swinhoei*

Summary: This part of the proposal seeks to include eight species of Asian softshelled turtle of the family Trionychidae in Appendix II. Three species of these eight are not currently included in the CITES Appendices: *Aspideretes leithii, Dogania subplana, Nilssonia formosa*. The remaining five species were listed in Appendix III by China in 2005: *Palea steindachneri, Pelodiscus axenaria, P. maackii, P. parviformis,* and *Rafetus swinhoei*. The proposal would have the effect that all south and east Asian species of Trionychidae except the farmed *Pelodiscus sinensis* would be included in CITES (the Mid-East, African and North American species are excluded).

Half the species proposed for inclusion in Appendix II are globally threatened according to the current IUCN Red List: one (*Rafetus swinhoei*) is Critically Endangered, two are Endangered and one is Vulnerable. Of the remainder, one was assessed as Lower Risk/least concern and three (*Palea* spp.) were not evaluated. Recently the IUCN Tortoise and Freshwater Turtle Specialist Group has reviewed current listings and proposed some changes. Almost no quantitative information from assessment or monitoring studies of wild trionychid populations is available. There is good evidence that some of the species, particularly *Rafetus swinhoei,* have undergone marked decline, but trends and the level of risk faced by lesser-known species (such as the *Pelodiscus* spp.) are inferred mainly from the volume of trade and/or the relative availability of specimens in food and pet markets.

Turtles are heavily exploited in many range countries, particularly in China. Heavy exploitation and rising levels of trade between countries are believed to be putting almost all Asian turtles at increasing risk as the focus of collection shifts from one population to another. Softshell turtles are generally considered the most palatable chelonians in Southeast and East Asia, and appear to be more valuable commercially than other chelonian species in the food trade, with smaller specimens of a given species more desirable than larger ones as they are considered to have higher quality meat. Softshell turtles, notably *Pelodiscus sinensis* (not proposed for inclusion in the Appendices), are bred in China and Southeast Asia in very large numbers for consumption.

There is little information on levels of international trade in wild specimens of softshells, even where species have been listed in Appendix III. Loss or degradation of habitat, caused by sand or gold mining, dam construction, drainage and pollution also affects many species. Local subsistence use is high in several areas. Species are nominally protected by law in some parts of the range but it is considered that high levels of unreported trade occur, with substantial cross-border movement in parts of Asia.

Aspideretes leithii (Nilssonia leithii) Endemic to India where confined to large river systems and reservoirs of the central and southern peninsula. Formerly common but reportedly declining at the end of the 20th century, and absent from much of its range. Decline said to be mainly a result of siltation and rivers drying up, although other sources attribute decline (perhaps as much as 90%) to excess collection for trade. There are no survey or monitoring data on population size or trade volume. Heavily used for food, mainly at local level. Assessed as Vulnerable by IUCN in 2000.

Dogania subplana Widely distributed in Southeast Asia, from Myanmar to the Philippines. Reported to be still locally common in much of the range. It is collected for subsistence consumption and trade. It was reported as exported from Medan in some quantity in the late

1990s, with around 200 kg per day received for export. There are no comprehensive data on population size or trade volumes. Present in some protected areas. Assessed as Lower Risk/least concern by IUCN in 2000.

Nilssonia formosa A riverine species largely restricted to Myanmar, but recently reported from Yunnan and may occur peripherally in Thailand. Uncommon to rare in the wild, and reported by fishermen to have declined over recent decades as a result of heavy fishing and egg collection, particularly with the spread of trade networks to formerly remote parts of the range. Also affected by gold-mining and accidental catch. There are no survey or monitoring data on population size or trade volume. Nominally protected by legislation. Assessed by IUCN in 2000 as Endangered.

Palea steindachneri Occurs in southern China (including Hainan), northern Viet Nam and adjacent Lao PDR (also introduced populations in Hawaii (USA) and Mauritius). Highly valued in the food trade. There are no survey data on population size or trade volume. Since its listing in Appendix III in 2005 no trade in this species has been recorded in the CITES trade database. Turtle farms in China produce more than 80 000 individuals annually from a captive stock of 252 000 adults. Considered endangered in the natural range, and assessed by IUCN in 2000 as Endangered globally.

Pelodiscus axenaria A Chinese endemic apparently restricted to Hunan province. Described in 1991, it remains poorly known. It was listed in CITES Appendix III in 2005. Since then the USA and Australia have imported 40 kg and 2 kg, respectively, of *P. axenaria* derivatives from China; Australia has imported 100 bottles of powder from China; the USA has reported import of 1312 live ranched specimens from Thailand (not in the known range), all for commercial purposes. Thailand produces very large amounts of farmed *Pelodiscus sinensis* and it is possible that these were misreported specimens of the latter. Not assessed by IUCN.

Pelodiscus maackii Fairly widespread in northeast Asia, ranging from China, the Korean Peninsula and Russia. Listed in CITES Appendix III (China) in 2005. There is a single subsequent trade record of 100 kg of shells (of wild origin) exported from Mexico to the USA for commercial purposes in 2007. Not assessed by IUCN.

Pelodiscus parviformis Present in southern China and northern Viet Nam. Listed in CITES Appendix III (China) in 2005; no trade subsequently reported. Not assessed by IUCN.

Rafetus swinhoei Formerly occurred in the Yangtse flood plain west of Shanghai, and in the Red River (China/Viet Nam). Can grow to a very large size. Not confirmed in the wild for around 15 years; only four live captive individuals are known to exist, a male and female at Suzhou Zoo in China (where breeding attempts have failed), and two males in separate lakes in and near Hanoi. There is a possibility some individuals remain in the wild. Decline is attributed to excess exploitation, also affected by water pollution and wetland modifications. China listed the species in Appendix III in 2005 and one record of a specimen is recorded as having been exported for educational purposes by China to the Republic of Korea in 2010.

Analysis: Information on population trends and trade volume is not comprehensive and for some included taxa little or no species-specific information is provided in the proposal. The following brief observations can be made regarding whether the species may meet the criteria for inclusion in Appendix II set out in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*, that is whether regulation in trade in the species is necessary to prevent it becoming eligible for inclusion in Appendix I in the near future, or to ensure that harvest for trade is not reducing the population to a level at which its survival might be threatened by continued harvest or other influences.

Aspideretes leithii (Nilssonia leithii) is endemic to India where it has reportedly undergone marked declines. Harvested for local consumption, although information on the extent and impact of use is conflicting; it is not known whether the species enters international trade. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Dogania subplana is widespread in Southeast Asia. Information on its desirability as a food item is conflicting, but it is known to be harvested for export in at least part of its range. The species may

possibly meet the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Nilssonia formosa is known from Myanmar and China and possibly occurs in Thailand. Believed to have declines as a result of overexploitation and other factors and known to occur in food markets in East Asia. The species may meet the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Palea steindachneri occurs in China, Lao PDR and Viet Nam, with introduced populations in the USA (Hawai'i) and Mauritius. Valued in the food trade and reported to be captive-bred in China. There is no information on international trade in this species, or on harvest of wild populations for trade. There is thus insufficient information to determine whether the species meets the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Pelodiscus axenaria is a poorly known species endemic to China. There is little information in international trade, other than report of export of just over 1000 ranched specimens from Thailand (not a range State) to the USA which may be misreported. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Pelodiscus maackii is the most northerly softshell species in Asia, occurring in China, the Korean Peninsula and Russia. The only recorded trade in the CITES trade database (the species was included in Appendix III by China in 2005) is of 100 kg of shells exported from Mexico to the USA in 2007. This is almost certainly a result of misreporting. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Pelodiscus parviformis occurs in southern China and northern Viet Nam. There is no information on status of or trade in this species; it is thus not possible to say whether it meets the criteria for inclusion in Appendix II in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15)*.

Rafaetus swinhoei is only known from four specimens. It clearly meets the biological criteria for inclusion in Appendix I.

From the above, it would appear that *Dogania subplana* and *Nilssonia formosana* may meet the criteria for inclusion in Appendix II in Annex 2 a and that *Rafaetus swinhoei* does not, by virtue of already meeting the criteria for inclusion in Appendix I and there being little likelihood of any harvest for trade. For the remaining species there is insufficient information to determine whether the species do or do not meet the criteria. A general understanding of the dynamics of the turtle trade in Asia, and the fact that softshell turtles are said to be more highly sought after in the food trade than other species, might indicate that they are more likely to than not.

The different species all resemble each other to a greater or lesser degree, and can be distinguished from other chelonians in the region, though they cannot necessarily be told with ease from members of the Trionychidae from other parts of the world. If it is concluded that some of the species considered here meet the criteria for inclusion in Appendix II set out in Annex 2 a to *Resolution Conf. 9.24 (Rev. CoP15),* then it is likely that the other species would meet the criteria in Annex 2 b.

Proposal Part B. Transfer of the following species from Appendix II to Appendix I: *Chitra chitra* and *Chitra vandijki*

Summary: The genus *Chitra*, currently containing three species *Chitra chitra*, *C. indica* and *C. vandijki*, was listed in Appendix II in 2003. This part of the proposal is to transfer *Chitra chitra* and *Chitra vandijki* from Appendix II to Appendix I. There are no reliable estimates of actual population size or density, and the total area occupied within the drainage basins they occur in is not known in detail. There is strong evidence that both have declined and are rare or very rare in many parts of their known ranges, perhaps throughout. IUCN has assessed *C. chitra* as Critically Endangered but has not assessed *C. vandijki* because it was described after the 2000 evaluations. Freshwater

turtles, especially trionychids, are heavily exploited in most range countries, and much trade is focused on China, where demand for turtles for food and medicinal uses has increased greatly, to the extent that collection pressure is depleting turtle populations across the region. There is also demand for the pet trade. Loss or degradation of habitat, caused by sand or gold mining, and the disruption of water flow following dam construction, has affected both these species. They are nominally protected by law in most of the range but it is clear that high levels of illegal trade occur, with substantial cross-border movement between countries in the region. There has been very little reported international trade in *Chitra* since the genus was listed in Appendix II in 2003.

Chitra chitra A large riverine species initially thought to be restricted to Thailand but now known from peninsular Malaysia, Sumatra and Java. Although quantitative population data are not available, the species seems everywhere rare and in serious decline, primarily because of excess exploitation, but also following river modification. Good evidence for increasing rarity in Thailand where collected for food and live animals. Eggs are highly sought after and sandbanks used for nesting are increasingly impacted by changing water flow following dam construction. Not recently confirmed in the wild in Malaysia; rare and poorly known in Sumatra; confirmed to occur in two rivers in northeast Java (treated as a distinct subspecies). Nominally protected by legislation in Thailand and Indonesia. There has been very little international trade in *Chitra* reported to CITES; Malaysia reportedly exported 183 live *Chitra chitra* in 2004, with between 0 and 84 in later years for an annual average of 32 live animals in the period 2000-2011 (CITES Trade Database). Assessed by IUCN in 2000 as Critically Endangered.

Chitra vandijki A large riverine species largely restricted to Myanmar where present in the Ayeyarwaddy (Irrawaddy) drainage and the Salween river, in which extends marginally into northwest Thailand. Although quantitative population data are not available, market surveys and consultation with fishermen suggest the species is everywhere rare or very rare. Fishermen in the remote Upper Chindwin reported that river turtles had declined over the past 20-30 years and attributed this mainly to increased human presence and fishing effort; illegal trade of turtles from here to China only developed around 2000, after turtle populations around Mandalay (a trade centre) became depleted. Sandbanks used for nesting are increasingly impacted by dam construction. Eggs are highly sought after and nests are easily located. Nominally protected by Fisheries and Forestry laws in Myanmar. Held in a captive breeding facility in Mandalay. First formally described in 2003 (from a market specimen in Yunnan believed to have derived from the Ayeyarwaddy in Myanmar) hence not assessed by IUCN in 2000.

Analysis: There is good evidence that both *Chitra chitra* and *C. vandijki* are rare or very rare in many parts of their known ranges, perhaps throughout, and that both have declined markedly in recent decades while habitat area and quality have also decreased in substantial parts of the range, and there is continuing trade demand. Accordingly both *C. chitra* and *C. vandijki* may meet the biological conditions for Appendix I listing under the criteria in Paragraph C of Annex 1 to *Resolution Conf. 9.24 (Rev. CoP15)*. It is not straightforward to assess *Chitra* in relation to criteria in Paragraphs A and B, which require, respectively, a small population size and a restricted distribution area (with additional sub-criteria). Population size is not known for either species and comprehensive distribution information is lacking for both, however, both *C. chitra* and *C. vandijki* may be inferred to meet the basic requirement of Criterion B, and at least subcriteria Biii (vulnerability) and Biv (decrease in individuals and habitat) would apply.

Inclusion of Machalilla Poison Dart Frog *Epipedobates machalilla* in Appendix II

Proponent: Ecuador

Background: *Epipedobates machalilla* (called *Colostethus machalilla* in the reference on which CITES amphibian taxonomy is currently based) is one of nearly three hundred currently recognized species of poison dart frogs or dendrobatids. Owing to concerns regarding the potential impact of the international pet trade on some species of poison dart frogs, two dendrobatid genera – *Dendrobates* and *Phyllobates* – were included in Appendix II in 1987. Soon after, taxonomic revision led to the genus *Dendrobates* being split into two genera, *Dendrobates* and *Epipedobates*, a change subsequently accepted in CITES taxonomy. It was agreed that the intent of the original listing was that all frog species included in the genus *Dendrobates* at the time of the listing were to be included in Appendix II. The listing in the Appendices was therefore changed to include all species in the genera *Dendrobates* and *Epipedobates*. Subsequent changes resulted in three species in the new genus *Epipedobates* being further renamed, two being recognized under current CITES taxonomy as in the large genus *Allobates* (*A. femoralis* and *A. zaparo*) and one in the monotypic genus *Cryptophyllobates* (*C. azureiventris)*. These are currently listed under those names in Appendix II.

When *E. machalilla* was described in 1995, it was included in the genus *Colostethus* which was not listed in the CITES Appendices. Taxonomy of dendrobatid frogs has been subject to extensive revision since the last CITES standard taxonomy for amphibians was adopted (the relevant parts of Frost, D.R. (2004) "Amphibian Species of the World, an online Reference" V. 3.0 (as of April 7 2006)). These changes are reflected in the standard taxonomy to be considered for adoption at CoP16 (Frost, D.R. (2011) Amphibian species of the world, with a revision of the genus *Ranitomeya* by Brown *et al.:* see Notification No. 2012/060). [See analysis below]. One of these changes was to transfer the species *machalilla* from *Colostethus* to *Epipedobates*. Under the revised taxonomy, *Epipedobates machalilla* would be the only currently recognized species in the genus *Epipedobates* not listed in the Appendices.

Summary: The Machalilla Poison Dart Frog *Epipedobates machalilla* is a dark-brown, non-venomous dendrobatid that occurs in the dry western lowland forests of Ecuador. It inhabits tropical thicket, thorny scrub and very dry tropical forest. It is reported to be not rare within its range, but is believed likely to be in decline because of widespread habitat loss as a result of conversion to agriculture and logging. It was assessed by IUCN in 2004 as Near Threatened. It is subject to conservation measures in Ecuador and its geographic range overlaps with Parque Nacional Machalilla and Reserva Ecológica Manglares Churute.

There is very little information on use or trade in *E. machalilla.* However, there is no indication that the species is in demand for the international pet trade, or that it is subject to any extensive domestic use, although some specimens are said to have been used in embryological studies. The species bears a resemblance to the Appendix-II listed *Epipedobates boulengeri;* the latter species is reported in trade as a live animal, albeit at low numbers – it is reportedly not highly sought-after by hobbyists. The CITES trade database records around 50 specimens a year traded between 1994 and 2010 most, particularly those reported in recent years, recorded as captive-bred. Ecuador and Czech Republic were the two major exporting countries. *E. boulengeri* occurs in Colombia and Ecuador and was assessed as Least Concern by IUCN in 2004.

E. machalilla is proposed for inclusion in Appendix II in accordance with Article II paragraph 2 b for look-alike reasons. If the proposal is adopted, all species in the genus *Epipedobates* as recognized in the proposed new standard taxonomy will be listed in Appendix II.

Analysis: There is no indication that regulation of international trade in *Epipedobates machalilla* is necessary to prevent the species itself becoming eligible for inclusion in Appendix I in the near future, nor that it is reducing the population to a level at which it might become threatened by continued harvesting or other influences (criteria for inclusion in Appendix II in Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)*).

Under look-alike criteria, set out in Annex 2 b of *Resolution Conf. 9.24 (Rev. CoP15)*, the species could be included in Appendix II if it resembled a species included in the Appendices under the

criteria in Annex 2 a of the Resolution. The species does resemble the Appendix-II listed *E. boulengeri* to some extent. *E. boulengeri* was included in Appendix II (as *Dendrobates boulengeri*) under the general listing for *Dendrobates* spp. in 1987. This was before formal criteria for amending the Appendices had been established in the original *Resolution Conf. 9.24.* However, there was no indication in the original proposal that the species was included for anything other than very general look-alike reasons, as comprising part of a genus for which concern had been expressed regarding some species. Subsequent experience appears to bear this out: *E. boulengeri* is classified as Least Concern and is reported in trade in low numbers (most now apparently captive-bred), indicating that this species does not itself meet criteria for inclusion in Appendix II under Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)*. Moreover, *E. boulengeri* has been included in Appendix II for 25 years, and *E. machalilla* recognised as a species for 16 years, during which time there appear to have been no problems implementing the Convention for the former species.

Adoption of the new taxonomic standard for amphibians will result in a complicated series of listings of dendrobatid frogs in Appendix II, owing to the many taxonomic changes to the species originally included in the genus *Dendrobates* when it was listed in Appendix II in 1987. Under the new standard, the following will be listed:

- 11 of 12 species in the genus *Andinobates* (species currently included in *Dendrobates*, excluding that described since 2004);
- all 3 species in the genus *Adelphobates* (currently included in *Dendrobates*);
- 4 out of 46 species in the genus *Allobates* (two currently included in *Epipedobates* and two currently listed in Appendix II as *Allobates femoralis* and *Allobates zaparo*, all having originally been included in *Dendrobates*).
- 25 out of 31 species in the genus *Ameerega* (species currently included in *Epipedobates,* excluding six species described since 2004);
- all 5 species in the newly configured genus *Dendrobates;*
- 5 out of 6 species in the newly configured genus *Epipedobates* (excluding *E. machalilla*)*;*
- both species in the genus *Excidobates* (currently included in *Dendrobates*);
- 1 out of 58 species in the genus *Hyloxalus* (currently listed in Appendix II as *Cryptophyllobates azureiventris,* and at different times included in *Dendrobates, Ameerega* and *Phyllobates*);
- 1 species in the monotypic genus *Minyobates* (currently *Dendrobates steyermarki*);
- 8 out of 9 species in the genus *Oophaga* (species currently included in *Dendrobates*, excluding *Oophaga sylvatica*);
- 5 species in the unchanged genus *Phyllobates*;
- 11 out of 17 species in the genus *Ranitomeya* (species currently included in *Dendrobates,* excluding six species described since 2004);

The list above includes seven cases (including *Epipedobates*) where only part of a genus is included in the Appendices. The apparent intent of this proposal is to ensure that all members of the genus *Epipedobates* are now included in Appendix II. However, as the genus *Epipedobates* was not recognised at the time of the original listing, it is not evident that this would necessarily have been the intention of the original proponents. On its own merits *E. machalilla* does not appear to meet the criteria for inclusion in Appendix II, either under Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)* or as a 'lookalike' species under Annex 2 b.

Given that, even if this proposal were accepted, under the proposed new taxonomy, six other genera of dendrobatid frog would only be partially included in Appendix II, it would appear that the inclusion of *E. machalilla* in Appendix II will make no significant contribution to facilitating implementation or enforcement of the Convention for this group of species.

Deletion of Southern Gastric-brooding Frog *Rheobatrachus silus* from Appendix II

Proponent: Australia

Summary: The Southern Gastric-brooding Frog *Rheobatrachus silus* was one of two species in the genus *Rheobatrachus*, both moderately large terrestrial frogs endemic to Australia. Sometimes included in the Australasian anuran (tail-less amphibian) family the Myobatrachidae, CITES taxonomy places the genus in its own family, the Rheobatrachidae. Unremarkable in appearance, both species had an extraordinary reproductive strategy in which the female swallowed fertilised eggs and brooded them in her stomach. *Rheobatrachus silus* was described in 1973 from specimens collected in 1972 and was known from a relatively small area (less than 1400 km^2) of south-east Queensland. The species was last seen in the wild in September 1981 and the last known captive specimen died in November 1983. Extensive searches for the species have been carried out in suitable habitat since 1981 without success.

Rheobatrachus spp. were included in Appendix II in August 1985, by which time both *R. silus* and its sister-species *R. vitellinus* (also the subject of a proposal for deletion from the Appendices (Prop. 41)) were probably extinct. No other species of Australian anuran is included in the Appendices, nor do the *Rheobatrachus* species closely resemble any other anurans listed in the Appendices.

In the highly unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native amphibian species for commercial purposes and requires a permit for export for non-commercial purposes.

Analysis: *Rheobatrachus silus* is almost certainly extinct. It was never recorded in international trade under CITES and, with the exception of *R. vitellinus* (also the subject of a proposal for deletion from the Appendices), does not resemble any other species listed in the Appendices. It therefore does not meet the criteria for inclusion in Appendix II. In the highly unlikely event of its rediscovery, Australian national legislation would prohibit its export for commercial purposes.

Deletion of Northern Gastric-brooding Frog *Rheobatrachus vitellinus* from Appendix II

Proponent: Australia

Summary: The Northern or Eungella Gastric-brooding Frog *Rheobatrachus vitellinus* was one of two species in the genus *Rheobatrachus*, both moderately large terrestrial frogs endemic to Australia. Sometimes included in the Australasian anuran (tail-less amphibian) family the Myobatrachidae, CITES taxonomy places the genus in its own family, the Rheobatrachidae. Unremarkable in appearance, both species had an extraordinary reproductive strategy in which the female swallowed fertilised eggs and brooded them in her stomach. *Rheobatrachus vitellinus* was discovered in early 1984 in eastern Queensland occupying a very limited range (less than 500 km^2) but common across it. A year later in January 1985 declines were noted at the edges of the distribution although it remained present at other sites. In March 1985 no specimens could be found, and none have been found since, despite extensive searches within suitable habitat. The species was assessed as Extinct by IUCN in 2002.

Rheobatrachus spp. were included in Appendix II in August 1985, by which time both *R. vitellinus* and its sister-species *R. silus* (also the subject of a proposal for deletion from the Appendices (Prop. 40)) were probably extinct. No other species of Australian anuran is included in the Appendices, nor do the *Rheobatrachus* species closely resemble any other anurans listed in the Appendices.

In the highly unlikely event of the species being rediscovered, it would be covered by Australian legislation that prohibits the export of native amphibian species for commercial purposes and requires a permit for export for non-commercial purposes.

Analysis: *Rheobatrachus vitellinus* is almost certainly extinct. It was never recorded in international trade and, with the exception of *R. silus* (also the subject of a proposal for deletion from the Appendices), does not resemble any other species listed in the Appendices. It therefore does not meet the criteria for inclusion in Appendix II. In the highly unlikely event of its rediscovery, Australian national legislation would prohibit its export for commercial purposes.

Inclusion of Oceanic Whitetip Shark *Carcharhinus longimanus* in Appendix II

Proponent: Brazil, Colombia and United States of America

Summary: The Oceanic Whitetip Shark *Carcharhinus longimanus* is distributed worldwide in tropical and subtropical open ocean surface (epipelagic) waters between 42°N and 35°S. It has a relatively long life span (13–22 years), late age (4–7 years) and large size (168–200 cm total length) at maturity, relatively long generation time (around 10 years), long gestation time (9–12 months) and small litter size (5–9 pups). Its overall productivity is low (0.08–0.12 yr^{-1}). The species appears to show considerably more site fidelity than most pelagic sharks, and often associates with entities such as buoys, drifting objects and pods of cetaceans.

The Oceanic Whitetip Shark is retained as a valuable secondary catch for fins (and in some cases meat) throughout its range, mainly by longline and purse seine fleets targeting tuna and Swordfish *Xiphias gladius*. There are also a few small-scale targeted fisheries in the Gulf of Aden and the Pacific coast of Central America**.** The fins are in international trade and anecdotal information from traders indicates that their value is high. As with other shark species, information on quantities in trade is limited, chiefly because shark trade is not documented at species level in the Harmonized Commodity Description and Coding System (Harmonized System). However, on the basis of surveys of Hong Kong markets, it was estimated that in 2000 between 0.2 and 1.2 million Oceanic Whitetip Sharks were traded globally.

Historically abundant, various studies have indicated declines, some extreme, in recent decades. In the Central Pacific, there was a 93% decline in standardised catch rates between 1995 and 2010. In the Northwest Atlantic, two separate analyses of the same dataset for 1992–2005 indicated declines of 57% or 70%; two analyses of a different Northwest Atlantic dataset for the same period indicated a decline of 9% or 50%. A decline of 99% in the Gulf of Mexico from the 1950s to the late 1990s has been reported, although the methodology behind the analysis has been questioned. One study shows a recent decline of 40% in the Indian Ocean; however, the species is known to be taken there and is suspected to be undergoing similar declines to those experienced elsewhere. The Oceanic Whitetip Shark was assessed by IUCN in 2006 as Vulnerable globally and Critically Endangered in the Northwest Atlantic and Western Central Atlantic.

A large proportion of Oceanic Whitetip Shark by-catch by pelagic longlines is alive when brought on to the vessel (>75% in the US longline fishery, 76–88% in the Fijian longline fishery) and most individuals would be likely to survive if released unharmed.

Fins from Oceanic Whitetip Sharks are reported to be highly distinctive and easily identified by non-specialists.

The USA is the only country that has implemented any specific national protection for the Oceanic Whitetip Shark, through a combined pelagic quota of 488 t for Oceanic Whitetip Shark, Common Thresher *Alopias vulpinus* and mako *Isurus* spp. Internationally, the Oceanic Whitetip Shark is listed in Annex I, Highly Migratory Species, of the UN Convention on the Law of the Sea. While some countries and Regional Fisheries Management Organisations (RFMOs) have established regulations on the catch or finning of sharks, it is not clear how effective the implementation of these measures is. The International Commission for the Conservation of Atlantic Tunas, the Inter-American Tropical Tuna Commission and the Western and Central Pacific Fisheries Commission have established regulations banning retention on board, transshipment and landing of Oceanic Whitetip Sharks in fisheries covered by their respective agreements. Some other RFMOs have adopted prohibitions on finning, requiring the full use of sharks and promoting the release of live by-catch shark.

The Oceanic Whitetip Shark is proposed for inclusion in Appendix II under *Resolution Conf. 9.24 (Rev. CoP15)* Annex 2 a because it is caught as a valuable secondary catch (and occasionally targeted) for its fins, which are large and have a high international trade value, and because some populations have exhibited marked declines in population size. The proposed listing would include an annotation to delay entry into effect of the inclusion by 18 months to enable Parties to resolve related technical and administrative issues.

Analysis: The Oceanic Whitetip Shark is retained as a valuable secondary catch, driven by the value of the fins in international trade. The species is of low productivity and is consequently sensitive to over-exploitation. There are significant documented declines in major parts of its range, particularly in the Central Pacific and Northwest Atlantic. Little information is available on the status of populations in the Indian Ocean, but similar declines are expected. Information from 2000 indicates that large numbers of Oceanic Whitetip Shark fins were entering trade at that time, and there are no indications that demand has lessened since then. It would therefore appear that the species meets the criteria for inclusion in Appendix II under *Resolution Conf. (Rev. CoP15)* Annex 2 a Criterion A in the Atlantic and Pacific Oceans, in that regulation of the trade is required to ensure that the species does not become eligible for inclusion in Appendix I, assuming that some sub-populations do not already. In the Indian Ocean it would appear that the species meets Criterion B in the Indian Ocean, where regulation of trade is required to ensure that harvest from the wild is not reducing populations to a level where survival might be threatened by continued harvest or other influences.

Inclusion of Scalloped Hammerhead Shark *Sphyrna lewini* Great Hammerhead Shark *Sphyrna mokarran* and Smooth Hammerhead Shark *Sphyrna zygaena* in Appendix II

Proponents: Brazil, Colombia, Costa Rica, Ecuador, Honduras, Mexico and Denmark (on behalf of the European Union Member States acting in the interest of the European Union)

Summary: The Scalloped Hammerhead *Sphyrna lewini,* Great Hammerhead *S. mokarran* and Smooth Hammerhead *S. zygaena* are the three most widely distributed of the seven currently recognised species of hammerhead shark in the genus *Sphyrna*. *S. lewini* is a circumglobal shark species residing in coastal warm temperate and tropical seas in the Atlantic, Pacific and Indian Oceans between 46°N and 36°S to depths of 1000 m. It is relatively long-lived (possibly living 12–32 years) and matures late, with populations in temperate waters evidently maturing later than those in tropical waters; in the north-west Atlantic males mature at six years and females at 15-17, while in the Pacific males and females mature at around four years. It has a relatively small litter size (12–41 pups) after an 8-12 month gestation period and has low productivity. Populations are spatially highly structured by age and sex and may exhibit complex migratory patterns. Aggregations of adults form at seamounts and pregnant females are known to move into coastal waters (between 10 and 20 m) to give birth. Generation times have been calculated as between 5.7–22 years. *S. mokarran* and *S. zygaena* are much less well known, but it is assumed that their life history parameters and productivity are similar.

The three species, most notably *Sphyrna lewini,* are subject to target and non-target fisheries driven by the international demand for their fins, which are highly valued because of their large size and high fin ray count. International shark trade is not documented at the species level for sharks in the World Customs Organisation's Harmonized Commodity Description and Coding System (Harmonized System). However, a study has estimated that between 1.3 and 2.7 million sharks of *S. lewini* and *S. zygaena* (in a 2:1 ratio) are taken for the fin trade each year and that all three species account for nearly 6% of identified fins entering Hong Kong markets. A sample of *S. zygaena* fins sourced from the Hong Kong fin market have been shown to be derived from the Indo-Pacific and eastern and western Atlantic Ocean Basins. Hammerhead meat is also traded internationally; however, it is unlikely that the amount is significant when compared to the volume of fins in trade**.**

All three species generally experience high at-vessel mortality in industrial, artisanal and recreational fisheries. Newborn and juveniles are captured by large- and small-scale fisheries in nursery zones through most of the range.

Trends in stocks are mostly derived from analysis of catch per unit effort (CPUE) information, with some direct stock assessment and landings data. Analysis is hampered because much information is recorded at a generalised level covering either all hammerheads *Sphyrna* spp. or the three species considered here. Such assessments indicate a range of declines in hammerheads in the Northwest Atlantic, Mediterranean, Pacific and Indian Oceans over various time periods, ranging from a 25% decline for 1994–2005, indicated in one study in the Northwest Atlantic, to 85% for 1963–2000 in the West Pacific Ocean, and 99% in the Mediterranean, from historical baselines. One assessment of the Southwest Atlantic detected no trend. Various assessments, specifically of *S. lewinii,* indicate marked declines in the Northwest Atlantic (ranging from 44% for 1995–2005 to 98% for 1972–2003), Southwest Atlantic (60–90% for 1993–2001), East Pacific (71% for 1992–2004) and West Indian Ocean (64% for 1978–2003). There is little specific information on trends in *S. mokarran* or *S. zygaena.*

Sphyrna lewini is listed globally as Endangered on the IUCN Red List, with two of the five subpopulations listed as Vulnerable and three as Endangered. *S. mokarran* is globally listed as Endangered and *S. zygaena* as Vulnerable.

Species-specific management policies for *Sphyrna lewini* have been implemented in some countries and most Regional Fisheries Management Organisations and a number of range States have implemented some form of finning regulation; the three proposed species could be

benefitting from these wherever they are effectively enforced. *S. lewini* or hammerheads as a complex are listed on various international conventions.
Identification of fins of hammerhead sharks to species level is difficult. However, a guide has been created that may help to distinguish between fins of the three hammerheads proposed here and those of other shark species. Fins from other members of the genus *Sphyrna* apparently do not closely resemble those of the three species proposed here.

Sphyrna lewini is proposed for inclusion in Appendix II under *Resolution Conf. 9.24 (Rev. CoP15)* Annex 2 a. The proposed listing would include an annotation to delay entry into effect of the inclusion by 18 months to enable Parties to resolve related technical and administrative issues. *S. mokarran* and *S. zygaena* are proposed for listing in Appendix II under *Resolution Conf 9.24 (Rev. CoP15)* Annex 2 b criterion A for look-alike reasons.

Analysis: *Sphyrna lewini, S. mokarran* and *S. zygaena* are harvested for the international trade of their valuable fins. *S. lewini* is believed to be the main species in trade, although *S. zygaena* also appears to be traded in large quantities. *S. lewini* has low productivity and is highly vulnerable to exploitation; *S. mokarran* and *S. zygaena* are less well known but are assumed to have similar productivity. Significant declines have been reported in a number of populations of *S. lewini* (and in the three species together), ascribed to over-exploitation. Most of these declines are consistent with the indicative guidelines for inclusion in Appendix II of commercially exploited aquatic species with low productivity suggested in the footnote to Annex 5 of *Resolution 9.24 (Rev. CoP15).* Some reported declines are consistent with guidelines for inclusion in Appendix I.

The fins of the three species resemble each other and are frequently traded together. It would appear that *S. mokarran* and *S. zygaena* meet the criteria for listing in Annex 2 bA of *Resolution Conf. 9.24 (Rev CoP15)* based on the difficulty of distinguishing their fins from those of *S. lewini*. It is possible that one or both species meet the criteria for inclusion in Appendix II under Annex 2 a, although information is lacking in this regard.

Inclusion of Porbeagle *Lamna nasus* in Appendix II

Proponent: Brazil, Comoros, Croatia, Egypt and Denmark (on behalf of the European Union Member States acting in the interest of the European Union)

Summary: The Porbeagle *Lamna nasus* is a large (up to 3.6 m) warm-blooded shark found in the North Atlantic (mostly between 30–70°N), the Mediterranean and in a circumglobal band around ~30–60°S in the Southern Hemisphere. It matures late, has a long life span (25–46 years in the North Atlantic), has small numbers of young (average litter size is four pups) and a long gestation time (8–9 months). Northeast Atlantic sharks are slightly slower growing than those from the Northwest Atlantic. Porbeagles in the southern hemisphere are smaller, slower growing and longer lived (to around 65 years) than those in the North Atlantic. The estimated generation time is at least 18 years in the North Atlantic and 26 years in the Southern Oceans. Natural mortality (0.05–0.2 y^{-1}) indicates that the Porbeagle is a low productivity species in both the Northwest Atlantic and Southwest Pacific.

The species is harvested chiefly for its high-value meat, considered among the most palatable of that of any shark species, similar to and sometimes marketed as Swordfish *Xiphias gladius*. It is taken in targeted fisheries and retained as a valuable secondary catch, particularly in longline pelagic fisheries for tuna and Swordfish, but also in gill nets, driftnets, trawls and handlines. Sports fishers catch Porbeagle in the USA, Canada, New Zealand and in some EU Member States; some are taken for meat or trophies, while others may be tagged and released. Recent global reported Porbeagle landings have decreased from 1700 t in 1999 to 750 t in 2009 and 250 t in 2010.

Porbeagle meat is traded in fresh and frozen form. Prior to 2010, a lack of species-specific landings and trade data made it impossible to assess the proportions of global catches entering international trade. However, market survey findings indicated that the demand for fresh, frozen or processed Porbeagle meat was sufficiently high to justify the existence of an international market at that time.

In 2010, the EU introduced new species-specific Customs codes for fresh and frozen Porbeagle products, excluding fins, allowing some assessment of international trade in the species in the last two years. The EU has historically been both a major harvester and a major user of Porbeagle. EU Member States were responsible for 60–75% of FAO's global records of Porbeagle catch in 2006 and 2007, prior to establishment of a total allowable catch (TAC), which was reduced to zero for EU waters and EU fleets in 2010. EU market demand must now therefore be met by imports, of which just over 50 t were recorded 2010–2011. Reported sources of imports were Faroe Islands, Japan, Morocco, New Zealand, Norway and South Africa. Porbeagle fins are in trade, but they have been reported to be of relatively low value per unit weight. It was reported in 2011 that in New Zealand about half of Porbeagles caught by tuna longliners were processed, and the rest discarded. Of those processed, about 80% were finned only and 20% processed for their flesh and fins. Virtually all shark fins landed in New Zealand are exported to Hong Kong. A fin identification guide is now available that may help to identify Porbeagle fins.

Population trends show declines to between 1–32% of baseline in the Northeast Atlantic, Northwest Atlantic and Mediterranean. The three studies of declines in the Southern Hemisphere are over much shorter time periods; two show trends to 25–30% of baseline and one shows no trend. There are also records of a number of fisheries for Porbeagle that have collapsed in the North Atlantic. Porbeagles are listed globally as Vulnerable on the *IUCN Red List of Threatened Species*, with sub-populations assigned individual listings: North East Atlantic (Critically Endangered), Mediterranean (Critically Endangered), North West Atlantic (Endangered).

Various management measures have been introduced, particularly in the North Atlantic, in addition to the current zero quota for EU fishing fleets. Canada established catch guidelines of 1500 t for Porbeagle up to 1997, reduced to a total allowable catch (TAC) of 1000 t for 1997–1999. Following analytical stock assessments, the TAC was further reduced to 250 t, provisionally for 2002–2007, but was reduced again to 185 t (60 t by-catch, 125 t directed fishery) from 2006. The USA adopted a TAC of 92 t in 1999, reduced in 2008 to 11 t, including a commercial quota of 1.7 t. In 2007, Norway banned all direct Porbeagle fisheries; from 2007 to 2011 specimens taken as by-catch had to be landed and sold; since 2011, live specimens have had to be released, whereas dead

specimens can be landed and sold (though this is not obligatory), and the regulations have been adjusted to include recreational fishing.

In the Southern Hemisphere, Porbeagle has been included in New Zealand's Quota Management System since 2004, with a TAC set at 249 t (considerably higher than recent reported catches). Finning and discard of carcasses is permitted. Discards must be reported, but observer coverage is low and the accuracy of the discard data are therefore unknown.

The lower productivity of Porbeagle in the Southwest Atlantic makes stocks here intrinsically more vulnerable to over-exploitation than the largely depleted northern stocks. With the serial depletion of stocks and increasing restrictions on major fisheries in the North Atlantic, it is believed that harvest pressure will increase on the previously relatively lightly fished Southern Hemisphere populations. While there are few data for this region, the New Zealand catch of Porbeagle has increased from just over 40 t in 2008 to 75 t in 2011, and by-catch over the same period has increased from around 4000 to 10 000 sharks (of which approximately 36% were retained).

The Porbeagle is proposed for inclusion in Appendix II under *Resolution Conf. (Rev. CoP15)* Annex 2 a because of marked historic and recent declines to significantly less than 30% of baseline for the largest Atlantic populations and largely unmanaged smaller stocks in the Southern Hemisphere where fisheries are unlikely to be sustainable. The proposed listing would include an annotation to delay entry into effect of the inclusion by 18 months to enable Parties to resolve related technical and administrative issues.

Analysis: The Porbeagle is the target of fisheries mainly driven by the international trade of their valuable meat to Europe. It is also retained as a valuable secondary catch by longline pelagic fisheries for tuna and Swordfish. A recent change in policy has meant that there is a zero catch quota for EU waters and EU fleets, meaning that all market demand within the EU must now be met by imports. The species is sensitive to exploitation and harvest has led to well-documented, significant declines in a number of North Atlantic stocks. These stocks would appear to meet the criteria for inclusion in Appendix II set out in Annex 2 aA to *Resolution Conf. 9.24 (Rev. CoP15);* in some cases, stocks may already be eligible for inclusion in Appendix I. Declines in the Southern Hemisphere are less well documented; however it is known that at least a proportion of the catch enters international trade. Given the serial depletion and closure of fisheries in the North Atlantic, the Southern Hemisphere is likely to become more targeted in the future to meet demand. Furthermore, these stocks are intrinsically more vulnerable to exploitation and in at least some places subject to unregulated fishing. These stocks would appear to meet the criteria for inclusion in Appendix II under the criteria in Annex 2 aB to *Resolution Conf. 9.24 (Rev. CoP15).* It seems likely that the species meets the criteria for inclusion Appendix II.

Transfer of Freshwater Sawfish *Pristis microdon* from Appendix II to Appendix I

Proponent: Australia

Summary: The Freshwater Sawfish *Pristis microdon* is an Indo-Pacific species occurring in rivers, estuaries and marine environments up to 100 km offshore and 400 km upstream. There are very few records from many parts of its extensive former range. This, and taxonomic uncertainty regarding the status of some *Pristis* populations, makes it difficult to determine current occurrence accurately. States where populations ascribed to this species are known to occur or to have occurred in the relatively recent past include Australia, Cambodia, India, Indonesia, Myanmar, Papua New Guinea; Philippines and Thailand. Sub-populations found in northern Australia are likely to comprise a high proportion of the remaining global population. Almost nothing is known about the reproductive biology of *P. microdon;* however, it is thought that females produce 1–12 pups after a five-month gestation period. It is not known if *P. microdon* produces pups annually or every two years. Maximum age of a known individual was 28 years, but theoretical modelling suggests that individuals could live as long as 80 years. Genetic studies have shown that Freshwater Sawfishes are thought to display strong sex-biased dispersal patterns, with females possibly remaining near their birth sites while males may move more broadly between populations. The sedentary nature of females may lead to effective fragmentation of populations, with limited opportunity for re-establishment if local extinctions occur. Of the few adults that have been recorded, most have been reported from marine and estuarine environments; young individuals, in contrast, are primarily recorded in the freshwater reaches of rivers and estuaries.

Pristis microdon is affected throughout its range by artisanal, commercial and recreational fisheries, and also by large-scale habitat modification, and destruction. Climate change and the impacts of diversification of energy sourcing are possible future threats. Sawfishes were once targeted in some parts of their range, but they are now mainly taken as incidental catch: the large toothed rostrum makes them very prone to entanglement in nets. There is very little quantitative information on changes in sawfish populations, but many anecdotal accounts indicating often drastic declines and local extirpations in much of their range. *P. microdon* is listed globally as Critically Endangered on the *IUCN Red List of Threatened Species*. There is national legislation to protect *P. microdon* in parts of its range.

The toothed rostra, fins and meat of sawfishes are all highly valued, and live individuals are highly prized exhibits in public aquaria. International trade in many sawfish products has been documented but few data are available to quantify the international trade. Sawfish fins are regarded as some of the highest quality elasmobranch fins (with high needle content), with a long history of international trade (since at least the 1870s). While pricing information for sawfish fins in the fin trade is hard to come by, some studies have shown the value of the fins (to around USD4000 per set) and rostrum (up to USD1450).

The family Pristidae was included in the CITES Appendices in 2007, with the entire family being included in Appendix I with the exception of *P. Microdon,* which was included in Appendix II for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable aquaria for primarily conservation purposes. This was agreed because it was thought that populations in Australia were sufficiently robust to support a small harvest for the purposes of providing animals to recognised public aquaria. Since then, nine live animals have been exported by Australia. Prior to the listing, Australia issued permits for the export of 13 live animals during the period 2003 to 2006.

Pristis microdon is proposed for transfer from Appendix II to Appendix I because of the historical range decline, inferred and observed decreases in area of distribution and numbers of individuals resulting in fragmented populations, combined with its vulnerability to intrinsic and extrinsic factors. While *P. microdon* is listed in Appendix II for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable aquaria primarily for conservation purposes, in 2011 the Australian CITES Scientific Authority for Marine Species reviewed the 2007 non-detriment finding for the export of *P. microdon* and found that it was not possible to conclude with a reasonable level of certainty that any harvest of *P. microdon* for export purposes would not be detrimental to the survival or recovery of the species. Therefore, Australia has now stopped issuing non-detriment findings for this species. Inclusion of *P. microdon* in Appendix I would align the

listing of this species with those of all other Pristidae species, ensuring easier enforcement of all listings of this family.

Analysis: *Pristis microdon* was included in Appendix II for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable aquaria for primarily conservation purposes. All other species in the genus *Pristis* are listed in Appendix I. Sawfish were once targeted, but they are now mainly taken as incidental catch, notably because their large toothed rostrum makes them very liable to entanglement in nets.

Since the Appendix-II listing, Australia has exported nine live *P. microdon.* However, Australia has recently decided that it cannot determine that trade would be non-detrimental and has stopped issuing non-detriment findings for the species.

There are no estimates of population size for *P. microdon* across any part of its extensive range, nor are there empirical long-term data documenting population trends in *P. microdon.* However, anecdotal evidence and records suggest that, globally, populations of *P. microdon* have been extirpated or nearly extirpated from large areas of their former range. The species is vulnerable to exploitation because of several life history characteristics and also because of severe fragmentation of its population. Given the historic range decline, inferred and observed decreases in area of distribution and numbers of individuals resulting in fragmented populations, it is possible the species meets the biological criteria for inclusion in Appendix I.

Inclusion of the Genus *Manta* (including *Manta birostris*, *Manta alfredi* and any putative species of *Manta*) in Appendix II

Proponent: Ecuador, Brazil and Columbia

Summary: Manta rays (genus *Manta*) are large elasmobranch fishes circumglobal in range. Until recently, the genus was considered to comprise a single species, but two species are now recognised whose distributions overlap in some locations. *M. birostris* is widely distributed, inhabiting tropical, subtropical and temperate waters, while *M. alfredi* is less widely distributed and is found in tropical and subtropical waters. They occur frequently in inshore waters, being particularly associated with productive areas associated with upwellings.

Relatively little is known about life history parameters of manta rays; they are slow-growing and long-lived (>20 years *M. alfredi*; >31 years *M. birostris*) with low fecundity and reproductive output (one pup every two to five years; possibly 5-15 pups over a lifetime) and long generation times. The median intrinsic rate of population increase appears to be extremely low (0.11 yr^{-1}), and among the lowest for any elasmobranch studied to date. Mantas appear to show high site fidelity, congregating at well-known aggregation sites and following migratory pathways. There are indications that there may be little, if any, interchange between different sub-populations. There are no reliable overall population estimates for either species; estimates have been made for some sub-populations, including those of the Maldives (around 5000) and Mozambique (around 600 in the mid-2000s), although it is unclear how representative these are or how many sub-populations there may be in total.

Mantas are harvested in targeted fisheries and retained as a valuable secondary catch. Directed fisheries occur in China, Ghana, India, Indonesia, Mexico (Pacific and Atlantic), Peru, Philippines, Sri Lanka and Thailand. Their behaviour and very large size allows them to be harvested in such fisheries with relatively high catch per unit effort. The gill plates, which *Manta* spp. use to filter planktonic food from the water, are highly valued in international trade, particularly in Asian markets. A single mature *M. birostris* can yield up to 7 kg of dried gills that retail for up to USD680 per kg in China. Records cannot be quantified fully, due to a lack of species- and product-specific data, but aggregation of data from a number of sources indicates annual manta landings from known fisheries to be around 3000 individuals. Total catch is believed to be somewhat higher, owing to unreported landings in some areas. An analysis of surveys in the major *Manta* spp. gill plate markets has resulted in an estimate of around 21 000 kg of gill plate of *Manta* spp. in trade annually, equivalent to 4500-5000 individuals. Reports from fishermen, traders and retailers indicate that manta gills are becoming harder to source. Cartilage and skins are traded internationally. Artisanal fisheries also target mantas for food and local products. Small numbers of *M. birostris* and *M. alfredi* are also caught and transported to aquaria for use in large display tanks in the USA, Bahamas, Portugal, Japan and South Africa. All use and trade in the products of mantas is derived from wild-caught animals.

FAO catch data do not distinguish between manta and devil ray catch, and are apparently incomplete. Reported catches for the two groups combined increased from 342 t in 1998 to 931 t in 2000, decreasing to around 100 t per year between 2001 and 2003, increasing to over 4000 t in 2008 and decreasing subsequently.

Reported population declines for both *M. birostris* and *M. alfredi* appear high in several locations with reported local declines as high as 50-86% over one generation or less in areas with targeted fisheries. In contrast, some sub-populations that are not fished or are within protected areas in Hawaii (USA), Maldives, Palau and Yap (Federated States of Micronesia) appear stable. Both *M. birostris* and *M. alfredi* are listed globally as Vulnerable on the *IUCN Red List.*

A number of range States have legislation that prohibits the catch of or trade in *Manta* spp. However, the effectiveness of these measures varies and the three countries that have reported highest landings in recent years are not known to have any landing restrictions or population monitoring programmes. *M. birostris* is listed in both Appendix I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), but *M. alfredi* is not. No Regional Fisheries Management Organisations (RFMO) have adopted binding measures specifically to protect or regulate landings of *Manta* spp.

All *Manta* spp. are proposed for inclusion in Appendix II under *Resolution Conf. 9.24 (Rev. CoP15)* Annex 2 aA because of their low productivity and increasing international trade in manta gill plates, and to a lesser degree skins and cartilage.

Analysis: Manta rays are very large, slow-growing fishes with extremely low productivity. Their behaviour makes them highly susceptible to over-exploitation. Mantas are exploited for their gill plates, which enter international trade. Available information indicates that trade in the gill plates has increased considerably in recent years. There are also indications of recent declines in some exploited sub-populations that appear to be consistent with the indicative guidelines for commercially exploited aquatic species with low productivity suggested in the footnote to Annex 5 of *Resolution 9.24 (Rev. CoP15).* There are indications that interchange between sub-populations is low, so that serial depletion of exploited sub-populations may be expected. Other sub-populations that are not currently subject to fishing pressure appear to be stable; however, it is not known what proportion of the total population these represent. Most of the populations known to be heavily exploited are not currently covered by any landing restrictions and no RFMOs have binding regulations covering mantas. Overall, it appears that *Manta* spp. may meet the criteria for inclusion in Appendix II under *Resolution Conf. (Rev. CoP15)* Annex 2 aB, in that regulation of trade may be required to ensure that harvest from the wild is not reducing the population to a level at which is survival might be threatened by harvesting or other influences.

Manta spp. are often confused with the devil rays (*Mobula* spp.) also in family Mobulidae. Fisheries for *Mobula* spp. generally occur in the same locations as fisheries for *Manta* spp. Mobula rays are also targeted for international trade in their gill plates. The same term is commonly used in international trade to describe gill plates from both genera so that differentiating the two may pose problems in enforcement. A manual has been prepared to assist in gill plate identification for these groups.

Inclusion of *Paratrygon aiereba* in Appendix II

Proponent: Colombia

Summary: *Paratrygon aiereba* is a widespread freshwater stingray that occurs in the main channels of some large South American rivers in the Plurinational State of Bolivia (Bolivia), Brazil, Colombia, Ecuador, Peru and Bolivarian Republic of Venezuela (Venezuela). Little is known about the biology of this species. It is a large ray reaching up to 130 cm disc width and has low fecundity, producing two offspring every second year. It is one of 25 or so members of the family Potamotrygonidae, a family of freshwater elasmobranch fishes confined to South America. Population numbers are unknown although the species has been reported as occurring in high densities in some areas. It is harvested (particularly juveniles) in commercial and artisanal fisheries for the international ornamental fish trade, for domestic human consumption and for export as a food item. It is also believed to be affected by habitat destruction and there is some indication that it is persecuted because of the risk it poses to tourists (it has a very painful sting). Recently, it has not been observed in some areas in Venezuela and Colombia where it was previously considered abundant. Information on the magnitude of declines, however, is not available. It was assessed by IUCN in 2009 as Data Deficient.

International demand for the species, both for live specimens and meat, may be increasing, in particular in Asia. It is not easily found for sale on the Internet, although specimens are advertised on aquarium sites and in specialist fora. The only species-specific trade data available for *Paratrygon aiereba* are for the reported export of 216 individuals between 2007 and 2011 from Colombia, mainly to Thailand, Hong Kong and Russia. There are many trade names used for *P. aiereba*, however, so trade in this species may well to be under-estimated. The main consumers of freshwater stingray meat are said to be Japan, the Republic of Korea and large cities in south and east Brazil.

Data are available on trade in the family Potamotrygonidae in general. It is not known how much of the recorded trade can be attributed to this species, nor how complete this information is. Brazil recorded the export of 36 000 specimens of Potamotrygonidae between 2003 and 2005. Colombian exports averaged about 25 000 specimens per year between 1995 and 2006 (ranging between 15 000 and 30 000), after which there was a large increase to a peak of over 60 000 individuals exported in 2008. Exports in the period 2009–2012 declined again to approximately 25 000 specimens per year.

Since 1990, export of some species of Potamotrygonidae, including *P. aiereba*, as live specimens has been prohibited by Brazil, although export of meat is still permitted. In Colombia, commercial fishing for *P. aiereba* for ornamental purposes can only be carried out with authorization and permits from the National Fisheries Authority, which also determines open and closed seasons for the fishery. Ecuador has a specific regulation on the collection of ornamental fish not listed in the CITES Appendices. There is some indication of illegal cross-border trade, with fishes imported from Brazil and Ecuador into Colombia or Peru for re-export.

The proposal is to list *Paratrygon aiereba* in Appendix II, with an 18-month delay prior to the listing coming into force, in order to help Parties prepare and develop appropriate technical and management measures required for such a listing.

Analysis: *Paratrygon aiereba* is a widespread species in large rivers in South America targeted in fisheries; both meat and live fishes enter international trade. It is believed sensitive to the impacts of fishing because of its low productivity. Although there are concerns that numbers are declining owing to over-exploitation, details of the magnitude of any declines in exploited populations are not available, nor is it clear what proportion of the population is subject to harvest, nor what proportion of the harvest enters international trade. Therefore, there is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II.

Inclusion of Ocellate River Stingray *Potamotrygon motoro* and Rosette River Stingray *Potamotrygon schroederi* in Appendix II

Proponent: Colombia and Ecuador

Summary: The Ocellate River Stingray *Potamotrygon motoro* and Rosette River Stingray *P. schroederi* are freshwater stingrays from South America in the family Potamotrygonidae, a family of around 25 species of freshwater elasmobranch fishes confined to South America. *P. motoro* has a wide distribution in Argentina, the Plurinational State of Bolivia (hereafter Bolivia), Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname and Bolivarian Republic of Venezuela (hereafter Venezuela); *P. schroederi* has a more restricted distribution and is found in Brazil, Colombia and Venezuela. Little information is available on the biology and fecundity of these species. *P. motoro* can reach a maximum reported weight of 10 kg with a wing diameter of around 50 cm. *P. schroederi* is similar in size or somewhat larger (wing diameter around 60 cm). Gestation periods are thought to be long and growth slow. *P. motoro* reaches sexual maturity during its third year; the litter size is always an odd number, varying from three to 21. *P. schroederi* has an average uterine fecundity of two embryos. Information on the population sizes of these species is also sparse, although both were apparently historically abundant in the main harvest area of Estrella Fluvial de Inírida in Venezuela and Colombia. There are consequently few data to evaluate the impact of harvest and trade. Both species have been assessed as Data Deficient by IUCN, *P. motoro* in 2005, *P. schroederi* in 2009. Both species were classified as vulnerable in the Colombian National Red List Assessment in 2012.

The species are harvested in commercial and artisanal fisheries for the ornamental fish trade, particularly targeting juveniles; they are reportedly also harvested for food, both for local consumption and export, although the extent of such harvest is unclear. They may also be affected by habitat modification. Some recent surveys targeting these species have obtained low catches or failed to find them in areas where they were previously known to occur.

Potamotrygon motoro and *P. schroederi* are traded internationally as ornamental fish. Based on export records, which are not entirely consistent, it seems that an average of around 8000 specimens a year of *P. motoro* were exported from Colombia in the period 1999–2009, with an additional several thousand specimens a year exported from Brazil up to 2008, when domestic regulations on the fishery were introduced. Peak export year for Colombia was 2009, when over 12 000 specimens were reported as exported. Since 2007, recorded annual export of *P. schroederi* from Colombia has been at around half the level of that of *P. motoro,* amounting to several thousand specimens a year. There is little information on export of this species from Colombia before 2007, although it is not clear whether this is because little export was taking place, or data are lacking. A large proportion of reported *P. schroederi* landings in the Inírida region of Colombia (the apparent source of many of the specimens in trade) are believed to have been in fact landed in Venezuela.

Brazil is the only range State for either of these species known to have specific regulations in place to control exports of aquatic species for ornamental purposes (quotas agreed). Harvesting in Colombia can only be carried out during specified seasons and with the necessary permits and authorisations. In Argentina (a range State for *P. motoro*), there has reportedly been little export of any live freshwater stingrays since 2000.

The proposed listing would include an annotation to delay entry into effect of the inclusion by 18 months, to enable Parties to resolve technical and administrative issues.

Analysis: *Potamotrygon motoro* and *P. schroederi* occur in fresh waters in South America. Both are targeted in fisheries for the international ornamental fish trade.

Potamotrygon motoro has a very wide distribution. The main harvesting areas appear to be the Estrella Fluvial de Inírida region in Venezuela and Colombia and the Rio Negro tributary of the Orinoco in Colombia. It is not clear whether harvest for export occurs in any significant numbers in any other parts of its extensive range, although this seems unlikely. In the past, some collection for export appears to have taken place in Argentina, the far south of the species' range, but this has apparently now ceased. Export levels are unknown, although may number in the region of 10 000

per year, predominantly from Colombia. Some studies have shown *P. motoro* at low densities in harvested areas. However, there is little quantitative information regarding the magnitude of any declines.

Potamotrygon schroederi is a more restricted species, although it still has an extensive range. There are some indications of local declines, ascribed to over-exploitation, and the species is considered rare in parts of its range; reported export is almost entirely from Colombia, although it is thought that a significant proportion of reported landings in that country in fact originate in Venezuela, suggestive of depletion within harvesting areas in Colombia. However, it is not known how extensive harvest for export is within the overall range of the species, nor what impact such harvest has on the population of the species as a whole.

Overall, there is currently insufficient information to determine if either species meets the criteria for inclusion in Appendix II.

Transfer of the Corsican Swallowtail *Papilio hospiton* from Appendix I to Appendix II

Proponent: Denmark (on behalf of the European Union Member States acting in the interest of the European Union)

Summary: The Corsican Swallowtail *Papilio hospiton* is a butterfly endemic to the European islands of Corsica (France) and Sardinia (Italy). It is widespread and locally abundant on both Corsica and Sardinia. Population numbers were estimated at greater than 10 000 adults in 2010 and are considered stable or to be increasing. Movement between sub-populations and suitable habitat is known to occur.

It was first listed as Endangered on the IUCN Red List in 1986 and at that time was considered one of the rarest of European butterflies, being threatened by habitat destruction and collecting. The species has been protected in France since 1979 and in Italy since 1981 and was included in CITES Appendix I in 1987 and is also protected through the EU Habitats Directive and Bern Convention. It appears that the elusive nature and scattered occurrence of adults, in addition to fluctuations between years, led to the species being assumed to be rare in the past and it is now considered to be more common than previously thought and even abundant locally. No major threats are known now and in 2010 the species was re-assessed by IUCN as Least Concern, with an increasing population trend.

According to CITES trade data, legal international trade from 1987 to 2010 totalled a maximum of seven bodies. There is minimal evidence of illegal trade or offers for sale over the internet and the effects of commercial collection on the population are considered negligible, as any small areas sampled by collectors are regularly re-populated from surrounding areas. Wild collection is prohibited in France and strictly controlled in Italy. The only other possible threat to the species is due to habitat modification occurring on both islands and specifically the removal of food/host plants such as *Ferula communis.* However, *Papilio hospiton* is found in a number of protected areas (in which it is considered common or abundant) and provided that traditional land use (grazing and controlled burning) is continued outside these protected areas, habitat modification is not likely to be a serious threat to the species.

In 2011, at its 25th meeting, the CITES Animals Committee selected the species for review under the Periodic Review of the Appendices taking place between CoP15 and CoP17. The two range States for *P. hospiton* conducted the review on behalf of the EU. The proponent seeks to transfer *P. hospiton* from Appendix I to Appendix II in accordance with precautionary measures A1 and A2 a/b of Annex 4 of *Resolution Conf. 9.24 (Rev. CoP15)*, with the view that the species no longer meets the biological criteria for inclusion in Appendix I, nor is it in demand in international trade. The proponent states that it does not consider down-listing necessarily a first step to deletion of the species from the Appendices. If the species is transferred to Appendix II, the proponent notes that consequences of this action will be carefully monitored to evaluate further actions.

Analysis: Available evidence suggests that *Papilio hospiton* no longer meets the biological criteria for inclusion in Appendix I, as the population cannot be considered small (estimated at over 10 000 adults) nor can its area of distribution (over 20 000 km^2) be considered small. The population is thought to be stable or increasing and faces no major threats. The species does not appear to be in demand for international trade, nor is its transfer to Appendix II likely to stimulate trade in, or cause enforcement problems for, any other species included in Appendix I. There may be some demand for the species from collectors, however, it is legally protected under the EU Habitats Directive, protected nationally in both its range States and a considerable proportion of its range lies within protected areas. Even if transfer to Appendix II were to stimulate demand for the species, the population is believed to be able to withstand a certain level of collection pressure and the range States appear to have the necessary management and enforcement capacity and controls in place.

Inclusion of *Yucca queretaroensis* in Appendix II

Proponent: Mexico

Summary: *Yucca queretaroensis* is a cold-hardy succulent plant endemic to Mexico where it occurs in the Sierra Madre Oriental in the states of Guanajuato, Querétaro and Hidalgo, specifically in the region known as the "Queretano-Hidalguense Semi-desert", occupying an estimated area of 600 km^2. It has a fragmented distribution, with subpopulations consisting of up to 20 individuals, separated by natural geological barriers such as canyons and steep hillsides. Some populations are relatively inaccessible and part of the habitat of the species is included in protected areas although it is not clear how effective protection is. Other populations are relatively accessible. The overall population is estimated at around 60 000 individuals and regeneration is reportedly limited, being mostly through offsets. Seed is apparently not set every year. The species has not been assessed against the Global IUCN Red List categories and criteria. A recent assessment in Mexico suggests that it could be classified as "at risk of extinction".

Yucca queretaroensis is considered a particularly attractive species of *Yucca* and is harvested principally as an ornamental plant for both local and international markets. Its relative cold-hardiness is likely to make it of particular interest to collectors in Europe and parts of North America. It is traded mainly as a living plant although trade in seeds also occurs. Locally, its flowers are also used in traditional festivals and the species was historically used in roof-making. *Y. queretaroensis* is in international trade, both as large, wild-collected plants and as artificially propagated specimens. Currently at least 300-500 wild-collected plants are believed to be imported into Europe each year, with larger numbers imported in the past. Artificially propagated plants have recently become available in Europe in some quantity. Mature plants command relatively high prices. The species resembles other *Yucca* species in trade, including *Yucca rostrata* and *Y. linearifolia*, neither of which is included in the Appendices, nor proposed for inclusion.

The species is listed under the category "subject to special protection" on the Mexican national red list (Sujeta a protección especial, Pr, Norma Oficial Mexicana NOM-059-SEMARNAT-2010). A more recent assessment suggests the species could be classified in the higher category of "at risk of extinction".

Analysis: *Yucca queretaroensis* has a relatively restricted distribution in Mexico. Its wild population is thought to number in the tens of thousands, although it apparently shows limited regeneration in the wild. It is sought-after as a horticultural plant and mature, wild-collected specimens enter international trade in some number, with at least 300-500 reported to be imported annually into Europe. If the estimate of the wild population is reliable and given its relatively limited regeneration capacity, the species may meet the criteria for inclusion in Appendix II in that regulation of trade may be required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences (Paragraph B of Annex 2 a to *Resolution Conf. 9.25 (Rev. CoP15)*). The species resembles other *Yucca* species in trade so that identification of specimens in trade might be problematic.

Inclusion of *Operculicarya decaryi* in Appendix II

Proponent: Madagascar

Summary: *Operculicarya decaryi* sometimes known as jabihy is a deciduous thick-stemmed (pachycaul) tree endemic to Madagascar which can grow up to nine metres tall. It is one of eight species in the genus *Operculicarya*, seven of which are endemic to Madagascar, with the eighth (*O. gummifera*) occurring in Madagascar and the Comoros. It is widespread in thorny scrub and degraded semi-deciduous forest at low altitude in southern Madagascar, within an overall area of some 90 000 km^2 and an area of occupancy of at least 3000 km^2, with at least 30 subpopulations within this area. The species can be locally abundant, with an estimate of over 30 000 individuals within one sub-population. The species is present in at least three protected areas (Cap Sainte Marie Special Reserve and Andohahela and Tsimananpetsotsa National Parks).*O. decaryi* is cultivated as an ornamental plant due to its bonsai form, particularly in China. Wild collection has reportedly taken place. Exports from Madagascar, apparently mostly of small plants is recorded as having taken place. Some 3400 plants were recorded by the CITES Management Authority of Madagascar as exported in the period 2003-2006, most (around 2700) in 2006. Exports have not been reported since then. The species is reported to be straightforward to propagate. In China recent trade is said to be largely or entirely in cultivated plants. The species has reportedly been in cultivation in China for some time, so that large, mature plants may be available from artificially propagated material. Current legal controls in Madagascar on collection and export are unclear.

O. decaryi was proposed for inclusion in Appendix II at CoP15 in 2010, but the proposal was withdrawn at the CoP. Two species of *Operculicarya* also endemic to Madagascar (*O. hyphaenoides* and *O. pachypus*) were included in Appendix II at CoP15. Since then importers have reported a small amount of trade in *O pachypus* (50 wild specimens in 2010 and 50 in 2011) but none in *O. hyphaenoides*. Madagascar has reported export of 350 *O. pachypus* and 275 *O. hyphaenoides*, but these are likely to have been on the basis of permits issued rather than actual exported recorded.

Analysis: *Operculicarya decaryi* is a widespread and evidently at least locally abundant tree in southern Madagascar. It has been exported in some number for the horticultural plant trade in the relatively recent past. No exports have been reported since 2006. The species is widely available as an artificially propagated plant. It is extremely unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

Amend annotation #9 related to *Hoodia* spp. to read as follows, for the purpose of clarification:

All parts and derivatives except those bearing a label: Produced from *Hoodia* spp material obtained through controlled harvesting and production in terms of an agreement with the relevant CITES Management Authority of [Botswana under agreement no. BW/xxxxxx] [Namibia under agreement no. NA/xxxxxx] [South Africa under agreement no. ZA/xxxxxx].

Proponents: Botswana, Namibia, South Africa

Summary: *Hoodia* is a genus of succulent plants in the family Apocynaceae found in Angola, Botswana, Namibia and South Africa. Fourteen species are currently recognised in the CITES species database. Extracts from *Hoodia* species are used locally for medicinal purposes and have been identified as having commercial potential as appetite suppressants. The genus was included in Appendix II at CoP13 (2004) with the following annotation:

> All parts and derivatives except those bearing a label "Produced from *Hoodia* spp. material obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of Botswana/Namibia/South Africa under agreement no. BW/NA/ZA xxxxxx".

This annotation could be interpreted as meaning that to qualify for exemption, any product must bear a label in exactly the form specified, that is containing the designations "Botswana/Namibia/South Africa" and "BW/NA/ZA". This would imply the existence of joint agreements in each of which all three CITES Management Authorities participated.

The intention of the listing was that the CITES Management Authority of each of the three countries would enter into its own separate agreements with producers in that country and issue its own labels. The current proposal clarifies this.

Analysis: This proposal clarifies an existing annotation and should bring implementation of the Convention into line with the original intention of the listing. It should have no other effects.

Amend the annotation to the listings of *Panax ginseng* and *Panax quinquefolius* included in Appendix II

Amend Annotation #3 with the underlined text:

"Designates whole and sliced roots and parts of roots, <u>excluding manufactured parts or derivatives such as powders, pills, extracts, tonics, teas and confectionery.</u>"

Proponent: United States of America

Summary: *Panax ginseng* and *Panax quinquefolius* are herbaceous plants whose roots yield ginseng, a very widely used herbal medicine or tonic. *P. quinquefolius* is native to Canada and United States of America; *P. ginseng* is native to China, Democratic People's Republic of Korea, Republic of Korea, and Russian Federation.

P. quinquefolius was included in Appendix II when the Convention came into effect in 1975 with an annotation indicating the listing was for roots only. Various modifications to this annotation were made at subsequent CoPs. In 2000 the Russian Federation population of *Panax ginseng* was included in Appendix II with an annotation indicating "whole and sliced roots and parts of roots, excluding manufactured parts or derivatives such as powders, pills, extracts, tonics, teas and confectionery." At the same CoP this annotation was also applied to *P. quinquefolius.*

At CoP14, at the request of the Plants Committee, Switzerland as the Depositary Government submitted a proposal to amend the annotations for Appendix-II listed medicinal plant species including *Panax ginseng* and *Panax quinquefolius* (CoP14 Prop. 27). The amendment to annotation #3 as adopted removed the exclusionary language "excluding manufactured parts or derivatives such as powders, pills, extracts, tonics, teas and confectionery" and now reads merely "whole and sliced roots and parts of roots." Current annotation #3 only applies to these two species.

Since this amendment, there has reportedly been confusion regarding whether manufactured products are subject to the provisions of the Convention. It is considered that much of this confusion is a result of the removal of the exclusionary language from the annotation adopted at CoP14.

The proponents propose reinstating the exclusionary language deleted at CoP14 in order to clarify what specimens of *Panax ginseng* and *Panax quinquefolius* are regulated under CITES, and to avoid potential seizures of shipments of parts and derivatives not intended to be covered by the annotation.

Analyses: Adoption of this proposal to reinstate the wording "excluding manufactured parts or derivatives such as powders, pills, extracts, tonics, teas and confectionery" to the annotation for *Panax ginseng* and *Panax quinquefolius* should simplify the implementation of the Convention by clarifying what is and what is not included under the listings of these species, ensuring that the former is in line with the original intent of the listings. It should have no other effect.

Deletion of *Tillandsia kautskyi* from Appendix II

Proponent: Brazil

Summary: *Tillandsia kautskyi* is a epiphytic bromeliad plant known from only a few specimens collected in the State of Espíritu Santo in Brazil. It is found singly or in small clumps on the mountainous slopes of the Atlantic Forest. Very little is known about the species, its population size, structure or trends. The habitat of the species has been severely affected by logging and habitat conversion for agriculture and livestock-raising. Only 10% of the State's original Atlantic Forest currently remains, and the forest around Domingo Martins where the species was first located was logged for timber in the 1990s. It is listed as endangered in the List of Threatened Species of the State of Espíritu Santo. It was also listed as Endangered in the 1997 IUCN Red List of Threatened Plants; this designation is noted as in need of updating. Remaining populations are reported to be relatively secure, being found in protected areas or in inaccessible rocky outcrops, although potential risks remain, such as bushfires caused by crashing hot air balloons released in village festivals.

Tillandsias in general feature in the horticultural plant trade. Some forms are artificially propagated in very large numbers and widely sold as ornamental plants. Others are grown largely by enthusiasts. *Tillandsia kautskyi* was included in Appendix II in 1992 owing to concerns regarding the possible impact on it of wild-collection for international trade. The original listing proposal at CoP8 covered all *Tillandsia* spp. At the CoP it was agreed to include only seven species, including three endemic to Brazil: *T. kautskyi*, *T. sprengeliana* and *T. sucrei.* All three species are the subject of proposals for deletion from the Appendices (see CoP16 Prop. 55 and Prop. 56).

Tillandsia kautskyi is in international trade. However all trade reported in the CITES trade database has been reported to be in artificially propagated specimens. Exporters reported trade in nearly 600 artificially propagated live plants between 1992 and 2010, the majority of which were exported directly from Brazil to the US, Hong Kong and Germany before 1997. Exports from non-range States have also been reported, the majority of these (115) specimens originated in Hungary between 2005 and 2010. Artificial propagation of this species from seed is known to occur in Germany and Hungary; artificially propagated plants are offered for sale on the internet. Demand for this species by enthusiasts continues, however it appears that this demand is fully supplied by artificially propagated specimens. No exports of wild specimens have been reported since the species was listed and there is no evidence of ongoing wild collection or illegal trade. The remaining sub-populations are considered safe from harvesting.

Tillandsia kautskyi is said to be similar in appearance to *T. brachyphylla*, which is not listed in the Appendices. It is similar in appearance to *T. sprengeliana*, which is also proposed for removal from the Appendices (CoP 16 Prop. 55), both being miniature plants. It can be easily distinguished from all the Central American species of *Tillandsia* listed in the Appendices.

This proposal has resulted from the Plants Committee's Periodic Review process.

Analysis: This species has a restricted range and is unlikely to be able to withstand large scale harvest for export. The remaining sub-populations are considered safe from harvesting as most plants are found in two protected areas and/or on inaccessible rocky outcrops. All reported international trade in this species since listing in Appendix II has been in artificially propagated specimens, with the majority (several hundred specimens) having been exported directly from Brazil before 1997. Demand for this species by enthusiasts continues, and artificial propagation is reportedly the only source of specimens now in trade. There is no evidence of ongoing wild collection or illegal trade.

It would appear that *T. kautskyi* no longer fulfils the criteria for inclusion in Appendix II as regulation of trade is not required to ensure harvesting of specimens from the wild does not threaten the survival of the species. No exports of wild harvested plants has taken place in the 20 years since the species was listed in Appendix II and it seems unlikely that its removal from the Appendices would stimulate trade in wild specimens such that it would meet the criteria for listing in Appendix II in the near future, as outlined in the precautionary measures, Annex 4 A4 of *Resolution Conf. 9.24 (Rev. CoP15)*.

The three *Tillandsia* species being proposed for removal from the Appendices are among dozens that are in trade, the vast majority of which are not included in the Appendices. They appear to be easily distinguished from the species that would remain in the Appendices, all of which occur in Central America.

Deletion of *Tillandsia sprengeliana* from Appendix II

Proponent: Brazil

Summary: *Tillandsia sprengeliana* is an epiphytic bromeliad plant known from four states in Brazil - Rio de Janeiro, Espíritu Santo, Minas Gerais and Bahia. It is found in a variety of habitats, ranging from coastal vegetation and forest to the cerrado and montane subtropical savannah. It has been described as being common and/or abundant on the island of Cabo Frio in Rio de Janeiro and in the Abaira region of Bahia, however very little else is known about the species, its population size, structure or trends. A number of sub-populations are known to occur in protected areas. Is listed as endangered in the List of Threatened Species of the State of Espíritu Santo, owing to the degradation of its habitat, in particular due to the large amount of settlement in the coastal regions of this state. It was also listed as Endangered in the 1997 IUCN Red List of Threatened Plants; this designation is noted as in need of updating.

Tillandsias in general feature in the horticultural plant trade. Some forms are artificially propagated in very large numbers and widely sold as ornamental plants. Others are grown largely by enthusiasts. *Tillandsia sprengleriana* was included in Appendix II in 1992 owing to concerns regarding the possible impact on it of wild-collection for international trade. The original listing proposal at CoP8 covered all *Tillandsia* spp. At the CoP it was agreed to include only seven species, including three endemic to Brazil: *T. sprengeliana, T. kautskyi* and *T. sucrei.* All three species are the subject of proposals for deletion from the appendices (see CoP16 Prop. 54 and Prop. 56).

Since the species was listed fewer than 140 specimens have been recorded in trade under CITES, all reported as artificially propagated specimens originating in non-range States, mainly Hungary. No trade from Brazil has been reported. Artificial propagation of this species from seed is known to occur in Germany and Hungary, and artificially propagated plants are offered for sale on the internet in a number of other countries, including the Czech Republic, United States and the Russian Federation. Demand for this species by enthusiasts continues, however it appears that this demand is fully supplied by artificially propagated specimens. No exports of wild specimens have been reported since the species was listed and there is no evidence of ongoing wild collection or illegal trade.

Tillandsia sprengeliana is said to be similar in appearance to *T. brachyphylla*, which is not listed in the Appendices. It appears to be similar in appearance to *T. kautskyi*, which is also proposed for removal from the Appendices (CoP16 Prop 54), both being miniature plants. It can be easily distinguished from all the Central American species of *Tillandsia* listed in the Appendices.

This proposal has resulted from the Plants Committee's Periodic Review process.

Analysis: *T. sprengeliana* has been recorded in four Brazilian states, is found in a variety of habitats, ranging from coastal vegetation and forest to the cerrado and montane subtropical savannah and has been described as common or abundant in some locations. Since the species was listed in Appendix II in 1992 limited trade has been reported in artificially propagated specimens (fewer than 140) and there has been no reported export of the species from Brazil. It would appear that *T. sprengeliana* no longer fulfils the criteria for inclusion in Appendix II as regulation of trade is not required to ensure harvesting of specimens from the wild does not threaten the survival of the species. No exports of wild harvested plants has taken place in the 20 years since the species was listed in Appendix II and it seems unlikely that its removal from the Appendices would stimulate trade in wild specimens such that it would meet the criteria for listing in Appendix II in the near future, as outlined in the precautionary measures, Annex 4 A4 of *Resolution 9.24 (Rev. CoP15)*.

The three *Tillandsia* species being proposed for removal from the Appendices are among dozens that are in trade, the vast majority of which are not included in the Appendices. They appear to be easily distinguished from the species that would remain in the Appendices, all of which occur in Central America. It is unlikely that their removal from the Appendices would cause any enforcement issues.

Deletion of *Tillandsia sucrei* from Appendix II

Proponent: Brazil

Summary: *Tillandsia sucrei* is a rare epiphytic bromeliad plant with a very restricted range. It is known from only a small patch of Atlantic Forest of the State of Rio de Janeiro in Brazil where grows individually or in small clumps on sheer rock walls. Very little is known about the species, its population size, structure or trends. It was listed as critically endangered on the Brazilian national Red List in 2005. It was also listed as Endangered in the 1997 IUCN Red List of Threatened Plants; this designation is noted as in need of updating. The species occurs in Tijuca National Park within the urban district of Rio de Janeiro.

Tillandsias in general feature in the horticultural plant trade. Some forms are artificially propagated in very large numbers and widely sold as ornamental plants. Others are grown largely by enthusiasts. *Tillandsia kautskyi* was included in Appendix II in 1992 owing to concerns regarding the possible impact on it of wild-collection for international trade. The original listing proposal at CoP8 covered all *Tillandsia* spp. At the CoP it was agreed to include only seven species, including three endemic to Brazil: *T. sucrei, T. kautskyi*, and *T. sprengeliana.* All three species are the subject of proposals for deletion from the appendices (see CoP16 Prop. 54 and Prop. 55).

Since listing in Appendix II reported trade in the species has only been in artificially propagated specimens. Brazil has reported the export of nearly 200 live plants but none since 1994. The remainder of trade involved non-range States and reported imports were mainly composed of two large imports into Hong Kong from the Netherlands (1620 and 1500 plants) in 2000 and 2001; these were not reported by the Netherlands and may have been misreported. From 2005, Hungary has been the sole exporter/ source of all specimens reported in international trade. Artificial propagation of this species is known to occur in Germany, Hungary and the US. Demand for this species by enthusiasts continues and artificially propagated plants are offered for sale on the internet. No exports of wild specimens have been reported since the species was listed and and there is no evidence of ongoing wild collection or illegal trade. The remaining sub-populations are considered safe from harvesting as most plants are found in two protected areas and/or on inaccessible rocky outcrops.

Tillandsia sucrei is said to be similar in appearance to *T. brachyphylla*, which is not listed in the Appendices. It can be distinguished relatively easily from all the Central American species of *Tillandsia* listed in the Appendices.

This proposal has resulted from the Plants Committee's Periodic Review process.

Analysis: This species has a restricted range, known from only a small patch of Atlantic Forest of the State of Rio de Janeiro in Brazil, and is unlikely to be able to withstand large scale harvest for export. However, all known specimens are considered safe from harvesting due to being found in a protected area and on inaccessible rocky outcrops. All reported international trade in this species since listing in Appendix II has been in artificially propagated specimens, with a maximum of 200 specimens having been exported directly from Brazil; the remainder of trade involves non-range States. Demand for this species by enthusiasts continues, and artificial propagation is reportedly the only source of specimens now in trade. There is no evidence of ongoing wild collection or illegal trade.

It would appear that *T. sucrei* no longer fulfils the criteria for inclusion in Appendix II as regulation of trade is not required to ensure harvesting of specimens from the wild does not threaten the survival of the species. No exports of wild harvested plants has taken place in the 20 years since the species was listed in Appendix II and it seems unlikely that its removal from the Appendices would stimulate trade in wild specimens such that it would meet the criteria for listing in Appendix II in the near future, as outlined in the precautionary measures, Annex 4 A4 of *Resolution 9.24 (Rev. CoP15)*.

The three *Tillandsia* species being proposed for removal from the Appendices are among dozens that are in trade, the vast majority of which are not included in the Appendices. They appear to be relatively easily distinguished from the species that would remain in the Appendices, all of which occur in Central America.

Deletion of Laguna Beach Live-forever *Dudleya stolonifera* and Santa Barbara Island Live-forever *Dudleya traskiae* from Appendix II

Proponent: United States of America

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

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

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

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

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

Inclusion of the genus *Diospyros* (populations of Madagascar) in Appendix II, and limited to logs, sawn wood and veneer sheets by an annotation

Proponent: Madagascar

Summary: *Diospyros* is a very large and widespread, chiefly tropical, genus of trees and shrubs in the ebony family or Ebenaceae. Over 500 species have been described in total, although the taxonomy of the genus is in need of revision. Estimates for the number of valid species in Madagascar range from 84 to around 240. Currently 103 species names of Malagasy *Diospyros* are included in CITES Appendix III, based on a list submitted by Madagascar in 2011 (see Notification 2011/039); 84 names are listed in the annex to the proposal. All Malagasy *Diospyros* are believed endemic to the country, with the exception of *D. ferrea*, a very widespread species that also occurs in Africa, Asia, Australia and the Pacific (and which is not included in the current Appendix-III listing). *Diospyros* spp. are distributed throughout Madagascar and are found in a very wide range of habitats, including evergreen wet forests, coastal forests, deciduous dry forests, tapia woods, thickets and savannah scrub.

Some members of the genus yield black, dense, durable wood, known as ebony, used for carpentry and cabinet-making and also in demand for musical instruments. In Madagascar, as elsewhere, timber-bearing ebony trees have been harvested for many years both for domestic use and for export. In recent years levels of harvest and export have evidently increased greatly. Around 40% of the currently named Malagasy species are said to yield wood of commercial value. Some 20 species are reportedly traded in significant quantity, of which the most important are said to be *Diospyros gracilipes, D. perrieri* and *D. platycalyx*. *Diospyros gracilipes* occurs in the humid forests of the east and the Sambirano region of the north and is considered one of the most valuable woods in Madagascar, fetching high prices even when traded in smaller sizes. *D. perrieri* is the main producer of ebony wood in western Madagascar*; D. platycalyx,* also from western Madagascar, is reported to be heavily exploited within its range.

Little is known about population sizes and distributions of most of the Malagasy *Diospyros* species. None is currently included in the IUCN Red List. At CoP15 a decision was adopted directing Madagascar and the Plants Committee to review and gather further information on species (including tree species) that might benefit from inclusion in the Appendices. Information on the taxonomy, distribution and conservation status of *Diospyros* spp. was presented to the nineteenth meeting of the Plants Committee in April 2011; this included preliminary assessments of some species using the IUCN Red List Categories and Criteria. This suggested that *D. gracilipes* was vulnerable and *D. perrieri* endangered. It was reported that almost all large trees of the latter had disappeared from within its range. Various other species were also assessed as threatened owing to logging pressure. No assessment of *Diospyros platycalyx* was made. There is little information available on growth rates or regeneration potential of Malagasy *Diospyros*, but growth of ebony-producing trees is in general believed to be slow, with many years needed to produce the dense, dark wood that is most highly sought-after. Generation times are likely to be measured in decades.

Few data are available on the trade in ebonies from Madagascar. It is believed that large amounts were exported in 2008 and 2009, much of it obtained illegally, either from within protected areas or without appropriate permits. Most information concerning hardwood export from Madagascar relates to rosewood *Dalbergia* spp. (see proposal CoP16 Prop. 63), with indications that rosewood is exported in much larger quantities than ebony.

In addition to selective logging, Malagasy forests are subject to numerous other pressures including clearance for shifting cultivation, uncontrolled burning, urbanisation and mining. In 2000 relatively unaltered forest covered around 10% of Madagascar with deforestation rates estimated at 200-300 000 ha per year. The coastal forests in particular are known to be highly fragmented and are believed to have been reduced in extent by around 25% between the 1970s and the mid-2000s.

Madagascar introduced a temporary ban on export of precious woods in 2010, envisaged to be for between 2-5 years. As of late 2012 this reportedly remained in place, although logging of ebonies has apparently continued, including within protected areas.

Analysis: Information on populations of any *Diospyros* species in Madagascar is scarce. Some species are known to have restricted distributions and are not known to be present in protected areas. Almost all large trees of one valuable ebony-wood producing species, *Diospyros perrieri,* are said to have disappeared from the western part of Madagascar, to which it is restricted. It is reported that despite introducing legislation to ban the export of precious woods in 2010 logging of ebonies has continued, apparently including within protected areas. There are no data on volumes of ebony in trade, and it is not possible to relate even anecdotal accounts of ebony in trade to particular species. There is thus little evidence to determine whether any of the species meet the criteria in Annex 2a of *Resolution Conf. 9.24 (Rev. CoP15)*. However, given the apparently high rates of exploitation of ebony-producing trees as well as the large scale deforestation occurring in Madagascar and the generally long generation times of ebony-producing trees it is possible that some meet these criteria in that regulation of trade in them is required to ensure that the harvest of specimens from the wild is not reducing their populations to a level at which their survival might be threatened by continued harvesting or other influences.

Experts are currently unable to accurately identify any given log of Malagasy ebony to the species level and thus, if it is considered that one or more species of *Diospyros* meet the criteria in Annex 2 a then other species would meet the criteria in Annex 2 b A of *Resolution Conf. 9.24 (Rev. CoP15*). Given the current taxonomic uncertainty of the genus *Diospyros* listing of all populations of Madagascan species of the genus *Diospyros* would likely facilitate implementation.

Amend the Annotation for Brazilian Rosewood *Aniba Rosaeodora* #12 to "*Logs, sawn wood, veneer sheets, plywood and extracts"*

Proponent: Brazil

Summary: *Aniba rosaeodora* is a tree species occurring in Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname and Venezuela. It was included in Appendix II in 2010 largely because of concerns regarding harvest for export of the oil and associated products. The listing has annotation #12 "*Logs, sawn wood, veneer sheets, plywood and essential oil (excluding finished products packaged and ready for retail trade)*."

At the Twentieth meeting of the Plants Committee (March 2012), a working group on annotations discussed definitions of terms used in annotations #2, #7, #11 and #12 which cover various parts and derivatives of various plant species included in the Appendices. The term "essential oil" only occurs in annotation #12, which only applies to *Aniba rosaodora.* The working group proposed subsuming the term "essential oil" into a wider definition of "extract. However, as noted in document CoP16 Doc. 75, the definition for "extract" originally put forward by the working group included the caveat: "*Finished products containing such extracts as ingredients are not considered to be included in this definition."* The working group could not reach agreement on whether this should be included in the definition or not, and referred the matter to the Standing Committee. On the basis of Standing Committee deliberations, the definition proposed for adoption at CoP16 does not include this exclusionary language and is as follows:

> Extract: Any substance or product obtained directly from plant material by physical or chemical means regardless of the manufacturing process. An extract may be solid (crystals, resin, fine or coarse particles), semi-solid (gums, waxes), or liquid (solutions, tinctures, oil and essential oils).

This definition is proposed for adoption under Agenda item 75 (Development and application of annotations) as paragraph 10 of document CoP16 Doc. 75.

If this definition and the current proposal were adopted, the listing for *Aniba rosaeodora* would use a defined term ("Extracts") rather than an undefined term ("Essential oils").

As reported in document CoP16 Doc. 75, paragraph 11, the working group understood that Brazil would submit a proposal for consideration at CoP16 to revise the annotation for *Aniba rosaeodora;* they also understood that Brazil intended to include the exclusionary language in the proposal. However, Brazil indicated in an email sent to the Chair of the Plants Committee in May 2012 that they considered finished products containing such extracts as ingredients, and also fragrances, not to be included in the definition of extracts proposed for adoption. They have therefore not included this exclusionary language in the proposed amendment.

Analysis: The proposed amendment would be in line with the adoption of a definition of "Extract" as proposed in paragraph 10 of document CoP16 Doc. 75. The proposed new version of annotation #12 does not include the wording "*(*excluding finished products packaged and ready for retail trade)" currently present in the annotation. The general understanding of the new definition proposed for adoption is that it does include finished products. That is, if the proposed amendment were adopted, finished products would no longer be exempted from the provisions of the Convention. This would not appear to be the intent of the proponents. Retaining this language, so that the amended annotation read: "logs, sawn wood, veneer sheets, plywoods and extracts (excluding finished products packaged and ready for retail trade)" would resolve this.

Inclusion of *Dalbergia cochinchinensis* in Appendix II

Proponent: Thailand and Viet Nam

Summary: *Dalbergia cochinchinensis* is a slow growing species of rosewood found growing sparsely in open semi-deciduous forests in Cambodia, Lao People's Democratic Republic (Lao PDR), Thailand and southern Viet Nam. *Dalbergia cochinchinensis* has become rare and the species is disappearing from most of its natural habitat, the last remaining stronghold of the species is in Thailand in a protected area near the border with Cambodia. The total population size has not been systemically surveyed. In Thailand, *D. cochinchinensis* is found scattered in 30 protected areas (560 km^2) and the number of trees is estimated to have declined from perhaps as much as 70%, from around 300 000 in 2005 to 80 000-100 000 trees in 2011. There has not been a comprehensive survey in Viet Nam, but the population size of rosewood (species not specified) is thought to have declined by half or more during the past 5-10 years. A specific survey of *D. cochinchinensis* in five protected areas in Viet Nam conducted in 2010 showed a low density of 1-10 tree/hectare. No information is available on trends for the species in Cambodia or Lao PDR, but mature individuals are very rarely seen, even within protected areas. *Dalbergia cochinchinensis* is classified globally by IUCN as Vulnerable, although this assessment was published in 1998 and is regarded as in need of updating.

The wood is highly desirable in cabinet-making; the primary parts in the international trade are logs and sawn wood but wooden furniture and handicraft finished products are also found. Much of the trade is thought to be destined for China. Harvesting of this species is either restricted or banned across all of its range. It appears that illegal trade is increasing rapidly. The species is also affected by habitat loss. Trial plantations have been established; however, the slow-growth rate of the species means such plantations have limited commercial appeal.

The proposal is for the inclusion of *D. cochinchinensis* in Appendix II with Annotation #5 (logs, sawn wood and veneer sheets).

Analysis: *Dalbergia cochinchinensis* is a rosewood tree from Southeast Asia that yields a highly sought after timber, demand for which has grown very markedly in recent years, particularly in China. This demand is met entirely by harvest, often illegal, from wild populations. Although inventory data are lacking in most of the range there are indications of declines in range states; at least one (Thailand) decline in the past six years would already appear to meet the criteria for Appendix I. The species would therefore appear likely to meet the criteria for inclusion in Appendix II Annex 2 a, paragraph A of *Resolution Conf. 9.24 (Rev. CoP15)*: it is known, or can be inferred or projected, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.

Inclusion of *Dalbergia retusa* and *Dalbergia granadillo* in Appendix II

Proponent: Belize

Summary: *Dalbergia* is a large and very widespread genus of trees, shrubs and lianas; many of the species yield valuable timber traded under a variety of different names, most frequently as rosewood. *Dalbergia retusa* (Black Rosewood, Nicaraguan Rosewood, cocobolo) is a tree occurring in tropical dry forest habitats in Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama. It may also occur in Colombia and Belize (taxonomic clarification is required to determine if trees referred to as '*Dalbergia* spp.' and/or 'rosewood' in the Chiquibul Forest Reserve, Belize are in fact *D. retusa*). *Dalbergia granadillo* is a similar species, occurring in El Salvador and Mexico.

The range of *D. retusa* is said to be highly fragmented because of overexploitation and land conversion. Like other rosewood-bearing trees the species is slow growing. Natural regeneration is generally low, but may be enhanced in clearings and open areas including areas periodically exposed to fire. The species has been extensively felled to harvest the beautiful, dense and durable wood, which is prized for a wide range of uses. The heartwood is surrounded by white sapwood and the density varies with age and habitat conditions. The poorly formed stems yield the most uniquely figured and highly prized wood which is hard, heavy and lustrous in colour with high oil content and a high natural polish. Little information is available on current abundance and there are conflicting accounts of the conservation status of the species, even within particular countries. It has been reported to be threatened in Costa Rica, Guatemala, Mexico, Nicaragua and Panama, but its conservation status has also been described as good in both Costa Rica and Nicaragua. There is also inconsistent information regarding the current origin of cocobolo wood in trade. The species is known to have been the subject of heavy exploitation in the past, particularly in Costa Rica and Panama. There are recent unconfirmed reports of uncontrolled harvest in the Darien region of Panama and illegal shipments of cocobolo, apparently destined for China, were seized in Guatemala in 2011. However, it has also been said that much of the recent cocobolo in trade originates on private fincas (farms) where 80 to 100 year old trees have been able to mature. In the past two decades small-scale plantations are reported to have been established in Costa Rica and Guatemala, and there has been some re-planting in reserves in Panama. It seems unlikely that any of these efforts have yet produced commercial quantities of cocobolo.

Much less is known of *D. granadillo*. Its timber is said to be virtually indistinguishable from that of *D. retusa* and it has been assessed as nationally endangered in Mexico.

A proposal to include these species in CITES Appendix II at CoP14 was withdrawn with an agreement among range and import States to take further measures to increase knowledge and regional information sharing on the trade and population status and trends. Guatemala included its population of *D. retusa* in Appendix III in 2008 and Panama included its population in 2011. No annotation is specified for either species in the current proposal.

Analysis: Information on the conservation status of *Dalbergia retusa* is conflicting. The species is known to be in demand internationally for its timber, and the market for rosewoods in general has grown very rapidly in Asia, particularly China, in recent years. Populations are said to have declined historically as a result of overharvest and land conversion for agriculture and pasture. Little is known about the current level of harvest for international trade or the impact of such harvest on the species, although there are indications of uncontrolled harvest of wild populations in at least one range State, and of illegal trade in another (Guatemala). There is overall insufficient information to determine whether the species meets the criteria for inclusion in Appendix II set out in Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)*.

Dalbergia granadillo has a more restricted distribution. Its wood is considered to be indistinguishable from that of *D. retusa* and is traded under the same name. If *D. retusa* were to be listed in Appendix II, implementation of such a listing would be greatly facilitated by the inclusion of *D. granadillo* in Appendix II.

Inclusion of *Dalbergia stevensonii* in Appendix II

Proponent: Belize

Summary: *Dalbergia stevensonii* is a species of rosewood known to occur in Belize, Guatemala and Mexico. It inhabits tropical broadleaf forests and has a restricted distribution, mainly concentrated in the Toledo district of southern Belize. In 2012 it was reported that commercially viable standing stock of *D. stevensonii* in Toledo had been assessed at approximately 140 000 m^3, believed to represent a decrease of around 13 % over three years. There is no information regarding the population size in any other range State. As well as logging, the species is reported to be affected by habitat loss. The human population of the Toledo district is increasing and previously remote areas are becoming accessible owing to road construction. The species has not been assessed by IUCN. Like other rosewood-producing trees it is believed to be slow growing, with a generation time measured in decades.

D. stevensonii appears to be of limited availability in trade, although it is very much sought after as a tonewood for musical instruments and increasingly over the past few years for furniture and cabinet-making in Asia, especially China. Export from Belize has taken place since the early 20th Century. Legislation was changed in 1996 to allow the export of raw timber (roundwood), causing exports to increase, and records from 1999 to January 2012 indicate around 26 000 m^3 rosewood exported from Belize in that period, the majority thought to be *D. stevensonii* with perhaps a small percentage other *Dalbergia* species. A moratorium on harvesting and export was declared in March 2012. A further 1378 m^3 was legally exported in the period February-July 2012 after the rosewood moratorium was declared. The date of the last legally permitted export was 24 August 2012. China is reported to have imported over 6000 m^2 of rosewood (species not specified) from Belize in the period 2010-2102, over half of this in 2012. In 2012 it was reported that illegal felling of the tree in forest reserves in Belize continued. Information on harvest of and trade in *D. stevensonii* in other range States is scarce, although there is a record of 254 m^3 of timber extracted in Guatemala and exported in 2004.

The species was proposed for inclusion in Appendix II at CITES CoP14. The proposal was withdrawn and a recommendation made for range and import states to take further measures to increase knowledge and regional information sharing on trade in the species and its population status and trends. Guatemala included *Dalbergia stevensonii* is Appendix III in 2008. No annotation is specified in the proposal.

Analysis: *Dalbergia stevensonii* is a rosewood tree from Central America that yields a highly valuable timber, in demand for the manufacture of musical instruments and furniture; the latter particularly in Asia where demand for rosewood in general has grown very significantly in recent years. It is thought that the main population is in southern Belize, where the harvest of trees has reportedly increased markedly in recent years, and from where exports to Asia are known to take place. In early 2012 a moratorium on felling and export was imposed in Belize, although illegal felling is still believed to take place and enforcement capacity within the country is limited. All recorded export is believed to be in timber from the wild. Given the exceptionally high demand for rosewood internationally, and the apparently limited distribution of species, it would appear likely that it meets the criteria for inclusion in Appendix II in that regulation of trade in it is required to ensure that the harvest of specimens from the wild is not reducing its population to a level at which its survival might be threatened by continued harvesting or other influences.

Inclusion of the genus *Dalbergia* (populations of Madagascar) in Appendix II, and limited to logs, sawn wood and veneer sheets by an annotation

Proponent: Madagascar

Summary: *Dalbergia* is a large and very widespread genus of trees, shrubs and lianas; many of the species yield valuable timber traded under a variety of different names, most frequently as rosewood. There are 48 currently recognized species of *Dalbergia* in Madagascar, 47 of which are endemic and some of which produce rosewood. Malagasy *Dalbergia* species occupy a variety of habitats including humid and dry dense forests, semi-deciduous forests, thickets and savannas. Some species, including *D. aurea, D. brachystachya, D. davidii* and *D. histicalyx,* have restricted ranges, while others such as *D. baronii, D. greveana* and *D. trichocarpa* are more widespread. The conservation status of 43 Malagasy *Dalbergia* species was assessed by IUCN in 1998. Three species were reassessed in 2012, with two of these (*D. andapensis* and *D. humbertii*) being classified as Endangered and one, *D. chapelieri,* as Near Threatened. Of those not reassessed, 33 had been classified in 1998 as threatened (Endangered or Vulnerable using the categories valid at the time); these classifications are all recorded as in need of updating. Selective logging was noted as a threat for various species; others were recorded as having very small populations in areas where logging occurs. A further species (*D. peltieri*) was assessed for the first time in 2012 and was considered Least Concern.

Rosewood from Madagascar (and from *Dalbergia* species elsewhere) is highly sought after in international trade. There is a long tradition of export of the wood from Madagascar, but in recent years (since 2007) logging for international trade has risen dramatically, as a result of high demand and correspondingly high prices (notably in China) and political upheavals in Madagascar. Virtually all harvest in recent years has evidently been intended for export, with a very large proportion of exports apparently destined for China. The most valuable species are believed to include *Dalbergia abrahamii, D. bathiei, D. baronii, D. davidii, D. greveana, D. louvelii, D. maritima, D. mollis, D. monticola, D. normandii, D. purpurascens, D. trichocarpa, D. tsiandalana, D. viguieri* and *D. xerophila.* In addition *D. madagascariensis* is exported; this species lacks the typical lustre of rosewoods and is generally referred to in Madagascar as pallisandre. There is little information available on growth rates or regeneration potential of Malagasy *Dalbergia*, but growth of rosewood-producing trees in general is believed to be slow, with many years needed to produce the dense, lustrous wood that is most highly sought-after. Generation times for most species are likely to be measured in decades. A modelling exercise in 2010 concluded on the basis of hypothesized original distributions that eight economically important species (*D. bathiei, D. baronii, D. louvelii, D. mollis, D. monticola, D. purpurascens, D. tsiandalana* and *D. viguieri*) might have undergone long-term range reductions of between 54% and 98%. For two economically important species (*D. davidii* and *D. normandii*) data were insufficient to make any assessment.

The great majority of rosewood export appears to be in roundwood. In 2000-2001, exports were reported to be in the region of 5000 tonnes per year, declining to almost nothing for the period 2002-2006, increasing to nearly 14 000 tonnes in 2008 and to more than 36 000 tonnes in 2009, coinciding with the period of political upheaval. In May 2010 it was reported that, at a conservative estimate, some 1100 containers each carrying just over 100 rosewood logs had been exported since April 2009. More recently it has been claimed that there are as many as half a million rosewood logs stockpiled in Madagascar awaiting export.

It has been reported that the overwhelming majority of Madagascar rosewood exported in the period 2007-2010 was illegally logged within Masoala and Marojejy National Parks (which are part of the Rainforests of the Antsiranana UNESCO World Heritage Site), as well as Mananara-Nord Biosphere Reserve and the vast Makira Conservation Site.

Madagascar introduced a temporary ban on harvest, transport and export of precious woods in 2010, envisaged to be for between 2-5 years. *D. madagascariensis* (“pallisandre”) is apparently not covered by this ban. As of late 2012 the ban reportedly remained in place. Despite the ban, logging of rosewoods was reported to be continuing in at least some protected areas (e.g. Masoala National Park) although not in others (e.g. Marojejy National Park).

In 2011, in response to the major increase in illegal logging that began in 2009, Madagascar requested the inclusion of five species of *Dalbergia* in Appendix III of CITES (*D. louvelii, D. monticola, D. normandii, D. purpurascens* and *D. xerophila*). CoP15 adopted a Decision directing Madagascar and the Plants Committee to review and gather further information on species (including tree species) that would benefit from CITES listing. Information on the taxonomy, distribution and conservation status of *Dalbergia* spp. was presented to the nineteenth meeting of the Plants Committee in April 2011 (Document PC19 Doc. 14.3).

Analysis: Information on populations of all *Dalbergia* species in Madagascar is scarce. Rosewood-bearing trees in the genus *Dalbergia* are known to have been subject to intensive, often uncontrolled and illegal, logging in recent years to supply the export market. Indications are that volumes of rosewood logged and exported from Madagascar in the period 2007-2010 were several times those recorded earlier in that decade. There is no information on volumes of individual species of rosewood harvested and traded, or comprehensive inventory data for any species. It is thus extremely difficult to determine whether any one species meets the criteria for inclusion in Appendix II set out Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)*. However, some rosewood-bearing *Dalbergia* species are known to have restricted distributions in areas that have been subject to intensive logging in recent years. Given this, the generally long generation time of rosewood-bearing trees and the very large increase in logging and export of rosewood recorded recently, it is likely that some species at least meet these criteria in that regulation of trade in them is required to ensure that the harvest of specimens from the wild is not reducing their populations to a level at which their survival might be threatened by continued harvesting or other influences.

Experts are currently unable to accurately identify any given log of Malagasy rosewood to the species level and thus, if it is considered that one or more than one *Dalbergia* species meets the criteria in Annex 2 a, then other species would meet the criteria in Annex 2 bA of *Resolution Conf. 9.24 (Rev. CoP15*).

Inclusion of *Senna meridionalis* in Appendix II

Proponent: Madagascar

Summary: *Senna meridionalis* is a deciduous much-branched shrub or shrubby tree, two to five metres tall found only in Madagascar. It is one of 250 or so species of *Senna*, a genus of leguminous plants widespread in the tropics. The species has a relatively extensive distribution over an area of at least 20 000 km^2 in southern and western Madagascar, growing mainly on calcareous soils in arid and semi-arid areas in deciduous forest and thorny scrub. Distribution within this area is fragmented, but the species is at least locally common and is reported from at least two protected areas (Tsimanampetsotsa National Park and Cap Sainte Marie Special Reserve). *Senna meridionalis* has a bonsai-like appearance and is in some demand for the international horticultural trade, chiefly grown by hobbyists. It does not appear to be widely available at present. The plant is reported to have been collected particularly from the Table de Toliara mountain (Andatabo) near Toliara in south-west Madagascar. Malagasy authorities report the export of some 700 in the period 2003–2006, most of these (just under 500) in 2004. No subsequent exports are reported. It may be assumed that some or all of these were wild-collected plants. The species can reportedly be propagated from both seeds and cuttings.

This species was proposed for inclusion in Appendix II of CITES by Madagascar at CoP15. The proposal was withdrawn at the CoP.

Analysis: *Senna meridionalis* has a reasonably widespread distribution in southern Madagascar, where it is at least locally common. It is offered for sale in various parts of the world, but trade appears to be limited. The plants offered for sale range from small individuals grown from cuttings, to larger individuals of unknown origin. Some wild collection is known to have taken place in the early 2000s. No exports have been reported from Madagascar since 2006. Given the distribution of the species and the absence of any reported recent trade from the range State, it seems very unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

Inclusion of *Adenia firingalavensis* in Appendix II

Proponent: Madagascar

Summary: *Adenia firingala*vensis is a climbing succulent shrub with a caudiciform (swollen) stem and roots. It is one of 100 or so members of *Adenia*, a genus widespread in Madagascar and Africa. It is endemic to Madagascar where it is reportedly widespread and common, occurring from the north of the island to the south, chiefly in the west but with populations also recently discovered in the eastern part of the country. The species is used locally in Madagascar in traditional medicine. The bark is used to treat scabies. Its habitat is affected by a number of factors, including agricultural expansion, bushfires and charcoal production. The species has appeared in the live-plant trade and is available to buy in Asia, Europe and the USA. Seeds and small plants are available to purchase from various sources, as well as mature individuals with a developed caudex stem. Propagation from seed is reported to be easy but slow, and propagation from cuttings possible but rather difficult. Demand generally appears to be relatively low. Some trade from Madagascar has been reported - just over 450 exported in the period 2003-2006, the great majority (358 in 2004). It is likely that most if not all of these were wild-collected. No export trade has been reported since 2006. Current legal controls in Madagascar on collection and export are unclear.

The species was proposed for inclusion in Appendix II at CoP15 but the proposal was withdrawn at the meeting. At CoP15 one Malagasy *Adenia* species (*Adenia olaboensis*) was included in Appendix II; no trade in it has been recorded under CITES since the listing.

Analysis: *Adenia firingalavensis* appears to be a widespread and common plant in Madagascar. There has been some collection from the wild for export as live plants which may have led to localised depletion at collection sites, but no export has been reported since 2006 and the species is not reportedly in wide demand. It is extremely unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

Inclusion of *Adenia subsessifolia* in Appendix II

[According to the standard nomenclatural reference adopted by the Conference of the Parties, this species is named *Adenia subsessilifolia*]

Proponent: Madagascar

Summary: *Adenia subsessilifolia* is a succulent plant with caudiciform roots and tubers. It is one of 100 or so members of *Adenia*, a genus widespread in Madagascar and Africa. It is endemic to Madagascar; it occurs in the southern part of the country where it has been recorded at various locations from Toliara in the west to Andohahela in the east. It forms a low-lying multi-branched herb or sub-shrub. It is reported not to grow at high densities but is evidently relatively widespread within its range and is known from at least three protected areas (Cap Sainte Marie Special Reserve and Andohahela and Tsimananpetsotsa National Parks). Its habitat is affected by clearance for agriculture and charcoal production, and by fire. The species has been in international trade as a horticultural plant, chiefly grown by specialist collectors. However, it is reported not to be considered particularly attractive and demand is said to be low. It is reportedly very difficult to extract mature wild plants intact from the limestone in which they grow; in contrast, artificial propagation is said to be easy, although information on the latter is inconsistent. However, some wild collection has been reported, notably from the Table de Toliara Mountain near Toliara in the early 2000s. The CITES Management Authority of Madagascar has reported a small number of specimens (126) exported in the period 2003-2006, virtually all (115) in 2004; it seems likely that at least some of these were wild-collected. No export has been reported since 2006. Very few plants have been found offered for sale outside Madagascar recently. Prices are low, indicating that they are very likely to have been artificially propagated. Current legal controls in Madagascar on collection and export are unclear.

The species was proposed for inclusion in Appendix II at CoP15 but the proposal was withdrawn at the meeting. At CoP15 one Malagasy *Adenia* species (*Adenia olaboensis*) was included in Appendix II; no trade in it has been recorded under CITES since the listing.

Analysis: *Adenia subsessilifolia* is a relatively widespread plant in southern Madagascar, easy to propagate but difficult to collect from the wild. It has in the past appeared in international trade with at least some of these specimens very likely to have been wild-collected. However, no trade from the range State has been recorded for the past six years and the species is evidently in low demand in horticulture. The few specimens offered for sale recently are very likely to have been artificially propagated. It seems highly unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

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Inclusion of *Uncarina grandidieri* in Appendix II

Proponent: Madagascar

Summary: *Uncarina grandidieri* is a succulent shrub, one of around ten species in the genus, all of which occur in Madagascar. It has a wide though evidently patchy distribution in south-west and southern Madagascar, from the Mangoky River basin in the region of Morondava southwards. It grows in dry thorny thicket and dry forest, habitats that are affected by conversion to agriculture, burning and charcoal production. Ground observations have provided a population estimate of 420 individuals in a 2 hectare plot within the protected area of Beza-Mahafaly Special Reserve. The species is also reported from Andohahela National Park in south-east Madagascar. It is in cultivation, both as an ornamental plants (apparently on a small scale) in Madagascar and elsewhere. It is said to be easy to propagate from seeds and cuttings and to grow rapidly. Export of plants was reported in the early 2000s, amounting to around 4600 plants in the period 2000-2005, with highest exports (just over 2000) in 2004. No plants were reported in 2006 and export has not been reported since then. The majority of the limited trade outside Madagascar at present appears to be in seeds or plants propagated from seeds or cuttings. Current legal controls in Madagascar on collection and export are unclear.

Analysis: *Uncarina grandidieri* has a wide distribution in south and south-west Madagascar. It is in cultivation, and is reportedly easy to propagate. Recent trade outside Madagascar appears to be very largely in seeds or in propagated plants. Some export of plants, some or all of which are presumed wild-collected, has taken place in the past, although there is no indication of ongoing export of plants from the range State. The scale of the reported trade is small compared with the likely population of the species based on observed densities. It seems very unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

Inclusion of *Uncarina stellulifera* in Appendix II

Proponent: Madagascar

Summary: *Uncarina stellulifera* is a succulent shrub, one of around ten species in the genus, all of which occur in Madagascar. It has a relatively wide though evidently patchy distribution in south-west Madagascar, from Morondava southwards, where it grows in dry thorny thicket and dry forest, habitats that are affected by conversion to agriculture, burning and charcoal production. One observation on the ground found a density of around 160 mature individuals per hectare. The species is known to occur in at least three protected areas (Beza-Mahafaly Special Reserve and Kirindy-Mitea and Tsimanampetsotsa National Parks). The species is in cultivation, both as an ornamental plant (apparently on a small scale) in Madagascar and elsewhere. The species is said to be easy to propagate from seeds and to grow relatively rapidly. Some export of plants was reported in the early 2000s, amounting to just under 700 plants in total in the period 2000-2006, with a peak of just over 340 in 2004. It is not clear how many of these were wild collected. Export since 2006 has not been reported and the majority of the limited trade outside Madagascar at present appears to be in seeds. Current legal controls in Madagascar on collection and export are unclear.

Analysis: *Uncarina stellulifera* has a relatively wide distribution in south-west Madagascar. It is in cultivation, and is reportedly easy to propagate. Recent trade outside Madagascar appears to be largely in seeds. Some export of plants, presumed wild-collected has taken place in the past, although there is no indication of ongoing export of wild-collected plants The scale of the reported trade is very small compared with the likely population of the species based on observed densities. It seems very unlikely that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

Inclusion of East African Sandalwood *Osyris lanceolata* in Appendix II

Proponent: Kenya

Summary: East African Sandalwood *Osyris lanceolata* is a semi-parasitic shrub or small tree with wood that yields a commercially important aromatic oil. The species occurs in a range of open habitats, generally in arid and semi-arid environments. It is widespread, occurring mainly in the tropics and some parts of the Mediterranean. It is uncertain whether the recorded distribution for some countries relates to introduced plants.

Subsistence uses of the species in East Africa include timber, fuelwood and herbal medicines. In the past decade, populations in Kenya and United Republic of Tanzania (Tanzania) have been intensively harvested to supply the international trade in sandalwood. Exploitation is reported to have spread to South Sudan and Uganda. Whole trees are uprooted for extraction of the oil that is contained in the trunk, branches and roots. In Tanzania processing factories were established in 2004 and trade in East African Sandalwood was first reported in Kenya in the same year. Increase in use of the species may be associated with a decline in supply of oils and associated products from other sandalwood species (primarily *Santalum* spp., and Red Sanders *Pterocarpus santalinus*, the latter being included in CITES Appendix II). Wood of *Osyris lanceolata* is exported to China and India and semi-processed products to Indonesia, India, South Africa, France, Germany and eastern Asia countries for the cosmetic and pharmaceutical industry.

In Kenya, the species has a wide but scattered distribution and population abundance is apparently low. Very few young plants have been observed in recent field surveys, with most stands aged 20 – 45 years. Studies at various localities reveal poor regeneration potential. Populations have reportedly been declining since 2002, as a result of the heavy exploitation for international trade. The sharp rise in extraction in Kenya is believed to be linked to overexploitation of the resource in Tanzania. In Tanzania, declines have been recorded in various parts of the country including Arusha, Manyara and Kilamanjaro Regions and the Eastern Arc Mountains. There is currently little information on the status of *Osyris lanceolata* in most other parts of its range, although there is no evidence of large-scale exploitation elsewhere. The species has been assessed nationally in both Namibia and South Africa as Least Concern.

Osyris lanceolata was protected in Kenya by Legal Notice No 3176 of 2007 under the Forests Act, 2005. This gave protection to the species for a period of five years to allow for the development of sustainable harvesting mechanisms.

Analysis: *Osyris lanceolata* is a widespread shrub or small tree from the tropics and subtropics, whose original range is unclear but is probably Africa and localised parts of southern Europe. It yields an aromatic oil that is in international demand. Exploitation in East Africa for production of oil and associated products began relatively recently (2004) and has apparently led to population declines in Kenya and Tanzania, with harvest reported now to be spreading to South Sudan and Uganda. However, the species is very widespread and at least locally common outside this region and there is no evidence of large-scale exploitation elsewhere. In view of this, the species would not appear to meet the criteria for inclusion in Appendix II set out in Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15).*

Proposal: To delete annotation to the listing of Aquilaria spp. and Gyrinops spp. in Appendix II, and replace it with a new annotation with new number as follows:

All parts and derivatives, except:
a) seeds and pollen;
b) seedling or tissue cultures obtained *in vitro*, in solid or liquid media, transported in sterile containers;
c) fruits;
d) leaves;
e) mixed oil containing less than 15% of agarwood oil, attached with labels of following words
"Mixed oil containing xx% of agarwood obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of XX (name of the export state) ";
samples of the labels and list of relevant exporters should be communicated to the Secretariat by export states and then inform all parties through a notification;
f) exhausted agarwood powder, including compressed powder in all shapes;
g) finished products packaged and ready for retail trade, this exemption does not apply to beads, prayer beads and carvings.

Proponent: China, Kuwait, Indonesia

Summary: *Aquilaria* and *Gyrinops* are two genera of trees in the family Thymelaeaceae, the former with 15 generally recognised species, the latter with eight, distributed from India to New Guinea. In some trees, a still imprecisely understood combination of wounding, vectors of infection (bacterial infection, fungus) and resinous response induces the formation of a resinous heartwood (agarwood) that is fragrant and highly valued. The primary source of agarwood in reported trade is *Aquilaria malaccensis*. Agarwood is used in perfumes, incense and traditional medicines, and as an essential oil, distilled from the wood. Carvings and beads, including prayer beads, are also produced from the wood. So-called exhausted wood powder – the residue left after the distillation process – is often compressed to make incense sticks and small statues.

All agarwood-producing taxa are currently included in Appendix II; *Aquilaria malaccensis* was listed in 1994, and the rest of the genus *Aquilaria* and *Gyrinops* spp. in 2004. The two genera are currently covered by annotation #4, the relevant parts of which are: “All parts and derivatives, except: a) seeds, spores and pollen (including pollinia); b) seedling or tissue cultures obtained *in vitro*, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants”.

International agarwood trade is complex, as it is traded in a variety of forms and at various stages of processing, from raw whole pieces to finished products such as perfumes, which may contain only small amounts of agarwood oil. Some processing of agarwood to produce end-products takes place in range States; some takes place elsewhere with resulting products, either sold domestically or re-exported to other consumer countries.

Of the main products in trade, large whole pieces of wood may be traded for further processing or for sale as prestige items; wood chips are traded for burning as ‘incense wood’, or for further processing; un-exhausted powder is generally a by-product of carving or wood chip production and is traded for further processing; exhausted powder is also traded for further processing; oil may be traded in pure form or in various concentrations for further processing; the various end-products listed above (carvings, beads and prayer beads, medicines, incense sticks, perfumes, tea etc.) are also traded.

At present all these parts and derivatives are covered by the Appendix-II listing.

According to the CITES trade database the key *Aquilaria* commodities originating from the wild reported in export have been wood chips and powder. Wild-origin timber and pieces are also reported as exported in fairly high quantities. Some wild origin oil has been exported, with quantities of oil reported as exports by range States recently showing an upward trend. *Gyrinops* species are recorded in trade in much lower quantities than *Aquilaria;* wood chips are the main commodity reported in trade.

The proponents seek to adopt a new annotation that will apply only to *Aquilaria* spp. and *Gyrinops* spp.. The relevant differences between the proposed annotation and existing annotation #4 are the **exemption of**: fruits; leaves; mixed oil containing less than 15% of agarwood oil (labelled as indicated); exhausted agarwood powder, including compressed powder in all shapes; finished products packaged and ready for retail trade, except for beads, prayer beads and carvings.

Two of the proponents of the present proposal (Indonesia and Kuwait) have also proposed an amendment to *Resolution Conf. 13.7 (Rev. CoP14)* on control in trade of personal and household effects (see document CoP16 Doc. 47) to exempt the following when they are deemed personal or household effects: - Specimens of agarwood – up to 1 kg woodchips, 60 ml oil, and two pieces of beads, (or prayer beads, necklaces, bracelets) per person.

Analyses: Under *Resolution Conf. 11.21 (Rev. CoP15)* regarding Use of Annotations in Appendices I and II, the Parties recommended that two main principles be followed as standard guidance when drafting future annotations for medicinal plants:
i) controls should concentrate on those commodities that first appear in international trade as exports from range States; these may range from crude to processed material; and
ii) controls should include only those commodities that dominate the trade and the demand for the wild resource.

The essential questions are whether any of the products proposed for exemption in the current proposal meet the above criteria or not, and if not whether exempting them would create implementation problems for regulation of the other products in trade that do meet these criteria.

Leaves and **fruits** are a minor part of the trade, and can be non-destructively harvested. It would appear that exempting these from CITES controls will not cause conservation, implementation or enforcement problems.

Oils: Because current CITES reporting does not indicate the percentage purity of oils in trade, it is not possible to determine what proportion of the reported export trade in agarwood oil from range States at present is accounted for by oils less than 15% purity. From an understanding of the trade dynamics it can be inferred that oil at less than 15% concentration is likely to be relatively small and that it is therefore not a product that dominates the initial export trade or the demand for the wild resource. It also seems likely that products containing less than 15% agarwood oil are likely to be finished products packaged for the retail trade, which would in any case be exempted under proposed paragraph g).

It is not clear how easy it would be to distinguish oils of less than 15% purity from more concentrated or pure oils. Realistically, for mixed oils this would have to be based on labelling. The proposal is for a form of labelling similar to that currently used for *Hoodia* spp. (see proposal CoP16 Prop. 52) to distinguish the two. This labelling is not known to have been used in practice, at least in part because the commercial demand for *Hoodia* extract has not materialised to the extent anticipated when the taxon was listed in 2004. It is not clear from the present agarwood proposal whether this labelling is intended to apply to all agarwood mixed-oil products in trade, or only those exported by range States. It is assumed that labelling of this form would not be expected to apply to finished products composed of or containing mixed-oils, as these would be exempted under paragraph g) for which no such labelling is specified.

Powder: A substantial amount of reported export from range States of agarwood has been in the form of powder. These quantities are likely to include un-exhausted powder (i.e. not a byproduct of any distillation process), which would not be exempt from Appendix-II controls. It is not clear how easy the two forms might be to distinguish, although the proponents state that there are consistent differences between the two forms. Exhausted powder is clearly not a product that dominates the

demand for the wild resource and is unlikely to dominate the trade, although because at present different kinds of powder are not distinguished in the CITES trade database, it is not possible to determine what proportion of the powder reported in trade is exhausted.

Finished products The kinds of finished products that would be included in the exemption are not specified. The proponent notes in the supporting statement that the exemption does not apply *inter alia* to patent medicines; however the proposal would exclude “g) finished products packaged and ready for retail trade” and does not mention not exempting patent medicines, which would presumably be considered to be “finished products”.

Inclusion of *Cyphostemma laza* in Appendix II

Proponent: Madagascar

Summary: *Cyphostemma laza* is a succulent plant from Madagascar, believed to be the most widespread of around 23 Malagasy species in the large genus *Cyphostemma*. It forms an elongated, thickened trunk or caudex up to 50cm in diameter and 1.2 m in height, from which extend vines up to five metres or so in length. The species typically grows in partially shaded areas in semi-deciduous dry forest and has very wide distribution in Madagascar, being known from locations in the south, south-west, west and north. The species is recorded from at least eight protected areas across its range, and may occur in others. The population density of mature individuals appears to be generally low in areas where it occurs (around 20 per hectare or less). Its habitat in some areas is affected by conversion of habitat for agriculture, deforestation and charcoal production. The species is reported to be collected from the wild for international trade as an ornamental plant. The absence of individuals of a commercially exploitable size at collection sites is reported. It is exported both as plant and as seed. Considerable numbers of plants were reported as exported in the early 2000s, reaching a peak of nearly 8000 in 2006. However, no plants of the species were recorded as exported in 2007 and 2008. Export is not reported for later years. The species is available to purchase from multiple online sellers based in Europe, Asia and the USA. It is reported to be easy to grow and to propagate from seed, although slow-growing, so that plants take a considerable amount of time to develop caudex stems. Plants offered for sale outside Madagascar often have such stems. Current legal controls in Madagascar on collection and export are unclear.

C. laza was proposed for inclusion in Appendix II at CoP15 in 2010. The proposal was withdrawn at the CoP. Two other Malagasy *Cyphostemma* species – *C. elephantopus* and *C. montagnaci* – were included in Appendix II at that time. No trade in either species has subsequently been recorded in the CITES trade database.

Analysis: *Cyphostemma laza* is a very widespread plant in Madagascar. Although it is reported as occurring at generally low or very low density, its overall population is likely to be large or very large. The species is in cultivation and has been collected from the wild and exported in some quantity. It is assumed that most if not all exported plants were wild-collected. However, no export from the range State has been reported since 2006. Although collection for export may well have led to local depletion, it seems unlikely, given its very extensive range, that regulation of trade is necessary to prevent the species becoming eligible for inclusion in Appendix I in the near future, or that harvest for trade is reducing the population to a level at which its survival might be threatened by other influences. The species would therefore not appear to meet the criteria for inclusion in Appendix II.

ANNEXES:

ANNEX 1. Appendix I and Appendix II Biological Criteria (*Resolution Conf. 9.24 (Rev. CoP15)*)

ANNEX 2.1. Summary of the IUCN Red List Categories and Criteria version 2.3 (IUCN, 1994)

ANNEX 2.2. Summary of the IUCN Red List Categories and Criteria version 3.1 (IUCN, 2001).

ANNEX 1. APPENDIX I AND APPENDIX II BIOLOGICAL CRITERIA (*Resolution Conf. 9.24 (Rev. CoP15*)).
***Note*: The numbers presented below are meant to serve as guidelines and not as thresholds (see *Res. Conf 9.24 (Rev. CoP15)* Annex 5)**

CRITERIA FOR INCLUSION OF SPECIES IN APPENDIX I – Use of at least one of the A-C criteria for species that are or may be affected by trade.

A. Small Wild Population

Small number of individuals and at least one of the following occurs:	<5 000
i) decline in number of individuals or area and quality of habitat	20% or more in last 5 years or 2 generations
ii) each subpopulation very small	<500
iii) majority of individuals concentrated geographically during one or more life-history phase	
iv) large short-term fluctuation in population size	
v) high vulnerability to either intrinsic or extrinsic factors	

B. Restricted Distribution

Restricted area of distribution and at least one of the following occurs:

i) fragmentation/occurrence at very few locations
ii) large fluctuation in area or number of subpopulations
iii) high vulnerability to either intrinsic or extrinsic factors
iv) a decrease (observed, inferred or projected) in any one of the following:
- area of distribution
- area of habitat
- number of subpopulations
- number of individuals
- quality of habitat
- recruitment

C. Declining Wild Population

Marked decline in the number of individuals in the wild which has been either:	historic decline to 5%-30% (5% -20% for commercially exploited aquatic species) of the baseline population; recent rate of decline 50% or more in last 10 years or 3 generations

i) observed as ongoing or having occurred in the past (but with a potential to resume); or
ii) inferred or projected on the basis of any one of the following:
- decrease in area of habitat
- decrease in quality of habitat
- levels/patterns of exploitation
- high vulnerability to either intrinsic or extrinsic factors
- decreasing recruitment

CRITERIA FOR THE INCLUSION OF SPECIES IN APPENDIX II
In accordance with Article II, Paragraph 2(a)
Species should be included in Appendix II when at least one of the following criteria is met

A. Regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future
B. Regulation of trade in the species is required to ensure harvesting of specimens from the wild is not reducing wild populations to a level at which its survival might be threatened by continued harvesting or other influences.

In Accordance with Article II, Paragraph 2(b)
Species should be included in Appendix II if it satisfies one of the following criteria

A. The specimens of the species traded resemble specimens of a species included in Appendix II or Appendix I, such that enforcement officers are unlikely to be able to distinguish between them.
B. There are compelling reasons other than those given above in criterion A to ensure that effective control of trade in currently listed species is achieved.

Annex 2.1 Summary of the IUCN Red List Categories and Criteria Version 2.3 (IUCN, 1994)

Use any of the A-E criteria

		Critically Endangered	Endangered	Vulnerable
A. Population Reduction in 10 years or 3 generations at least:		80%	50%	20%
Using either 1 or 2				
(1) Population reduction observed, estimated, inferred, or suspected in the past, based on any of the following:				
a) direct observation				
b) an index of abundance appropriate for the taxon				
c) a decline in area of occupancy, extent of occurrence and/or quality of habitat				
d) actual or potential levels of exploitation				
e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites				
(2) Population decline projected or suspected to be met in the future based on b) to e) under (1)				
B. Geographic range in the form of one of the following:				
Extent of occurrence		<100km^2	<5000km^2	<20 000km^2
Area of occupancy		<10km^2	<500km^2	<2000km^2
And 2 of the following 3:				
(1) Severely fragmented:(isolated subpopulations with a reduced probability of recolonisation, once extinct) OR known to exist at # locations		=1	< 5	< 10
(2) Continuing decline observed, inferred or projected at any rate in any of the following:				
a) extent of occurrence				
b) area of occupancy				
c) area, extent and/or quality of habitat				
d) number of locations or subpopulations				
e) number of mature individuals				
(3) Extreme fluctuations in any of the following:		>1order/mag	>1order/mag	>1order/mag
a) extent of occurrence				
b) area of occupancy				
c) number of locations or subpopulations				
d) number of mature individuals				
C. Small Population Size and Decline				
Number of mature individuals		< 250	< 2500	< 10 000
AND either C1 or C2:				
(1) A rapid continuing decline of at least		25% in 3 yrs or 1 gene	20% in 5 yrs or 2 gene	10% in 10 yrs or 3 gene
(2) A continuing decline observed, projected, or inferred at any rate in numbers of mature individuals AND (a) or (b):				
a) population severely fragmented or				< 1000
b) # of mature individuals in each subpopulation		< 50	< 250	
D. Very Small or Restricted population				
Either:				< 1000
(1) # of mature individuals	OR	< 50	< 250	
(2) population is susceptible		(not applicable)	(not applicable)	area of occupancy 100km^2 or # of locations

	Critically Endangered	Endangered	Vulnerable
			< 5
E. Quantitative analysis			
Indicating the probability of extinction in the wild to be at least	50% in 10 yrs or 3 gene	20% in 20 yrs or 5 gene	10% in 100 yrs

Annex 2.2 Summary of the IUCN Red List Categories and Criteria version 3.1 (IUCN, 2001)

Use any of the A-E criteria

	Critically Endangered	Endangered	Vulnerable
A. Population Reduction in 10 years or 3 generations at least:			
A1	90%	70%	50%
A2, A3, A4	80%	50%	20%
(1) Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased, based on and specifying any of the following: a) direct observation b) an index of abundance appropriate for the taxon c) a decline in area of occupancy, extent of occurrence and/or quality of habitat d) actual or potential levels of exploitation e) the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites			
(2) Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction may NOT have ceased OR may not be understood OR may not be reversible, based on (a) and (e) under (1)			
(3) Population reduction projected or suspected to be met in the future (up to a maximum of 100 years) based on (b) to (e)under (1)			
(4) Population reduction observed, estimated, inferred, projected or suspected (up to a maximum of 100 years) where the time period must include both the past and the future, and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible, based on (a) and (e) under (1)			
B. Geographic range in the form of either B1 (extent or occurrence) AND/OR B2 (area or occupancy)			
B1 Extent of occurrence	<100km^2	<5000km^2	<20 000km^2
B2 Area of occupancy	<10km^2	<500km^2	<2000km^2
AND at least 2 of the following:			
(a) Severely fragmented, OR: # of locations	= 1	<5	< 10
(b) Continuing decline in any of the following: i) extent of occurrence ii) area of occupancy iii) area, extent and/or quality of habitat iv) number of locations or subpopulations v) number of mature individuals			
(c) Extreme fluctuations in any of: i) extent of occurrence ii) area of occupancy iii) number of locations or subpopulations iv) number of mature individuals			
C. Small Population Size and Decline			
Number of mature individuals	<250	< 2500	< 10 000
AND either C1 or C2:			
(1) An estimated continuing decline of at least: (up to a maximum of 100 years)	25% in 3 yrs or 1 gene	20% in 5 yrs or 2 gene	10% in 10 yrs or 3 gene
(2) A continuing decline AND (a) and/or (b):			
(a) i) # of mature individuals in each subpopulation:	< 50	< 250	< 1000
(ii) OR % individuals in one subpopulation at least	90%	95%	100%
(b) extreme fluctuations in the # of mature individuals			

	Critically Endangered	Endangered	Vulnerable
D. Very Small or Restricted population			
Either:			
(1) # of mature individuals	< 50	< 250	< 1000
AND/ OR			
(2) Restricted area of occupancy	(not applicable)	(not applicable)	area of occupancy 20km^2 or # of locations < 5
E. Quantitative analysis			
Indicating the probability of Extinction in the wild to be at least	50% in 10 yrs (100 yrs max)	20% in 20 yrs (100 yrs max)	10% in 100 yrs

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http://www.iucn.org/about/work/programmes/species/who_we_are/about_the_species_survival_commission_/

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