# IUCN/TRAFFIC Analyses of the Proposals to Amend the CITES Appendices at the 13th Meeting of the Conference of the Parties

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**Prepared by**
**IUCN Species Survival Commission**
**and TRAFFIC**

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The World Conservation Union

Species Survival Commission

TRAFFIC

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**IUCN-The World Conservation Union** IUCN-The World Conservation Union brings together states, government agencies and a diverse range of non-governmental organizations in a unique global partnership - over 1 000 members in some 140 countries. As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. IUCN builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

**The Species Survival Commission** (SSC) is the largest of IUCN's six volunteer commissions. With 8 000 scientists, field researchers, government officials and conservation leaders, the SSC membership is an unmatched source of information about biodiversity conservation. SSC members provide technical and scientific advice to conservation activities throughout the world and to governments, international conventions and conservation organizations. They provide information critical to the development of conservation products and tools such as the IUCN Red List of Threatened Species. SSC works primarily through its 120 Specialist Groups, which represent a wide range of plants and animals, particularly those threatened with extinction, or issues such as veterinary medicine, conservation breeding, and sustainable use of wildlife.

**TRAFFIC** the wildlife trade monitoring network, works to ensure that wildlife trade is not a threat to the conservation of nature. TRAFFIC is a joint programme of IUCN - The World Conservation Union and WWF, the world conservation organization.

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## INTRODUCTION

If CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is to remain a credible instrument for conserving species affected by trade, the decisions of the Parties must be based on the best available scientific and technical information. Recognizing this, IUCN's Species Survival Commission (SSC) and TRAFFIC, the wildlife trade monitoring network, have undertaken to provide technical reviews of the proposals to amend the CITES Appendices. SSC has collected information on the status and biology of species from its Specialist Group network and broader scientific community, and TRAFFIC has focussed on the analysis of the trade and use components of the proposals, drawing on its own information sources and expert networks. The resulting document is, like any collaborative document, uneven. It does, however, bring 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 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 paragraph, a specific analysis of whether the proposal might be considered to meet the pertinent criteria in Resolution Conf. 9.24 or not. Where particularly relevant, some observations on enforcement issues may also be made. 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. Text in the left hand side is culled from the supporting statement provided by the proponents of that proposal. Text in the right hand side consists of comments, observations and additional information obtained in the review process.

To target information collection and reduce the demands made of reviewers, the review process was somewhat different from that used in the past by IUCN and TRAFFIC. In this instance, following the deadline for Parties' submission of amendment proposals (5 May 2004), the review team compiled available information to prepare a first draft review. These drafts, together with a series of additional questions and clarifications were then sent to a variety of reviewers for comment and reviewers' responses were compiled into the final document. Over 400 experts were contacted and almost 50% sent information in time for inclusion in the *Analyses*.

To comply with the needs of the Parties for information well before the CoP, the reviews were completed on 29 July 2004. In response to recommendations put forward by evaluators after the 12th CITES Conference of the Parties (CoP), the summary sections are being distributed widely to reach as broad a target audience as possible. The background material will be available separately on the Internet and via e-mail.

These analyses aim to highlight relevant information on which the Parties can base their judgements, not to be exhaustive. Clearly there may be omissions and differences of interpretation in a document compiled on a wide range of species in such a short time. We have nevertheless tried to ensure that the document is factual and objective. It is challenging to reflect reviewers' responses in a balanced manner, particularly when strong views are held and the information presented is of variable quality, and it has not always been possible to provide a consensus picture. The time constraints have precluded the majority of reviewers from seeing the product before publication. The compilers take full responsibility for any misrepresentation.

A fold-out 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 in Resolution Conf 9.24, Annex 5 are not thresholds and may not be appropriate for all species.

References to source material are provided wherever possible; in some cases, these sources have been consulted directly; 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. The assessments expressed in this publication do not necessarily reflect those of IUCN or TRAFFIC, nor the reviewers as a body. The conservation status of animals should be assumed to come from the 2003 IUCN Red List of Threatened Species unless indicated otherwise. CITES Trade Data refer to data from CITES Annual Reports as provided by the Parties and managed by UNEP-WCMC. Where information has been provided from a particular country's official trade statistics, this has been specified.

## ACKNOWLEDGEMENTS AND CREDITS

Many individuals and institutions contributed to the review of the CITES amendment proposals and compilation of the present Analyses. Those to whom we would first like to extend our thanks are the reviewers of these proposals, many of them members of the IUCN Species Survival Commission Specialist Groups or BirdLife, as well as the many other scientists and experts from other institutions who, although not formally linked with SSC, have volunteered their time and expertise to this process.

The staff members of TRAFFIC who assisted in the review of proposals and compiled trade and use accounts, deserve recognition for the contribution they have made to this document. In addition, staff of the UNEP-World Conservation Monitoring Centre have assisted in providing information from the CITES database as well as bibliographic and other reference material. We are particularly grateful to Mary Cordiner and Helen Corrigan. We would also like to thank the French translators Daniele and Richard Devitre and the team of Spanish translators (ATECMA): Mónica Fuentes Ortega and Ángela Maldonado García (translation) and Carlos Ibero Solana and Rocío Hernández Clemente (scientific revision).

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## List of Analyses

## Inclusion of a new paragraph after paragraph 4 in the Interpretation section of the Appendices, to read as follows (with the following paragraphs being renumbered):

**5. The following are not subject to the provisions of the Convention:**

**a) *in vitro* cultivated DNA* that does not contain any part of the original from which it is derived;**

**b) cells or cell lines** cultivated *in vitro* that theoretically at a molecular level do not contain any part of the original animal or plant from which they are derived;**

**c) urine and faeces;**

**d) medicines and other pharmaceutical products such as vaccines, including those in development and in process materials +, that theoretically at a molecular level do not contain any part of the original animal or plant from which they are derived; and**

**e) fossils.**

*** That is DNA that is assembled from its constituent materials, not solely extracted directly from plants and animals.**

**** That is cultures of plant or animal cells, that are maintained and/or propagated in artificial conditions and do not contain any significant part of the original plant or animal from which they are derived.**

**+ That is products subject to a research or manufacturing process such as medicines, potential medicines and other pharmaceuticals such as vaccines that are produced under conditions of research, diagnostic laboratory or pharmaceutical production and do not depend for their production in bulk solely on material extracted from plants or animals and do not contain any significant part of the original plant or animal from which they are derived.**

## Proponent: Ireland, on behalf of the Member States of the European Community.

The wider summary and analysis for this proposal are presented in combination with that for Proposal 2, which addresses the same issue. Reference should be made to that assessment as background for the text that follows, and with regard to c) urine and faeces and e) fossils.

**Comments, observations and additional information provided by the review process with regard to specific elements of the proposal.**

**a) *In vitro* cultivated DNA (further defined as DNA that is assembled from its constituent materials, not solely extracted directly from plants and animals) that does not contain any part of the original from which it is derived.**

*The proposed text and accompanying definition require clarification, e.g., with regard to the term "the original" and "its constituent materials". MacNicoll (2004) proposes as an alternative definition of "*in vitro *cultivated DNA" - "That is DNA that is assembled from its constituent materials by* chemical synthesis, cell-free enzymes or cell-based cloning*, not solely extracted directly from plants and animals." He adds that DNA derived in this way would not pose a threat to endangered species assuming non-lethal sampling methods.*

**b) cells or cell lines (further defined as "cultures of plant or animal cells, that are maintained and/or propagated in artificial conditions and do not contain any significant part of the original plant or animal from which they are derived") cultivated *in vitro* that theoretically at a molecular level do not contain any part of the original animal or plant from which they are derived.**

*The definition is open to interpretation, e.g., with regard to the terms "artificial conditions" and "any significant part."*

*MacNicoll (2004) notes that while exclusion of "immortal" or cloned cell lines such as those derived by insertion of foreign DNA into viral, bacterial, plant or animal cells commonly used for this purpose would not pose a concern, this might not be the case for cell lines for which there was a repeated need to obtain cells from particular species, especially where this involved cells from brain, liver or other tissues/organs. He suggests that failure to limit trade to "immortal" cell lines could provide a loophole for repeated sampling and trade of cells from endangered species, and that the issue that would need to be addressed is whether this trade caused harm to the species concerned.*

***d)* medicines and other pharmaceutical products such as vaccines, including those in development and in process materials (further defined as "products subject to a research or manufacturing process such as medicines, potential medicines and other pharmaceuticals such as vaccines that are produced under conditions**

**of research, diagnostic laboratory or pharmaceutical production and do not depend for their production in bulk solely on material extracted from plants or animals and do not contain any significant part of the original plant or animal from which they are derived"), that theoretically at a molecular level do not contain any part of the original animal or plant from which they are derived.**

*Application to all Appendix I and II animal species could mean that many important pharmaceutical products such as vaccines that might contain minute amounts of original genetic material could be subject to CITES trade controls if they originated in CITES-listed species.*

*This interpretation may also be misconstrued to assume that all medicines are exempt from CITES controls, and confusion may arise over those that contain derivatives of species listed in the Appendices, and particularly in Appendix I. The reference to specimens not containing "any significant amounts" of the original plant or animal gives specific cause for concern and exemption of items on this basis would contradict the rules of the Convention (CITES Secretariat, 2004). Given the potential for abuse of such an annotation in the earlier proposal, some reviewers stated that the CITES Parties should consider a review of implementation at a later date to assess any negative consequences, were the proposal to be adopted (Mackay, 2002; TRAFFIC North America, 2002).*

**Reviewers:** M. Cooper, T. Jacob, W. Karesh, R. Kock, A. MacNicoll, TRAFFIC International.

## Inclusion of a new paragraph after paragraph 4 in the Interpretation section of the Appendices, to read as follows (with the following paragraphs being renumbered):

**5. The following are not subject to the provisions of the Convention:**
**a) *in vitro* cultivated DNA that does not contain any part of the original;**
**b) urine and faeces;**
**c) synthetically produced medicines and other pharmaceutical products such as vaccines that do not contain any part of the original genetic material from which they are derived; and**
**d) fossils."**

## Proponent: Switzerland (as the Depositary Government, at the request of the Standing Committee).

**Summary**: At CITES CoP11, through Decision 11.87, a need was identified to remove the administrative and financial burden of international movement of certain time-sensitive pharmaceutical, research, enforcement and veterinary samples that have components originating from species listed in the Appendices. This Decision was taken forward in the Animals Committee and Standing Committee and a highly technical and complex debate evolved over how certain items should be considered with regard to CITES controls or have expedited protocols for rapid international movement. The complexity of the issue means that this work is still ongoing; however, certain specimen types have been identified as less contentious and the Standing Committee has proposed a solution for these specimens (SC46 Doc. 12).

Switzerland was requested by the Standing Committee to deposit this proposed annotation to exclude certain specimens from CITES control. The annotation was mistakenly submitted as an amendment to Annotation °607, which refers only to corals, and therefore subsequently withdrawn. The present proposal has been modified slightly from the earlier draft in that it refers to "*in vitro* cultivated DNA" rather than "synthetically derived DNA" in response to a recommendation made by the Member States of the European Union. The European Union has submitted a somewhat modified proposal (Proposal 1), the specific elements of which are considered separately.

**Analysis**: Consideration of this proposal and Proposal 1 requires interpretation of the word "specimen" in the Convention text, CITES trade controls for which are universally required for Appendix I and II animal species, and the term "readily recognizable", the relationship between the two constantly evolving owing to enhancements in identification technology. Unlike for plants, the Convention does not allow for the general exemption of particular types of animal specimens. Furthermore, what might once have been considered unrecognizable, i.e., tissue or faecal samples, can often now be identified to the species level using DNA identification techniques, and may carry a label identifying the species concerned. A further issue rests with how far the Parties may go in terms of their '*interpretation*' of listings in the CITES Appendices - in contrast to the perceptions of some reviewers, the proposal does not relate to *exemptions*, which, as noted above, are not allowed for animal specimens.

It seems unlikely that the trade in DNA and cell lines produced by *in vitro* cultivation, urine and faeces, and fossils would stimulate wild harvest and therefore pose a related threat to CITES-listed species. However, deciding not to require CITES trade controls for such items would seem to run counter to the text of the Convention, though perhaps not its original intent. Synthetically produced DNA could arguably be considered as other than a part or derivative. Concerns regarding an interpretation that would not require CITES controls on trade in such items have been raised with regard to the potential impacts on research within developing country range States and other issues related to access and benefit sharing with regard to the use of genetic resources. However, concerns have also been raised with regard to potentially burdensome trade controls for items such as vaccines. The wording of paragraph c) in the proposal, for example indicates that these and other medicines that might theoretically contain minute quantities of original genetic material could still be subject to CITES trade controls if this material originated in specimens of CITES-listed species and was readily recognizable, e.g., labelled to this effect. Increased trade controls for items such as urine and faeces are considered unnecessary to conservation and unlikely to be successful in any event.

In discussing this issue further, the Parties might wish to consider:

* Whether any or all of these issues would more appropriately be addressed via Resolutions rather than by proposals to amend the Appendices;
* What the effect of changing the interpretation of the Appendices through adding issues that had not been considered or accepted at the time of prior listing decisions might be, e.g., whether this would have the effect of 're-opening' all existing listing decisions affected by this change;
* The potential for implementing streamlined permitting processes for these and other items of this nature, e.g. biological samples, in the context of Resolution Conf. 12.3; and
* Seeking advice from the Convention on Biological Diversity with regard to associated issues of access and benefit sharing.

*Several Parties voiced opposition to the proposal presented during CoP12, including one which felt it would impede research development in developing countries. Cooper (2004) proposes that concerns regarding access and benefit sharing could be addressed through biodiversity legislation and contracts appropriate to the issues raised rather than seeking to rely on CITES, which is limited to controls on international trade. Several Parties felt that the proposal was not well founded scientifically, particularly with regard to references to synthetically derived DNA (CoP12 Com. I Rep. 4 (Rev.)).*

*Based on consultation with veterinarians, Cooper (2002; 2004) argues that this interpretation will be of positive conservation importance, particularly concerning veterinary samples (urine and faeces), where the rapid movement of these samples is vital for accurate and timely diagnosis of disease, treatment or health monitoring. Jacob (2004) considers the main challenge as finding a tool that can affirm conformity with the access and benefit sharing obligations of the CBD in a way that does not pose bureaucratic hurdles at each point of movement or exchange.*

*The difficulty enforcement personnel are likely to encounter in differentiating between exempt and non-exempt samples may be a problem. However, this problem exists currently as millions of vaccines that might possibly contain traces of DNA cross international borders annually.*

**Comments, observations and additional information provided by the review process with regard to specific elements of the proposal.**

**a) *In vitro* cultivated DNA that does not contain any part of the original**

DNA can be produced either by direct chemical synthesis or by biological activity i*n vitro* and does not, therefore, pose a risk to threatened species in the wild (MacNicoll, 2002), assuming that it is collected in a manner appropriate to the species, and disposed of in a manner that will prevent potential contamination of other species/ecosystems (Karesh, 2004). Ready availability of DNA could actually be beneficial by reducing the need to obtain freshly derived DNA (MacNicoll, 2002). However, the proposed text requires further clarification, e.g., with regard to the term "the original".

**b) Urine and faeces**

Consideration of this proposal requires interpretation of the word "specimen" in the Convention text, CITES trade controls for which are universally required for Appendix I and II animal species, and the term "readily recognizable", the relationship between the two constantly evolving owing to enhancements in identification technology. Unlike for plants, the Convention does not allow for the general exemption of particular types of animal specimens. Furthermore, what might once have been considered unrecognizable, i.e., tissue or faecal samples, can often now be identified to the species level using DNA identification techniques, and may carry a label identifying the species concerned. A further issue rests with how far the Parties may go in terms of their '*interpretation*' of listings in the CITES Appendices - in contrast to the perceptions of some reviewers, the proposal does not relate to *exemptions*, which, as noted above, are not allowed for animal specimens.

**c) Synthetically produced medicines and other pharmaceutical products such as vaccines that do not contain any part of the original genetic material from which they are derived**

*The World Health Organization noted that many vaccines, e.g., the oral polio vaccine, are synthesised in a process using tissue cultures that may originally have been derived from CITES listed species, and could possibly contain trace amounts of original genetic material (Tarantola, 2002). The current wording of section c) in the proposal, if applied to all species in the Appendices, would mean that many important pharmaceutical products such as vaccines which might contain minute amounts of original genetic material would still be subject to CITES trade controls if they originated in species listed in the Appendices. However, items such as vaccines would be unlikely to be readily recognizable and therefore their trade would not be covered by the provisions of the Convention.*

*The interpretation proposed may also be misconstrued to assume that all medicines are exempt from CITES controls, and confusion may arise over those that contain derivatives of species listed in the Appendices, and particularly in Appendix I. Given the potential for abuse of such an exemption, some reviewers of the 2002 proposal stated that the CITES Parties should consider a review of implementation at a later date to assess any negative consequences, were the proposal to be adopted (Mackay, 2002; TRAFFIC North America, 2002).*

**d) Fossils**

*Coral fossils have already been deemed to be exempt from the provisions of the Convention. However, the definition of 'fossil' in this case has yet to be agreed, is the subject of a Resolution (Conf. 11.10 (Rev.), and of CoP13 Proposal 36, an analysis of which is provided in this volume.*

**Reviewers:** M. Cooper, T. Jacob, W. Karesh, R. Kock, A. MacNicoll, TRAFFIC International.

## Transfer of the Irrawaddy Dolphin *Orcaella brevirostris* from Appendix II to Appendix I. Proponent: Thailand.

**Summary**: The Irrawaddy Dolphin *Orcaella brevirostris* occurs in the Indo-Pacific from northeastern Australia to the Philippines and northeastern India. The species is patchily distributed in shallow nearshore tropical and subtropical marine waters, such as estuaries and semi-enclosed water bodies adjacent to mangrove forests. In addition, freshwater populations occur in the following three river systems: the Ayeyarwady (formely Irrawaddy) of Myanmar; the Mekong of Lao PDR, Cambodia and Vietnam and the Mahakam of Indonesia. No estimate of total abundance or population trend for the species is available, but several geographically isolated populations survive only in very low numbers. In at least two subpopulations (Ayeyarwady and Mekong), there is also evidence that the area of occurrence has declined. One population surveyed in Australia in the late 1980s was estimated to consist of around 1 000 animals. The species is classified by IUCN as Data Deficient; one subpopulation is classified as Critically Endangered and another four subpopulations will be similarly listed in the 2004 Red List on the basis that they number less than 50 mature individuals. Bycatch is thought to exceed sustainable levels for several subpopulations. Although the primary threat appears to be bycatch, disturbance due to ecotourism is of concern in some areas and removal for live display is projected to become a serious threat in the future. The species is suited to live display and at least 30 dolphins are known to have been captured between 1984 and 2002 for national display purposes. CITES data indicate that between 1993 and 2002, at least seven live individuals were exported from Thailand. The species is legally protected in half the known range States, but adequate enforcement of harvest and trade controls is reportedly lacking and reliable monitoring is hampered by the secrecy surrounding replenishment of the species within oceanaria. The species is currently included in Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS). The Scientific Committee of the International Whaling Commission (IWC) recommended in 2000 that all live captures should cease until affected populations have been assessed, and notes in 2004 that the proposed transfer to Appendix I is consistent with this recommendation.

The proponent seeks to include the Irrawaddy Dolphin in Appendix I in accordance with Resolution Conf. 9.24, Annex 1, Criteria B i); iii) iv) and Criterion C i) and ii) on the basis of a restricted distribution and declining population. The proponent argues that as individuals cannot be distinguished at the subpopulation level, trade in critically endangered populations may occur and thus the species should be included in Appendix I. The IWC Scientific Committee has endorsed the proposal to include this species in CITES Appendix I.

**Analysis**: The Irrawaddy Dolphin is in trade, and such trade may increase in the future, on the basis that additional dolphinaria are planned in the Asian region. Regarding the biological criteria for inclusion in Appendix I, the species has a large range and therefore does not meet the criteria under B in Annex 1 of Resolution Conf. 9.24. While population size and overall population trends are unknown, the population is fragmented. The only substantial population estimate is that made in the late 1980s of approximately
1 000 animals in waters in the western Gulf of Carpentaria, Northern Australia. Population densities in waters surveyed elsewhere off the Northern Territory, Australia, were evidently considerably lower, while much of the rest of the Australian range remains unsurveyed so that it is not possible to extrapolate from this to provide estimates for the overall Australian population, let alone that in the entire range. Furthermore, the animals in northern Australian waters are morphologically distinct from those in Asia. Populations in Southeast Asia appear to be small, fragmented and subject to unsustainable levels of mortality. The species is protected in at least nine out of a possible 15 range States, but enforcement needs to be improved. There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix I as set out in Resolution Conf. 9.24. However, it is not inconceivable that the species meets Criterion A, with a small fragmented population, or that it will meet Criterion D in the near future. In cases of uncertainty, in this case regarding the population status, Resolution Conf. 9.24 Annex 4, recommends that Parties act in the best conservation interests of the species.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| | *The animals in northern Australian waters are morphologically distinct from those in Asia (Beasley* et al., *2002).* |
| **Range** | |
| Australia, Bangladesh, Brunei Darussalem, Cambodia, Indonesia, India, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Vietnam. | *Papua New Guinea, Singapore (IUCN Red List 2003); East Timor (Kreb 2004). Smith (2004) questions whether the waters of Brunei Darussalam should be included in the range as to his knowledge only one sighting has been reported from an aerial survey.* |
| **IUCN Global Category** | |
| Data Deficient for the Global population but the Mahakam River population is listed as Critically Endangered. The Ayeyarwady, Mekong, Malampaya and Songkhla populations have been proposed as Critically Endangered, based on a population size of less than 50 mature individuals and the projection of continuing population declines (IUCN 2004, *in prep*.). | |

## Biological criteria for inclusion in Appendix I

**A) Small wild population**

**(i) Population or habitat decline; (ii) small subpopulations; (iii) one subpopulation; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour**

| | |
|---|---|
| In Australian waters, the population of the western Gulf of Carpentaria was estimated in the late 1980s to number 1 000 individuals, although this estimate was thought to be positively biased.<br><br>A number of Asian subpopulations are estimated to number fewer than 50 mature individuals: Mahakam River (34 individuals); Ayeyarwady River (59 individuals), Mekong River (69 individuals); Malampaya Sound (77 individuals) and Songkhla Lake (possibly as few as 8-15 individuals). In addition, sightings have been recorded from Brunei, Sabah, Sarawak, India and Bangladesh (Sundarbans sighting rate of 0.07 sightings/km). | *In Australia the species is reported to occur in Western Australia north of and including Broome (18°S), Northern Territory, and in Queensland, north of Gladstone (23°50'S). Surveys of waters off the Northern Territory, Australia, in the late 1980s found substantial populations, estimated at around 1 000 animals, in the western Gulf of Carpentaria, particularly in Blue Mud Bay. Relatively few animals were seen in waters off the north-west coast of the Northern Territory. Overall estimates for the region were 1 227 ± 301 individuals, uncorrected for animals below the surface (Freeland and Bayliss, 1989). No estimates are available for the rate of population* change. *The* Action Plan for Australian Cetaceans *(Bannister* et al., *1996) recommends that surveys should be undertaken off the Northern Territory coastline and the Great Barrier Reef region. The Action Plan lists the species as insufficiently known. More recently Parra* et al., *(2002) commented that the low numbers of sightings during aerial surveys in comparison with observations of other sympatric marine mammals suggest that Irrawaddy Dolphins are relatively uncommon in Australian waters or possibly are inadequately sampled on aerial surveys.*<br><br>*Little information is available on the size of coastal populations of this species in Asia, but Kreb (2004) indicates that the proportion of the global population found in coastal areas is likely to be greater than that found in the freshwater habitats.*<br><br>*Sightings have been reported from the coastal waters off Cambodia (Beasley* et al., *2001* unpubl.*) and Thailand (Beasley, 2004.).*<br><br>*Recent studies in Chilika Lake have observed more than 50 dolphins, with estimates of a minimum of 89 individuals (Chilka Development Corporation, 2003).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or subpopulations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| The species is discontinuously distributed in three large rivers, two marine appended lakes and near- shore marine environments that receive substantial freshwater input. Several geographically isolated populations survive only in very low numbers. The area of distribution of two subpopulations has decreased by 60% in over 100 years in the Ayeyarwady River and by an unrecorded amount in the Mekong River. | *The area of distribution of the Mekong river subpopulation has declined by at least 50% since the late 1860s (Beasley, 2004).*<br>*In the Mahakam, the range has decreased by 30% in 20 years from 820 km to 240 km river length (Kreb, 2004.)* |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| No quantitative estimates of population trends exist for the species, but probable declines in the number of individuals can be inferred for several populations. For small cetaceans it is recommended that removals from the population, through mortality or harvesting, should not exceed 1-2% of the population size. However, the following rates of removal have been estimated: Malampaya Sound - 2.6%; Mekong River - 5.8%; Mahakam River - 10%. Also in Songkhla Lake - 43 deaths were recorded between 1990-2003; and in the Ayeyarwady River the animals have disappeared from areas subject to high levels of gillnetting. | *In the Mahakam population, the average yearly mortality rate is 10% of the population or minimally five dolphins per year, which equals the birth rate. Entanglement in gillnets accounts for 80% of mortality. No change in abundance has been detected during a study period of 2.5 years (Kreb, 2004).* |
| **D) Status suggests inclusion in Appendix I within 5 years** | |
| | *Perrin (2004) contends that the projected demand from oceanaria indicates that the species would qualify for inclusion in Appendix I in five years.* |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| The current level of international trade is small, but expected to increase in future.<br>At the national level, over 30 individuals have been captured in Indonesia and Cambodia since 1974 for dolphinaria. There are now over 80 dolphinaria in at least nine Asian countries, with an additional 13 dolphinaria planned. The demand for captive cetaceans is reputedly high and increasing.<br>Many of the existing facilities are reportedly unregulated or exist in contravention of national laws. Illegal trade can only be inferred after the fact, when new animals are found in dolphinaria and authorities are unable to reveal the origins of animals. | *CITES data record a minimum of seven animals in international trade from 1993 to 2002. Thailand reportedly exported three individuals to Japan in 1994 for commercial purposes. In 1995, Japan reported the import of three individuals re-exported from Thailand, (possibly the same shipment as reported in 1994, although the purpose and country of origin details differed). In 1999 four animals reported as captive-bred in Thailand were exported to Singapore for zoological purposes.*<br>*Beasley (2004) believes that CITES data do not reflect actual trade levels, with only two Irrawaddy Dolphins reported as being exported from Thailand to Japan in 1994 and no dolphins exported from Thailand to Singapore in 1999.*<br>*An IWC report on small cetaceans recommended:*<br>*- "an immediate cessation of live captures until affected populations have been assessed using accepted scientific practices, given the likely precarious status of these animals throughout their range" (IWC, 2000). Kreb (2004) describes illegal captures in the Mahakam River in 1997 and 1998 to supply oceanaria, but indicates that in 2002 a request for live captures was turned down.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|

**Other information**

**Threats**

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|---|---|
| The principal threat is from bycatch. In addition, unregulated ecotourism and unregulated collection for dolphinaria are likely to impact populations. | Bycatch reduction measures could help to mitigate the impacts on the population. Acoustic pollution is a serious threat to the Mahakam population (Kreb, 2004). |

**Conservation, management and legislation**

| | |
|---|---|
| Direct taking of cetaceans is prohibited in Australia, Bangladesh, India, Lao PDR, Malaysia and Thailand. In Cambodia, a new law will provide protection to all cetaceans by the end of 2004. In Vietnam all cetaceans are protected by decree, but this is generally not enforced. Although some cetaceans are protected in the Philippines, this does not include the Irrawaddy Dolphin. The legal status of dolphins is unclear in Indonesia, Myanmar and East Timor.<br><br>Dolphin monitoring in undertaken by a range of NGOs. A few areas where the species occurs have been designated as protected, little has been done to conserve dolphin habitat. No specific management measures have been implemented by management authorities. | Since 1990, the species had been fully protected in Indonesia and killing, capturing and trade is prohibited (Kreb, 2004).<br><br>In Indonesia, local government authorities and an NGO monitor the Mahakam population. In 2005 a workshop at district level is planned to improve conservation of the Mahakam population. Awareness campaigns conducted since 2001 have resulted in the establishment of patrols to reduce illegal fishing techniques and prevent undetected gillnet entanglement of dolphins. Compensation for net damage is available (Kreb 2004).<br><br>According to Hale (1997) long-term conservation of the Australian population will require a mixture of regulation, education and community involvement. A focus solely on regulation through enforcement is likely to be of little benefit to the Australian population.<br><br>At the international level, the species in included in Appendix II of the Convention on Migratory Species (CMS). |

**Similar species**

| | |
|---|---|
| The species can easily be distinguished from other small cetaceans. However, individuals from the critically endangered subpopulations cannot be distinguished. | |

**Captive breeding**

| | |
|---|---|
| Births in captivity have been reported from Thailand and Indonesia. | The species is not listed in the International Species Inventory System (ISIS).<br><br>According to Kreb (2004), a mating in captivity has produced offspring, but it seems unlikely that individuals have been raised to produce second generation offspring in captivity. It seems likely that captive populations would need to be replenished from the wild for some time. |

**Other comments**

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|---|---|
| Comments from range States will be incorporated into a later draft. | Fishers in Cambodia and Lao PDR regard the animals as sacred. Effective bycatch reduction measures could apparently contribute significantly to improving the conservation status of this species and have been recommended under the CMS.<br><br>The Scientific Committee of the International Whaling Commission (IWC) has noted that the proposed revision of the CITES Appendices is consistent with its recommendation that all live captures of this species should cease until affected populations have been assessed using accepted scientific practices (IWC, 2004). |

**Reviewers:** I. Beasley, H. Gerson, D. Kreb, W. Perrin, TRAFFIC Southeast Asia.

## Transfer of the Okhotsk Sea West Pacific Stock, the Northeast Atlantic Stock and the North Atlantic Central Stock of the Minke Whale *Balaenoptera acutorostrata* from Appendix I to Appendix II. Proponent: Japan.

**Summary**: The International Whaling Commission (IWC) was set up under the International Convention for the Regulation of Whaling (ICRW) which was signed in Washington DC on 2 December 1946. The main duty of the IWC is to keep under review and revise as necessary the measures laid down in the Schedule to the ICRW which govern the conduct of whaling throughout the world. The IWC instituted a temporary moratorium on commercial whale harvest in 1986. Norway and the Russian Federation hold objections on this moratorium on commercial whaling. In turn, the Parties to CITES have recognised the function of the IWC with respect to whale harvesting (Resolution Conf. 11.4 (Rev, CoP12)). The CITES Appendix-I listing of the Minke Whale *B. acutorostrata* in 1986 was adopted in response to a request from the IWC for assistance in regulating trade. In 1992, The IWC adopted a methodology to calculate conservative harvest levels, the Revised Management Procedure (RMP), but full implementation has been delayed for 14 years by inability to agree the Revised Management Scheme (RMS) which would in turn provide the regulatory framework under which the RMP should function. However, in 2004, the IWC adopted Resolution 2004-6 in which the Commission agreed to proceed expeditiously towards completion of the text and technical details of the RMS with the aim of having results ready for consideration and possible adoption at the next meeting in 2005.

Since 1994, several range States have proposed transferring various stocks of whales to CITES Appendix II on the basis that the stocks in question do not meet the biological criteria for inclusion in Appendix I. This proposal seeks to transfer three stocks of Minke Whales, the Okhotsk Sea-West Pacific stock, the Northeast Atlantic stock and the North Atlantic Central stock from Appendix I to Appendix II.

In 1996 the Minke Whale*, B. acutorostrata* was assessed as Lower risk: near threatened using the 1994 IUCN Red List Criteria. The latest population estimates reviewed by the IWC for the three stocks are: for the Northeast Atlantic – 80 487 whales from survey data collected during 1996-2001; for the Central North Atlantic – 93 943 whales from the 2001 Icelandic and 1997 Norwegian estimates; for the Okhotsk Sea-West Pacific - 25 000 animals on the basis of 1989-1999 data.

Under its objection to the IWC moratorium, Norway resumed commercial whaling in 1993 and in 2003 took 711 Minke Whales; this year the quota is to be set at 670 animals. In 2003 Iceland commenced a scientific whaling programme, taking 36 whales that year; it plans to take another 25 animals in 2004 from the North Atlantic Central stock. Japan has been taking 100 –150 Minke Whales per year from the North Pacific under scientific permit, and has revised its scientific whaling proposals in order to take a total of 200 whales under the next phase of research. In compliance with CITES requirements, Japan reports those whales harvested on the high seas as Introduced from the Sea. As required by the ICRW, products from the scientific whaling are used domestically in Japan and Iceland. In addition Japan has also passed national legislation to allow the domestic marketing of products taken as bycatch. Catches from Japan and Norway are tracked through DNA registers of samples from each individual whale caught; for those from Iceland, the situation is unclear. In 2004, Norway reported to the IWC on the state of its DNA register covering the years 1997-2002, noting that progress had been made toward achieving a fully diagnostic register (IWC, 2003). Japan did not provide information on its register to the IWC. However, Japan now requires that most forms of cetacean bycatch are marketed and also included in its DNA register. Japan's bycatch includes individuals from the Sea of Japan stock, which overlaps seasonally with the Okhotsk Sea-West Pacific stock but is excluded from the proposed transfer.

In 2003, Norway and Iceland resumed commercial trade under their CITES reservations. According to the proposal, Japan aims to resume trade in legally acquired whale products with Norway and Iceland either under the proposed transfer to Appendix II or under the reservations that the three Parties took to the original inclusion of the taxon in CITES Appendix I. Whilst the proponent focuses on trade between Iceland, Norway and Japan, a transfer of the species to Appendix II would not limit trade to these three range States and CITES Parties will need to consider whether the precautionary measures are met with regard to i) making non-detriment for shared/high seas stocks; and ii) appropriate enforcement controls in place.

According to CITES Article XIV paragraph 4, any Party to CITES which is also a contracting State to a prior Convention such as the ICRW is relieved of CITES provisions with respect to trade. Under this article, the only CITES requirement is for the State of Introduction to issue a certificate to the effect that the whale was taken in accordance with the provisions of the ICRW. For States with objections to the

IWC moratorium or those undertaking whaling under scientific permit, such a certificate could be issued to demonstrate that the harvest was legal. For other ICRW members such permits could not be issued until the RMS has been adopted. For any state not a member of the ICRW, commercial trade under CITES could only be allowed on the basis of a non-detriment finding if the Parties do not implement the recommendations of Resolution Conf. 11.4. At present the only other ICRW member that has an objection to the ICRW moratorium is the Russian Federation.

**Analysis**: The stocks in question were included in CITES Appendix I in response to a request from the ICRW to assist in enforcing its pause in commercial whaling, not on biological criteria.

With regard to CITES requirements, the three stocks of Minke Whales addressed by this proposal do not appear to meet Criteria A, B or C of Resolution Conf. 9.24 Annex 1 for inclusion in Appendix I: the stocks (populations) are not small, declining or within a restricted range, according to the CITES guidelines elaborated in Resolution Conf. 9.24 Annex 5.

However, for approval of a transfer to Appendix II, CITES requires the precautionary measures outlined in Resolution Conf. 9.24 Annex 4 to be met. Regarding precautionary measure B2bi (Annex 4), international demand for whale products certainly exists between three range States that have indicated an interest in trade; it is not known whether any other Parties would resume trade.

Regarding precautionary measure B2bi), the proposal does not directly address this issue, but refers to the RMP under the section on current management measures. It is not clear from the proposal how the RMP will be implemented.

With regard to precautionary measure B2bii), the proponent states this will be met by the use of appropriate enforcement controls and compliance with the requirements of the Convention. Norway and Japan have implemented their own DNA register systems. Although the proponent indicates that Iceland has such a system, details are not available through the IWC forum. An effective system requires both the technology to collect samples for a DNA register and regulations to ensure appropriate sample collection and monitoring of byctach.

To determine if adequate controls are in place to regulate CITES trade, the Parties would need to decide what constitutes satisfactory implementation of Article IV and what constitutes an effective DNA register in relation to the CITES requirement for “appropriate enforcement controls". CITES Resolution Conf. 11.4 recommends Parties to adhere to the ICRW if they do not already do so. The IWC has developed a management procedure (RMP) that would fulfil the requirements of Article IV if it could be implemented and includes guidance on the development of DNA registers in its RMS, but this has yet to be adopted.

| **Information provided and statements made by the proponents in the Supporting Statement** | **Comments, observations and additional information provided by the review process** |
|---|---|
| **<u>Taxonomy</u>** | |
| **<u>Range</u>** | |
| **Okhotsk Sea–West Pacific Stock**: Minke Whales from this stock occur west of 170°E in the western North Pacific, but the western stock boundary is not clear. In summer this stock is found north of 35N. Range States: China, Federated States of Micronesia, Indonesia, Marshall Islands, Palau, Philippines, Russian Federation, United States of America. | *The ICRW Schedule lists the limit as west of 180°. The number of biological populations, their breeding areas, movement patterns and ranges remain a point of debate in the Okhotsk Sea–West Pacific Stock area. In addition to the named range states, Minke Whales in this area also occur in international waters (see IWC Schedule).* |
| **North Atlantic Stocks (NE and Central stocks):** range States for at least one of the two stocks: Belgium, Denmark (including the Faroe Islands and Greenland), France, Germany, Iceland, Ireland, Netherlands, Norway, Portugal, Russian Federation, Spain, Sweden, United Kingdom. The two stocks are genetically different. | *Morocco, Senegal, Mauritania are also confirmed range States for the Northeast Atlantic Stock and the Gambia is a probable range State (Van Waerebeek* et al.*, 1999*). |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| **IUCN Global Category** | |
| | *Assessed in 1996 as LR/nt, based on 1994 criteria (IUCN, 2003).* |
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| **Okhotsk Sea–West Pacific Stock**: The IWC-SC has accepted an estimate of 25 049 animals (95% confidence interval from 13 700 – 36 600). This is likely an underestimate due to methodology in which probability of detection on the track line [g(o)] is assumed to be one.<br><br>**North East Atlantic Stocks:** The most recent estimate adopted by the IWC Scientific Committee is 107 000 whales, similar to the 1996 estimate of 118 000 animals.<br><br>**North Atlantic Central stock:** In 1990, based on 1987 data, the IWC-SC accepted a best estimate of 28 000 with a 95% confidence interval of 21 600 to 31 400 Minke Whales. On the basis of 1995 data, the North Atlantic Marine Mammal Commission Scientific Committee presented an estimate of 72 100 with 95% confidence interval of 44 700-116 400. | *The IWC reviews survey and other information to estimate the size of whale populations subject to its jurisdiction.*<br><br>*The IWC has completed an implementation for the Okhotsk Sea –West Pacific Stock and is now conducting an in-depth assessment (IWC, Section 6. 2004).*<br><br>*For the abundance of Minke Whales in the North Atlantic excluding the Canadian East Coast, the IWC website gives a combined best estimate for the years 1987-95 of approximately 149 000 ± 120 000-182 000 whales (Anon, 2004).*<br><br>*The latest estimate accepted by the IWC Scientific committee for use in the RMP calculations for the Northeast Atlantic was 80 487 whales from survey data collected during 1996-2001 (see Table 1 of Appendix 14 of Annex D of the IWC Scientific Committee report, 2003).*<br><br>*The latest estimates accepted by the IWC Scientific committee for use in the RMP calculations for the Central North Atlantic are the 2001 Icelandic and the 1997 Norwegian estimates. These total 93 943 whales (see Table 1 of Appendix 14 of Annex D of the IWC Scientific Committee report, 2003).* |
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| Current distribution is considered similar to historic distribution – area of distribution is not restricted. | |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| **Okhotsk Sea –West Pacific Stock**: The above population estimate represents 61-88% of pre-exploitation abundance (IWC 1992). Results from Japan's scientific whaling indicate that mature females give birth every year and pregnancy rates are high, > .0.9.<br><br>**North East Atlantic Stocks:** the 1983 stock level was estimated to be 70% (95% confidence interval of 52%-94%) of the 1952 level (IWC Rep 44). The IWC-SC found that numbers suggest an annual stock increase of at least 2% from 1989 to 1995.<br><br>**North Atlantic Central stock:** subject to moderate levels of exploitation for a relatively limited period and scientists consider its present size to be similar to pre-exploitation | |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| levels. | |
| **D) Status suggests inclusion in Appendix I within 5 years** | |
| | *Unlikely if total harvest levels remain within catch limits set by the RMP. (IWC, 1999; J. Cetacean Res. Manage. 1 (Suppl):521-258).* |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| Aside from "introduction from the sea" for Minke Whale products taken in Japan's scientific whaling programmes, there is no current trade in Minke Whale products originating from Japan. However, the proponent indicates that it is discussing imports from Norway and Iceland.<br><br>From 1994–2001 up to 100 animals (0.4% of estimated stock size) have been removed annually by Japan from the North Pacific stock under ICRW provisions for research; this was increased to 150 animals in 2002. In addition, a relatively small number of animals are taken incidentally in coastal waters.<br><br>The Northeast Atlantic stock has traditionally only been hunted by Norway. Recent catches by Norway have ranged from 217 in 1993 to 647 in 2003. The North Atlantic Central stock has been hunted by both Norway and Iceland. No Minke Whales were caught in Icelandic waters from 1985-2002, but in 2003 Iceland took 38 whales for research purposes.<br><br>Prior to the IWC moratorium and CITES Appendix I listing, Norway exported small amounts of meat and most of the blubber to a limited number of countries. A small amount of whale meat was previously imported into Norway from Iceland but no trade has occurred from 1986. In 2002 Norway exported several small shipments of whale meat to Iceland, and in 2003 exported a small amount of meat to the Faroe Islands. | *CITES Annual Reports indicate that Japan reported issuing introduction from the sea permits for Minke Whales for scientific purposes in 1994 (351 whales), 1995 (540), 1996 (456), 1997 (533), and 2000 (16). Between 1988 – 2001 the reported catch from the Okhotsk Sea West-Pacific stock did not exceed 100 whales. The scientific harvest rose to 150 animals, and this year Japan presented a proposal to the IWC, which stimulated much discussion, to catch a total of 220 animals in the Okhotsk Sea-West Pacific area (IWC, 2004. Section 16.3).*<br><br>*In addition to the scientific whaling, bycatch also contributes to whale mortality. Of the 232 records of whales entangled in fishing gear, 124 were minke whales mostly from trapnets in Korea and Japan (IWC, 2004. Section 2.2). Japan has reported to the IWC the following incidental bycatch of Minke Whales: 79 in 2001; 109 in 1002; 125 in 2003. The recorded bycatch of this species in Korean waters was:148 in 2001; 83 in 2002; 87 in 2003 (IWC, 2004. Annex J).*<br><br>*Results from five market studies in Japan from 1999-2001 suggested that at least 97 individual North Pacific Minke Whale were involved in the trade during the study period, 42% of which showed the characteristic mtDNA haplotype of the J stock (which is excluded from this proposal). Relatively few replicate products were found suggesting that products from many other individuals remained unsampled. Very few replicate samples were shared between surveys over seven months apart, suggesting that products from an individual are not stored long term (IWC 2002;54/4 Annex D 6.3.1 discussion of SC/54/RMP8).*<br><br>*In 2002 according to CITES trade data, Norway's gross exports of meat to Iceland for trade purposes totalled 43 373 kg.* |
| **Precautionary Measures** | |
| **B2bi.: CoP satisfied with: Implementation of Article IV Annex 4, Res Conf 9.24** | |
| IWC members are bound by the moratorium on commercial whaling that will only be lifted when all elements of a Revised Management Scheme have been agreed. The RMS comprises a revised Management Procedure (RMP) which is a risk-averse method of calculating catch quotas.<br>In Japan, no whaling can be conducted unless the government issues a license. Currently only research permits are issued, in accordance with ICRW provisions.<br>Norway is not bound by the IWC moratorium, due to its objection. Norway has used the IWC RMP with a | *Harvest under Scientific Permit by Japan and Iceland and under Objection by Norway, conforms with ICRW legal provisions, but the ICRW maintains a zero catch limit for commercial harvest.*<br><br>*Implementing the CITES non-detriment finding for a stock that occurs on the high seas could require collaboration with other States, depending on the number of States that target such a stock. Adoption of the RMS would secure this collaboration, but has been delayed for over 14 years. Currently Norway and Iceland are not thought to take catches outside their Exclusive Economic Zone (EEZs).* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| tuning level of 0.62 to set catch quotas for the 2003 and 2004 seasons.<br>In 2003 Iceland started scientific whaling in accordance with ICRW provisions and took 36 animals. | *Under IWC regulations, the annual catch limits calculated from the RMP cannot be determined until the implementation preparation process (IWC 1999-Sci Com Rep J. Cetacean Res Manage. 1 (Suppl.):1-284) has been completed by the IWC Scientific Committee. The first Implementation trial for the North Pacific Minke Whales was completed in 2003 and a new in-depth assessment for North Pacific Minke Whales was agreed.*<br><br>*The second RMP Implementation Review for North Atlantic Minke Whales was completed in 2003. Until 2000 Norway used the RMP to set quotas for its harvest from the North East Atlantic Stock. Since 2001 Norway has used a modified version of the RMP to set harvest quotas from the North East Atlantic stock (IWC/54/4/AnnexD/Appendix14). The version of the RMP used was modified from the 2001 season (tuning was changed from 0.72 to 0.66) and was further modified from the 2003 season (tuning was changed from 0.66 to 0.62). The 2004 quota (670) uses the same tuning as in 2003. At the 2004 Meeting of the IWC Scientific Committee, Norway notified the Committee that it intends to develop and propose a change to the Catch limits Algorithm of the RMP for Minke Whales in the North Atlantic (IWC 2004. Section 5.6).*<br><br>*In the period 1990-1999, Norway took a total of 2 657 Minke Whales from the North East Atlantic Stock and 272 from the North Atlantic Central Stock. Since then Norway has taken the following numbers of Minke Whales: 487 in 2000; 552 in 2001 (Quota 549); 634 in 2002 (Quota 671); 670 in 2003 (Quota 711). After a pause since 1983, Iceland began scientific whaling in 2003, taking 36 Minke Whales that year. Under a revised research proposal, Iceland plans the following catches: 25, 39 and 100 in the years 2004, 2005 and 2006 respectively (IWC, 2004. Annex P Section 8.3). Under Scientific whaling in the Okhotsk Sea-West Pacific Japan has taken around 100 whales per year until 2001. In 2002, this catch level increased to 150 animals.*<br><br>*Appendix-II listing would allow countries other than Norway, Iceland and Japan to trade in whale products, possibly raising questions about making non-detriment findings and enforcement measures for non-ICRW members (whale harvesting would be illegal for IWCR members, except for those with permits for scientific whaling or an objection to the IWC moratorium). However, it is uncertain whether any other Parties would trade in whale products at this time.* |
| **B2bii: CoP satisfied with: appropriate enforcement controls Annex 4, Res Conf 9.24** | |
| The DNA registers of Japan, Norway and Iceland will ensure that legal trade does not stimulate Illegal, unregulated and unreported (IUU) fishing or illegal trade.<br><br>Japanese domestic legislation prohibits imports from non-IWC members and imports from IWC members is only allowed if the Japanese government confirms the authenticity of certificates of origin through diplomatic channels etc. Imported products will be subject to Japan's DNA monitoring and control system. Government officers | *CITES Parties will have to determine if the current DNA registration system of the three countries, and of any others that might trade in whale product, is effective for CITES purposes.*<br><br>*Norway has recently reported on the status of its DNA register to the IWC Scientific Committee and progress has been made towards achieving a fully diagnostic register. No information on collection and archiving of samples in Japan was available to the IWC Scientific Committee in 2004 (IWC, 2004. Section 15.2). Iceland* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| inspect all research activities.<br><br>Norwegian legislation protects all whales species, but permits for catching whales may be issued by the government. Export of whale products from Norway without a license is a criminal offence.<br><br>Icelandic legislation requires issuance of a specific permit to allow whaling or the processing of whale products.<br><br>Norway and Iceland have implemented DNA register systems.<br><br>. | *was not mentioned in the IWC Scientific Report with regard to a DNA register.*<br><br>*Market monitoring has reportedly been carried out since 1995 by the Institute of Cetacean Research according to information presented to TRAFFIC East Asia Japan (2002). Management of the Japanese domestic whale meat market is viewed by that country as being outside the jurisdiction and competence of the IWC (IWC 54/4/7.2).*<br><br>*TRAFFIC East Asia report that the Japanese domestic monitoring system requires improvement. Trade in whale meat from research whaling and incidental catch using fixed shore nets is monitored through DNA inventories. However, although it is planned that imported whale meat, and long-term stocks should also be regulated through inclusion of DNA samples in inventories, it is not clear that such measures are in place. There are no regulations yet to determine whether the Customs or the Fishery Agency will undertake the sampling of imports.* |

**Other information**

**Threats**

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|---|---|
| Habitat loss/degradation is not a threat to this species. There is no over-exploitation, by-catch is at low levels and is not a threat to this species. Toxins and pollutants present in the meat and blubber are at generally low levels. | *The J stock (excluded from this proposal, but overlapping in distribution seasonally with the Okhotsk Sea-West Pacific stock) is apparently threatened by incidental bycatch in fishing nets in South Korea and Japan (IWC, 2000). The IWC Scientific Committee in its in-depth assessment of the Sea of Okhotsk-West Pacific stock will focus on the J-stock (IWC, 2004. Annex G).* |

**Conservation, management and legislation**

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|---|---|
| The IWC has the responsibility for the management of Minke Whale Stocks, but has still not agreed the RMS. The RMP is a risk-averse method for calculating harvest levels.<br><br>Japan has conducted annual systematic sightings surveys in the western North Pacific and adjacent waters since the 1980s.<br><br>In the North East Atlantic and Central North Atlantic Norway and Iceland will continue to conduct population monitoring. | *The IWC maintains a zero catch limit for commercial whaling. A resolution concerning adoption of the RMS was tabled to the 2004 IWC Annual Meeting (IWC, Resolution 2004-6)). The draft RMS envisages that catches under Scientific Permit and incidental take would be deducted from RMP catch limits, to ensure that total catches over time do not exceed RMP levels.*<br><br>*Formal application of the IWC's RMP depends on agreement within the IWC forum on the appropriate Implementations. That agreement is not yet available for several stocks covered by this proposal.*<br><br>*All whale species are protected under Norwegian law, but individual capture permits for a specific number of animals in a specified area are issued by government. Since 1993 government inspectors have been on every whaling vessel throughout the catching operations and the area is patrolled by the Coast Guard.*<br><br>*In Japan, bycatch from fixed nets can enter the domestic market provided that it has been DNA sampled. Meat from strandings cannot be legally traded.* |

**Similar species**

| | |
|---|---|
| Antarctic Minke Whales are a different species *Balaenoptera bonarensis* and can be distinguished by | *Since the proposal relates to geographically defined stocks, enforcement would require a diagnostic DNA* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| DNA testing from Northern hemisphere stocks.<br><br>Other species are hunted under IWC quota for aboriginal/ subsistence purposes, but such products are for local consumption only. Whale products from non-IWC members, Canada and Philippines do not enter trade. | *register that includes profiles of all legally tradeable specimens together with information on capture location. Animals from the J-stock excluded from this proposal overlap temporally in their distribution with those from the Okhotsk Sea-West Pacific stock.* |
| **Captive breeding** | |
| N/A. | |
| **Other comments** | |
| The proponent notes that the taxa do not meet the biological criteria for inclusion in CITES Appendix I. Although the IWC adopted the RMP (the basis for setting conservative catch quotas) after 14 years, the IWC has been unable to agree the RMS due to political differences. | |

**Reviewers:** J.Cooke, D. Butterworth, H. Kato, R. Reeves, TRAFFIC East Asia**.**

## Deletion of the Bobcat *Lynx rufus* from Appendix II. Proponent: United States of America.

**Summary**: The Bobcat *Lynx rufus* is a medium-sized cat with a spotted coat. It is one of the most widely distributed native felids in North America, ranging from British Columbia, Canada to Oaxaca, Mexico. The species has been in demand for its pelt since the 18th century. The species was included in Appendix II in 1977, and in 1983 the Parties agreed not to remove it from Appendix II for reasons of similarity of appearance to other spotted cats that were deemed to be threatened by trade. In the 1990s, North America again became the largest exporter of cat skins for the pelt trade, primarily linked to exports of bobcat pelts. The Bobcat is similar in appearance to the other Lynx species, and arguably its pelt could also be confused with the skins from a number of spotted cat species from other genera. From 1993-2002, according to CITES Annual Report data, 15 Felid taxa have been recorded in trade for garments or skins. The proponent has discussed similarity of appearance amongst Lynx species and noted that the differentiation of spotted belly hair may be problematic, but has not considered the issue in relation to the wider trade in skins of the Felidae. Bobcat populations in the USA are large, with estimates in 1988 ranging from 700 000 to 1 500 000 adult animals and numbers are believed to be increasing. Populations in Canada and Mexico are reportedly also abundant (although evidence from population surveys is not presented). Harvests for international trade are regulated and managed in the three range States. The proponent seeks to delete *Lynx rufus* from Appendix II as neither domestic nor international trade is thought to constitute a threat to the species.

**Analysis:** Following Resolution Conf. 9.24 Annex 4 Paragraph 4, it appears unlikely that deletion from Appendix II will result in the species qualifying for inclusion in the Appendices under Annex 2a in the near future. However as the species appears to meet Criterion B of Annex 2b, which provides for inclusion in Appendix II for look-alike reasons, reviewers indicate that the species should not be removed from the Appendices.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | **Taxonomy** |
| | **Range** |
| Canada, Mexico and USA. | |
| | **IUCN Global Category** |
| | *Contrary to what is stated in the proposal, the species is listed as Least Concern (IUCN 2003)* |
| **Biological and trade criteria for retention in Appendix II** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| The species has been included in Appendix II since 1977. In 1988 the population was estimated to number between 700 000 and 1 500 000 adults. Geographic expansion of range and notable increases in density during the last decade suggest that the population size has increased. Populations in Canada and Mexico are reported as widespread and generally abundant.<br><br>Harvests in North America have varied due to changes in pelt value and fur harvest intensity for other species. | *Nowell (2004), notes that the 1983 US proposal to delete the Bobcat from Appendix II quoted the same population estimate (500 000 to 1.5 million) that is attributed in the current proposal to Turbak (1988). Nielsen (2004 ) notes that Bobcat distribution within Illlinois is less restricted than appears from the supporting statement (Nielsen and Wolf, 2002; Woolf* et al*, 2002).*<br><br>*Neither the level of international trade, nor the percentage of national harvest that is exported is provided in the proposal (Nowell, 2004). CITES data show the net export of over 740 000 skins from 1977 to 2002. Of these, the US and Canada reported exporting over 650 000 skins and over 53 000 skins respectively.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| Hunting is regulated at the State level in the USA, on the basis of adaptive management programmes. Managers generally consider a harvest of 20% of the population per annum to be the maximum sustainable yield. | *US reported exports declined to under 10 000 pelts annually during the 1990s, but show signs of increase above this level in the current millenium. The major net importers were European Parties, Germany and Switzerland during the 1980s, and in the 1990s, Italy and Greece. There was no reported trade in Bobcat bones, and skin pieces and scraps apparently account for a small proportion of the trade.*<br><br>*Reviewers concur that removal from Appendix II would be unlikely to result in a large unmanaged trade that would threaten the species (Mowatt, 2004; Nielsen, 2004; Ray, 2004) but caution that this is not to say that removal from Appendix II would be a positive contribution to the long term conservation of the species (Nowell, 2004).* |
| **Retention in Appendix II to improve control of other listed species**<br><br>**Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| Several species are similar in appearance to the Bobcat including the Canada Lynx *Lynx canadensis*, the Iberian Lynx *Lynx pardinus* and Eurasian Lynx *Lynx lynx*. Although differentiation of spotted belly hair may be problematic, the pelage and skull can be used to clearly distinguish Bobcats from other members of the genus. | *The species was included in CITES Appendix II in 1977 and retained in Appendix II in 1983 under a higher taxon listing for the Felidae, to bring the unsustainable trade in cat skins under control. The Bobcat is similar in appearance to the three other Lynx species, and arguably its pelt could also be confused with the skins from a number of Latin American spotted cat species (Ray, 2004).*<br><br>*CITES reported gross exports from 1993 to 2002 show skins of the following felid species in international trade (on the basis of the following terms: GAR. SKI, SKP, PLA; species marked – VU are classified by IUCN as Vulnerable):* Caracal caracal; Leptailurus serval; Lynx canadensis; L. lynx; L. rufus; L. rufus escuinapae; Prionailurus bengalensis; P. bengalensis chinensis; P. viverrinus – *VU; (species less likely to be confused with Bobcat, although juveniles may have spotted coats:* Panthera leo – *VU;* Felis silvestris; F. silvestris libyca; Profelis aurata – *VU;* Puma concolor; P. concolor missoulensis).<br><br>*Although the Iberian Lynx is Critically Endangered with an effective population size of only 250 mature animals, it seems unlikely that its pelt would enter trade.*<br><br>*Nowell (2004) notes that although Bobcat pelts and, to a lesser degree, skulls should be distinguishable by a trained person, pelt pieces and other bones would be more difficult, and concludes that removal of the Bobcat from Appendix II could create a loophole for illegal trade outside the CITES purview. Mowatt (2004) suggests the exporting states can and should be required to ship pelts in sealed containers and only export whole pelts should the proposal be accepted.* |
| **Other information** | |
| **Threats** | |
| Loss of habitat to urbanisation is the only significant threat at present. | |
| **Conservation, management and legislation** | |
| In the USA Bobcats are classified as game or fur bearers and harvested under regulation. Closed seasons are | *In Canada the hunting of Bobcats is managed entirely by the Provinces and Territories and each Province and* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| implemented in nine US States. In Canada, hunting is regulated and in Mexico five States have hunting regulations.<br><br>Population monitoring is carried out through the use of indices. States periodically review species harvest programmes. In the USA, the *Lacy Act* controls transport of Bobcats across International borders. | *Territory which allows Bobcat hunting has a management plan for the species. Removal from CITES would not affect this. Similarly in the USA, harvest is managed at the state level. In Mexico, the de-listing would have no effect on the current protection/oversight of the Bobcat. The species is not considered under any category of threat and is not included in the NOM 059 ECOL 2001 (the Official Mexican Norm) and hunting is restricted. However a de-listing could mean less oversight of the movement of Bobcat skins, but potential for movement of Lynx or Mexican Bobcat skins as bobcats of US origin (TRAFFIC North America, 2002).* |
| **Captive Breeding** | |
| Some US States allow and regulate captive rearing for commercial purposes, but the current pelt trade is dominated by wild fur harvests. | |
| **Other comments** | |
| | *The extent to which control of trade in* Lynx rufus *is needed to control trade in spotted cat skins other than Lynx spp. is not considered by the proponent.*<br><br>*Arguably, Leopard Cat* Felis bengalensis *parts may be confused with those of the Bobcat. However, according to TRAFFIC East Asia (2004), China has banned Leopard Cat harvesting and export certificates can only be issued for items in the stockpile that has been registered with the CITES Management Authority in China. Approximately 10 000 skins remain in the stockpile which is likely to be depleted in one or two years. China has banned the export of all other species that might resemble the Bobcat.* |

**Reviewers:** G. Mowatt, C. Neilsen, K. Nowell, J. Ray, TRAFFIC North America.

## Transfer of the Lion *Panthera leo* from Appendix II to Appendix I. Proponent: Kenya.

**Summary**: The Lion *Panthera leo* occurs in sub-Saharan Africa and Asia. The Asiatic subspecies *Panthera leo persica* is included in CITES Appendix I while the African population is included in Appendix II under the general listing of the family Felidae. The Lion population in Africa has undoubtedly decreased in the past three decades, although the scale of this decrease is far from clear. A very general "guesstimate" of 200 000 animals was made for the continent-wide population in 1975; another estimate, based on expert judgement and modelled habitat availability, was of ca 76 000 in 1980. In the mid-1990s, a general estimate of 30 000 to 100 000 was made. A 2002 figure, based on estimates for some 144 populations and further extrapolation, was of 39 000 Lions (range 29 000 to 47 000) while a 2004 incomplete estimate of 100 known populations was of 16 500 to 30 000. Each of these has used different methodologies and it is certainly likely that the 1975 figure over-estimated the population. The recent IUCN re-evaluation of Lion status has proposed a classification of Vulnerable for the global population on the basis of a decline of between 30% and 50% over three generations, with a regional assessment of Endangered for the West African regional population. Causes of decline during the 1990s included increasing pressure from human settlement and habitat loss, with loss of human life and livestock depredation resulting in Lion persecution. East and southern Africa are now home to the majority of the continent's Lions. Over 50% of current Lion habitat is included within protected areas, Lions are becoming rare outside protected areas.

Reported international trade in the African Lion is composed mainly of hunting trophies and skins. The majority of exports are reported from the southern African countries of Namibia, South Africa, Tanzania, Zambia and Zimbabwe. In these areas, trophy hunting is seen as a means of providing economic incentives to conserve wild areas and species. However, concern has been voiced about the sustainability of current rates of trophy hunting of Lions. Targeting prime males can reportedly result in a rapid turn-over of pride males that in turn reduces cub survival. Recently, Botswana instituted a moratorium on trophy hunts. In areas around Hwange National Park, Zimbabwe, quotas have been significantly reduced. Whilst new research suggests that the sustainability of trophy hunting can be increased by targeting males that have completed their reproductive period, such practices are apparently not yet widespread. The Animals Committee agreed to consider undertaking a Significant Trade Review of the species after CoP 13. Such a review would allow the basis for quota setting for Lion trophies to be investigated.

The proponent seeks to include *Panthera leo* in Appendix I in accordance with Resolution Conf 9.24, Annex 1, Criterion C i) due to an ongoing decline in the number of individuals in the wild and with Criterion Ai) and ii) for the populations of West and Central Africa, which are also small and fragmented.

**Analysis**: The African Lion still has a very wide though increasingly fragmented range. Its population is also still reasonably large. On this basis, the population as a whole does not appear to meet Criteria A or B of Annex 1 of Resolution Conf. 9.24 for inclusion in Appendix I. With regard to Criterion C, the population has undoubtedly declined markedly in the past few decades, although in the absence of reliable historical information and given the patchiness of recent data, it is difficult to say exactly how steep this decline has been. However, the best available information indicates that the decline is likely to have been 30-50% in 20 years, or somewhat less than that given in the guidelines in Resolution Conf. 9.24. These guidelines suggest as appropriate for inclusion in Appendix I a 50% decline in two generations (or ca 13 years in the case of the Lion). Inclusion of the African Lion population in Appendix I would be likely to have an effect on trophy hunting in some range States. This may in turn have an economic impact on areas where trophy hunting takes place and on the management of the species. In cases of uncertainty, Resolution Conf. 9.24 Annex 4 recommends Parties to act in the best interests of the conservation of the species.

| **Information provided and statements made by proponents in the Supporting Statement** | **Comments, observations and additional information provided in the review process** |
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**Taxonomy**

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Range** | |
| Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African republic, Chad, Congo, Cote d'Ivoire, Democratic Republic of Congo, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Guinea-Bissau?, Kenya, Lesotho, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda?, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe. | |
| **IUCN Global Category** | |
| VU C2a(i). | *Proposed re-evaluation: VU 2abcd (IUCN, in prep.).*<br>*Proposed category for isolated West African regional population EN C2ai (IUCN,* in prep.*).* |

## Biological criteria for inclusion in Appendix I

**A) Small wild population**

**(i) Population or habitat decline; (ii) small subpopulations; (iii) one subpopulation; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour**

| | |
|---|---|
| A review of available information published in 1994 provided a pan-Africa estimate of 23 000 Lions (range 16 500-30 000). The available information suggests that 43% of the population is now concentrated in four sub-populations within three range States and that populations in 45% of locations contain 70 or fewer animals. Minimum Viable Population (MVP) sizes are not available. | *Myers (1975) provided a guesstimate of 200 000 African Lions at that time. Using a GIS-based model calibrated by Lion experts and taking account of factors that are known to reduce Lion populations, Ferreras and Cousins (1996) estimated the size of the African Lion population to be 75 800 in 1980. In the early 1990s, another general estimate of 30 000 to 100 000 was presented (Nowell and Jackson, 1996). In 2002 estimates for 144 Lion populations together with extrapolations for areas where Lion status was unknown were compiled to provide a pan-African estimate of 39 000 Lions (range 29 000 to 47 000) (Chardonnet, 2002). Another study published in 2004 collected numbers of 100 Lion populations compiled from questionnaires and provided an incomplete estimate of 16 500 to 30 000 Lions (Bauer and Van der Merwe, 2004). The 2004 study was not fully comprehensive as populations for which numbers were not known at all were excluded from the total. Of the populations for which estimates were included, 30% of the estimates were based on scientific surveys and the remaining 70% were based on expert opinion or guesstimate (Bauer and Van der Merwe, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **B) Restricted area of distribution**<br>**(i) Fragmented or localised population; (ii) large fluctuations in distribution or subpopulations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| The size of the current geographic range is approximately 7.18 million km$^2$, but Lions are increasingly rare outside protected areas. Populations are fragmented, particularly in West Africa. | *Habitat for Lions is suspected to have declined over the past two decades. Chardonnet (2002) estimates current Lion range at approximately three million km$^2$, with about half this area having some form of protected status. The highest rate of habitat decline is described from West Africa (39%), with lower rates for Central (18%), Southern (16%), and East (9%) Africa (Chardonnet, 2002).*<br>*Bauer and Van der Merwe (2004) indicate that populations are small and fragmented in West and Central Africa but that the species still occurs widely in East and Southern Africa.* |
| **C) Decline in number of wild individuals**<br>**(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| In 1996 an educated guess put the African Lion population at 30 000 to 100 000. In 2004 the population was estimated to be 16 500 to 30 000 Lions Africa-wide. Recognising that the 1996 and 2004 population estimates are not directly comparable, the proponent comments that the population estimates suggest a 45-70% decline.<br>Six examples of areas where Lion numbers are estimated to have decreased are presented in the Supporting Statement. | *The 1996 estimate appears to have been based on inputs from 1991 and was at best a "guesstimate". The 2004 estimate excluded a number of populations. Despite the use of different methodologies, it is clear that Lion numbers in Africa have declined, but the extent of decline is less clear. In re-assesing the Red List status of the African Lion, the IUCN SSC Cat Specialist Group have concluded that it is likely that previous population estimates were too high, and that a decline of over 30%, but less than 50% over two decades, or three generations, is likely to be more accurate, with most Lions being lost from West and Central Africa (IUCN,* in prep., *2004).*<br>*A case study from Etosha National Park suggests that Lion numbers may fluctuate over time, in response to climatic conditions (Berry, 2003).* |
| **Trade criteria for inclusion in Appendix I**<br>**The species is or may be affected by trade** | |
| The most frequent items in international trade are trophies, skulls and skins, according to CITES Annual Report data.<br>The population estimates suggest a 45-70% decline. Trophy exports have only declined by 15.7% compared with the much higher estimated population declines. The proponent suggests this indicates that trophy hunting may be having a much greater impact today than in 1996.<br>Nationally, Lion parts, particularly bone and fat, are used in traditional medicines and Lion parts are also used for other traditional practices in Africa. | *Trophy hunting for Lions is allowed in 40% of range States (13 out of 32). Analysis of CITES reported trade indicates that between 1993-2002, Zimbabwe, Tanzania and South Africa each exported on average over 100 Lion trophies per year during the ten-year period. Botswana, Cameroon, Mozambique, Namibia and Zambia exported on average over ten trophies per year each, and 12 other range States exported on average fewer than ten per year each. Noting that population data presented in Bauer and van der Merwe (2004) are far from complete, a comparison of annual reported trophy exports over the last ten years (taken from the proposal) with minimum estimates of population size indicate the following rate of harvest for international trophies in selected countries: Burkina Faso 9%; Botswana 1%; Tanzania 3.6%; South Africa 4.6%; Zambia 3.1%; Zimbabwe 12.4%. A precautionary level of harvest is thought to be* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| | *around 4%, but this will vary depending on local factors. Tanzania, South Africa, Zimbabwe and others use revenues derived from trophy hunting to directly support conservation and to build local support for Lion conservation (Frank, 2004; Hutton, 2004; Nowell, 2004; Packer, 2004).*<br>*Researchers in some of the main trophy hunting countries have expressed concern that hunting might have been unsustainable in some areas (MacDonald, cited in Nolin, 2003). Concern was expressed that quotas could be unsustainable in the Selous (Tanzania) if filled, but no evidence has been provided that they had been filled (Creel and Creel, 1997).*<br>*Botswana imposed a moratorium on Lion hunting in 2002 and the quota outside Hwange National Park in Zimbabwe was significantly reduced. These restrictions have been used to support the argument that trophy hunting is unsustainable. However, reviewers believe that trophy hunting is a lesser threat to Lion populations than human conflict with Lions (Frank, 2004; Packer, 2004). In addition Whitman* et al.*, (2004) have used modelling to demonstrate that if trophy hunting is limited to the removal of older males then the rate of reproduction will not be harmed.*<br>*Nowell (2004) calculates from the proposal that an annual average of 919 skulls, skins, and trophies were reported as exports during a four-year period from 1999-2002. Using Chardonnet's (2002) minimum estimate of hunting areas within Lion range as 410 462 km$^2$, Nowell calculates that dividing recent annual exports by this range results in an offtake of approximately 0.45 Lions per 1 000 km$^2$. She cites Whitman* et al., *(2004) who suggested that a level of three male Lions per 1 000 km$^2$ could be a guideline for a sustainable hunting quota in Tanzania, and concludes "this rough calculation does not set off alarms that current trophy hunting levels threaten the Lion population, although the sustainable offtake would be lower in parts of Africa where Lion densities are lower".*<br>*A comparison of the Lion population numbers compiled by Bauer and van der Merwe (2004), which were incomplete, with annual average net trophy export numbers from 1992 – 2003 indicates that the percentage offtake for trophies is highest in southern and eastern Africa. The West African minimum population size equals 805 Lions with ten trophies exported annually (*i.e. *ca one trophy per 80 Lions); the Central African minimum population equals 950 Lions with 18 trophies exported annually ca. one trophy per 50 Lions); the East African minimum population equals 11 112 Lions with 262 trophies exported annually (ca 1 trophy per 40 Lions); the Southern African minimum population equals 9 836 Lions with 352 trophies exported annually (ca one trophy per 30 Lions).* |

**Other information**

**Threats**

| | |
|---|---|
| Human–Lion conflict resulting in Lion persecution; | *Reviewers concur that the major threat to Lion* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| political instability; reduction in prey base; disease; and unsustainable trophy hunting quotas. | *populations is conflict with human populations (Chardonnet, 2004; Des Clers, 2004; Frank, 2004; Hutton, 2004; Nowell, 2004; Packer, 2004).*<br><br>*Disease outbreaks during the 1990s do not appear to have had lasting effects on population numbers (Frank, 2004; Packer, 2004; Government of South Africa's comments on the proposal).* |
| **Conservation, management and legislation** | |
| According to information from Nowell and Jackson (1996), the species has no legal protection in six range States; hunting is prohibited in ten range States, and regulated or restricted to problem animals in a further 18 range States, of these, three allow trophy hunting. In addition both Namibia and South Africa also allow trophy hunting. Botswana instituted a moratorium on trophy hunting from 2001-2005.<br><br>With regard to population monitoring, according to Bauer and Van der Merwe (2004), regionally the following proportions of extant populations do not appear to be the subject of regular monitoring: West and Central Africa, 18 out of 21 populations not monitored; East Africa, 16 out of 27 populations not surveyed recently; Southern Africa, 21 out of 41 populations not surveyed recently.<br><br>With regard to assessing the impact of trophy hunting, the largest populations in South Africa and Zimbabwe appear to be monitored; but the lack of recent monitoring of the Selous population in Tanzania is of concern. | *Lions are protected in South Africa, but the degree varies between the Provinces. Each Province has its own provincial nature conservation ordinance and there are slight differences in the terminology used. Permits are required to hunt, shoot, trade in, keep, donate, and sell Lions in all provinces. In South Africa provincial nature conservation bodies are responsible for administration of the sport hunting industry. However harvest levels are effectively set by landowners, on the basis that it is in their interest to ensure that use is sustainable (TRAFFIC East/Southern Africa, 2004).*<br><br>*Botswana has imposed a moratorium on trophy hunting in 2001, but the basis for this is not clear.*<br><br>*In Namibia, the Ministry of Environment and Tourism retains ownership of wildlife and establishes quotas on the basis of population survey, monitoring data and questionnaires (TRAFFIC East/Southern Africa, 2004).*<br><br>*In Tanzania, quotas are set by the Wildlife Division of the Ministry of Natural Resources and Tourism. Quotas for hunting blocs are based on, for example, data available on size of area, habitat type, hunting offtake in previous years and estimates of species density (TRAFFIC East/Southern Africa, 2004). Baldus and Cauldwell (in prep.) report that the Wildlife Division is developing new management procedures for Lion hunting. From 2004 onwards it is planned that only Lions six years or older may be hunted.*<br><br>*In Zimbabwe responsibility for quota setting is being gradually devolved from the Department of National Parks and Wildlife Management (DNPWLM) to land holders and community associations, but the DNPWLM still establishes quotas for the State-owned safari areas. Quota setting relies on ground surveillance, expert knowledge and adaptive management. Lion quotas are reportedly set at 8% of the population (TRAFFIC East/Southern Africa, 2004).* |
| **Similar species** | |
| The Asiatic Lion *Panthera leo persica* is already included in Appendix I. | |
| **Captive breeding** | |
| Over 1 000 animals are maintained in captivity according to records maintained by the International Species Inventory System (ISIS). South Africa has now prohibited the captive breeding of Lions for "canned" trophy hunts. | *South Africa has 800 Lions in captivity.* |
| **Other comments** | |
| Inclusion of the taxon in Appendix I would not preclude trophy hunting, as export quotas could be established by the CoP in accordance with Resolution | *In Tanzania a review of newspaper articles etc., over a 15-year period indicates that on average 50 people are reported killed annually by Lions (Baldus* et al., *2003).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| Conf. 9.21. This would provide oversight by Parties and ensure that export quotas would not be detrimental to the survival of species.<br><br>Within the two-week comment period, Kenya received three responses. Ethiopia supported the proposal. Namibia and South Africa both opposed the proposal on the grounds that Namibia's population is stable or increasing and in South Africa, much of the national populations occurs in protected areas, where hunting is prohibited. | *There is concern that inclusion in Appendix I would make trophy imports more difficult under certain domestic legislation and could impact schemes where trophy hunting is contributing to conservation (Frank, 2004; Chardonnet, 2004; des Clers, 2004; Hutton, 2004; Nowell, 2004).*<br><br>*Further information would be useful on the basis for management and quota setting in Botswana, Burkina Faso, the Central African Republic, Cameroon, South Africa, Tanzania, Zimbabwe and Zambia (Nowell, 2004).*<br><br>*The populations in West /Central Africa are in need of greater conservation support and low cost monitoring (Bauer* et al., *2001).*<br><br>*Kenya proposed the Lion be considered for review under the Significant Trade Review Process, and the Animals Committee agreed to review the basis for this request at AC 21, after CoP13 (See ENB 2004). A similar proposal was put forward by TRAFFIC and IUCN (TRAFFIC, 2004).*<br><br>*The African Lion Working Group commented that the moratorium in Botswana does not necessarily guarantee positive results for the Lion populations, as the factors affecting populations vary, and some may benefit from the bans, but others will suffer through loss of local support (ALWG 2003).* |

**Reviewers:** H. Bauer, P. Chardonnet, B. des Clers, L. Frank, J. Hutton, K. Nowell, C. Packer, TRAFFIC East/Southern Africa.

## Maintenance of the Namibian population of the African Elephant *Loxodonta africana* in Appendix II.
## Amendment of annotation °604 regarding the Namibian population of *Loxodonta africana* to include:

- **an annual export quota of 2 000 kg of raw ivory (accumulated from natural and management related mortalities);**
- **trade in worked ivory products for commercial purposes;**
- **trade in elephant leather and hair goods for commercial purposes.**

## Proponent: Namibia.

**Summary**: The Namibian population of African Elephant was transferred from Appendix I to Appendix II in 1997, subject to an annotation which was amended in 2000 and 2002. Those parts of it currently applicable to Namibia are the following:

For the exclusive purpose of allowing: 1) trade in hunting trophies for non-commercial purposes; 2) trade in live animals for *in situ* conservation programmes; 3) trade in hides; 4) trade in leather goods for non-commercial purposes; 5) trade in registered whole tusks and pieces of raw ivory subject to the following: i) only registered government-owned stocks, originating in the State (excluding seized ivory and ivory of unknown origin); ii) only to trading partners that have been verified by the Secretariat, in consultation with the Standing Committee, to have sufficient national legislation and domestic trade controls to ensure that the imported ivory will not be re-exported and will be managed in accordance with all requirements of Resolution Conf. 10.10 (Rev. CoP12) concerning domestic manufacturing and trade; iii) not before May 2004, and in any event, not before the Secretariat has verified the prospective importing countries, and the Monitoring the Illegal Killing of Elephants (MIKE) programme has reported to the Secretariat on the baseline information (e.g., elephant population numbers, incidence of illegal killing); iv) a maximum of 10 000 kg of ivory may be traded, and dispatched in a single shipment under strict supervision of the Secretariat; v) the proceeds of the trade are used exclusively for elephant conservation and community conservation and development programmes within or adjacent to the elephant range; vi) only after the Standing Committee has agreed that the above conditions have been met. On a proposal from the Secretariat, the Standing Committee can decide to cause this trade to cease partially or completely in the event of non-compliance by exporting or importing countries, or in the case of proven detrimental impacts of the trade on other elephant populations. All other specimens shall be deemed to be specimens of species included in Appendix I and the trade in them shall be regulated accordingly. The proposal entails a request for an annual quota for export of ivory and may thus be interpreted as adhering to paragraph D, Annex 4, of Resolution Conf. 9.24. There are no explicit guidelines in the Convention or in resolutions of the CoP for assessing such requests. However, as noted in the introduction to the elephant proposals, because the relevant annotation indicates that all specimens of African Elephant in Namibia other than those specified in the annotation should be treated as if they were of species in Appendix I, the terms of paragraph B 2.c) of Annex 4 of Resolution Conf. 9.24 appear to be applicable. These state that the quota must be 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. In the case of hides and leather goods, no quota is proposed, so that the precautionary measures in paragraph B.2.b) appear to be applicable (the Conference of the Parties must be satisfied with the implementation of the requirements of the Convention, in particular Article IV, and be satisfied that appropriate enforcement controls are in place).

**Analysis**: The supporting statement reports that the ivory intended to be exported under the proposal is that recovered from natural mortalities and management activities. From the figures provided in the supporting statement, it appears that the proposed annual quota exceeds current actual recovery by around 1 000 kg per year. Compliance with the precautionary undertakings referred to in Decision 10.1, Part A paragraph h) was verified by the CITES Secretariat in April 1999, allowing a one-off export of an experimental quota of ivory under the terms of annotation °604. No country of import is named for the requested ivory quota. The CITES Secretariat verified internal controls in Japan in July 1999 for the purposes of allowing a one-off sale of an experimental quota of ivory. As of July 2004, the one-off sale of ivory approved at CoP12 had yet to take place as no country had yet to be approved; the CITES Secretariat indicated in a document submitted to the 50th meeting of the CITES Standing Committee that Japan did not meet all of the requirements in Resolution Conf. 10.10 (Rev. CoP12) regarding control of internal ivory trade.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Range** | |
| Namibia. | |
| **IUCN Global Category** | |
| | *African Elephant* Loxodonta africana *is currently classified as Endangered (EN A1b) (Assessed 1996). It will be classified as Vulnerable in the 2004 IUCN Red List.* |
| **Management measures** | |
| Raw ivory: Only ivory recovered from recorded natural mortalities as well as that obtained from management related practices will be exported. There is a current accumulation of 37 804 kg of whole tusks (5 976 kg from natural mortality/management sources, 30 521 kg from seizures and 1 112 kg of unknown source) and 1 534 kg of ivory pieces. There is an expected annual accumulation, based on a mean tusk weight of 5 kg of ca. 100-500 kg per 1000 elephants in the standing population and an actual accumulation from natural mortalities and management related practices of 1 400-7 200 kg, based on a more recent mean tusk weight of 6.5 kg and an estimated population of 11 000 animals. Current actual annual recovery is around 900 kg but this may vary greatly between years.<br><br>Hide and related products: The only hide currently collected is from trophy animals, when sport hunters wish to export hide. The recovery of hides from problem animals will be pursued in future. The number of hides collected in this respect would average less than 30 per year.<br><br>Ivory carvings: There is a desire to develop a domestic ivory carving industry based on traditional carved ivory objects called 'ekipas'. Some of the beneficiaries of the trade are intended to be local communities within conservancies. | *Subtotal for ivory stocks originating from natural mortality and management given in the table on page size (English version) is in error: the true figure should be 7 745.28 kg not 6 852.83 kg.*<br><br>*Different mean tusk weights are used in different estimations, leading to some confusion.*<br><br>*The time scale over which the current stockpile has been accumulated is not clear.* |
| **Enforcement measures within proposed country of export** | |
| Details of control measures for raw ivory that would be exported under quota are set out in the Supporting Statement.<br><br>A national report form on illegal killing of elephants in Namibia is attached as an annex to the Supporting Statement.<br><br>Regarding ivory carvings, each item will be marked and identifiable through a unique numbering system and a minimum size will be prescribed for items to be exported.<br><br>Regarding hides, leather and elephant hair goods, persons or companies wishing to manufacture or trade elephant hide, hair or leather goods have to be registered with the Management Authority and are required to maintain comprehensive records of origin of stocks, manufacturing and trade. | *The control system for worked ivory as envisaged by this proposal was not in existence at the time of the Panel of Experts' assessment of the proposal by Namibia to transfer its elephants to Appendix II made prior to CoP10 in 1997. Limiting the item to be produced to a single easily recognisable cultural product not normally found outside Namibia is a control measure in and of itself (TRAFFIC East/Southern Africa, 2004).*<br><br>*Regarding manufacture and trade in elephant hide, hair and leather goods, there are currently (July 2004) no companies or individuals registered for trade in leather or hair products (TRAFFIC East/Southern Africa, 2004).* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Enforcement measures**<br>**within potential countries of import** | |
| Namibia will only trade with countries that have been verified by the CITES Secretariat to have sufficient national legislation and domestic trade controls to ensure that ivory imported from Namibia will not be re-exported and will be managed according to all requirements of Resolution Conf. 10.10 (Rev. CoP12) concerning domestic manufacturing and trade. | *No countries of import are specified.* |

**Reviewers:** TRAFFIC East/Southern Africa.

## Maintenance of the South African population of *Loxodonta africana* in Appendix II. Amendment of annotation °604 regarding the South African population of *Loxodonta africana* to allow commercial trade in leather goods.

*Proponent: South Africa*

**Summary**: The South African population of African Elephant was transferred from Appendix I to Appendix II in 2000, subject to an annotation that was revised in 2002. Those parts of it relevant to South Africa are the following:

For the exclusive purpose of allowing: 1) trade in hunting trophies for non-commercial purposes; 2) trade in live animals for *in situ* conservation programmes; 3) trade in hides; 4) trade in leather goods for non-commercial purposes; 5) trade in registered tusks and cut pieces of raw ivory that are both 20 cm or more in length and one kg or more in weight subject to the following: i) only registered government-owned stocks, originating fom the Kruger National Park (excluding seized ivory and ivory of unknown origin); ii) only to trading partners that have been verified by the Secretariat, in consultation with the Standing Committee, to have sufficient national legislation and domestic trade controls to ensure that the imported ivory will not be re-exported and will be managed in accordance with all requirements of Resolution Conf. 10.10 (Rev. CoP12) concerning domestic manufacturing and trade; iii) not before May 2004, and in any event, not before the Secretariat has verified the prospective importing countries, and the Monitoring the Illegal Killing of Elephants (MIKE) programme has reported to the Secretariat on the baseline information (e.g. elephant population numbers, incidence of illegal killing); iv) a maximum of 30 000 kg of ivory may be traded, and despatched in a single shipment under strict supervision of the Secretariat; v) the proceeds of the trade are used exclusively for elephant conservation and community conservation and development programmes within or adjacent to the elephant range; vi) only after the Standing Committee has agreed that the above conditions have been met. On a proposal from the Secretariat, the Standing Committee can decide to cause this trade to cease partially or completely in the event of non-compliance by exporting or importing countries, or in the case of proven detrimental impacts of the trade on other elephant populations. All other specimens shall be deemed to be specimens of species included in Appendix I, and the trade in them shall be regulated accordingly.

The proposal is to allow commercial trade in leather goods. As noted in the supporting statement, such trade was permitted under the original relevant annotation (i.e., that applying to South Africa for the period 2000 to 2002) which referred to “trade in hides and leather goods”. Some 600 such items are recorded as exported by South Africa in CITES trade data for that period.

**Analysis**: As noted in the supporting statement, the change in reference in the annotation from “trade in hides and leather goods” to “trade in hides” and “trade in leather goods for non-commercial purposes” made at CoP12 appears to have been an error. There is no evidence that trade in leather goods has any impact on South African elephant populations.

| **Information provided and statements made by proponents in the Supporting Statement** | **Comments, observations and additional information provided in the review process** |
|---|---|
| **Range** | |
| South Africa | |
| **IUCN Global Category** | |
| | *African Elephant* Loxodonta africana *is classified as Endangered (EN A1b) (Assessed 1996). It will be classified as Vulnerable in the 2004 Red List.* |
| **Discussion** | |
| Hide and related products: South African National Parks currently has a stockpile of ca 50 000 kg of elephant hides, mostly accumulated during past population control exercises and from animals that have died of natural causes. During 2001-2002, following CoP11, 50 000 kg of elephant hide from the Kruger Park stockpile were sold by tender. A further 50 000 kg were sold in 2002-2003; however | *CITES trade data record export of just over 600 items classified as leather products from South Africa for the years 1999-2002.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| commercial export of goods made from this leather was not permitted in 2003, following the amendment to the annotation for *Loxodonta africana* agreed in 2002 at CoP12. | |

**Reviewers:** TRAFFIC East/Southern Africa.

## Transfer of the Swaziland population of the Southern White Rhinoceros *Ceratotherium simum simum* from Appendix I to Appendix II for the exclusive purpose of allowing international trade in the following:

**a) Live animals to appropriate and acceptable destinations**
**b) hunting trophies**

## Proponent: Swaziland.

**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 survives only in Garamba National Park, Democratic Republic of Congo, where the population was estimated as around 22 in June 2004. The Southern White Rhinoceros currently numbers around 11 000 wild individuals, 93% of which occur in South Africa. There are introduced or reintroduced populations in Botswana, Kenya, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe and over 700 individuals in captivity around the world. The subspecies is currently classified as Near Threatened by IUCN. The Swaziland population has oscillated between 27 and 90 individuals in the past 20 years and currently stands at around 60. 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 under 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."
Swaziland proposes to transfer its population of Southern White Rhinoceros to Appendix II under the same conditions.

**Analysis**: If considered in isolation, the Swaziland population of Southern White Rhinoceros is clearly very small with a restricted and localised distribution. Although it is reportedly well protected and not currently decreasing in size, it could still be argued to meet the criteria for inclusion in Appendix I. The population may also be considered part of a larger southern African metapopulation, and in particular as essentially contiguous with the South African population, already included in Appendix II under the annotation above. This overall population is not small, nor does it have a restricted area of distribution, nor is it known or projected to be declining in numbers. This larger population does not appear to meet the criteria for inclusion in Appendix I. With regard to the precautionary measures set out in Annex 4 B of Resolution Conf. 9.24, the CoP must be satisfied with enforcement controls and compliance with the requirements of the Convention. At the time of writing, Swaziland was in Category 3 of the CITES National Legislation Project, indicating that its legislation was believed generally not to meet the requirements for the implementation of the Convention. Regarding enforcement controls, the proposed annotation severely restricts the context in which the Appendix-II listing would apply and the proponents state that Swaziland will permanently mark all specimens traded. Enforcement of existing wildlife law in the country is reported to be generally good and the country is currently revising its rhino horn stockpile management system.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | **Taxonomy** |
| | **Range** |
| Swaziland. | C. s. cottoni *occurs in South Africa and as introduced or reintroduced populations in Botswana, Kenya (out of range), Mozambique, Namibia, Swaziland, Zambia (out of range) and Zimbabwe.* |
| | **IUCN Global Category** |
| | *The subspecies is classified as Near Threatened (Assessed 2003). (IUCN Red List, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| The Swaziland population numbered 61 in 2003 and 60 in 1984; numbers have ranged from 27 to 90 in intervening years. | *The Swaziland population of White Rhino can be considered part of a southern African metapopulation of which the great majority are found in South Africa. The population as a whole comprises one large free-ranging population in Kruger National Park and a large number of small and usually heavily managed populations scattered through the region (Emslie, 2004).*<br><br>*The overall population of the subspecies is estimated at 11 090 wild animals and 737 captive animals in 2004; this shows a small decrease from the 2001 estimate (11 640), owing to a revised estimate for the population in Kruger National Park, South Africa, which holds ca. 40% of the total population. The revision is believed to be a result of sampling variability, and there is no evidence of any decline in this population. Populations outside Kruger have increased by ca. 10% in this period (Emslie, 2004).* |
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| The species occurs in two game reserves in eastern Swaziland, totalling some 33 000 ha; only 10 000 ha of this is fenced and available to the species as secure range. | *If the Swaziland population is considered as part of a larger metapopulation, then this latter has a wide area of distribution, which has been increasing in extent for decades (Emslie 2004).* |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| The Swaziland population suffered a decline during the period 1988-1992, but has been increasing or stable since then. | |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| The species is in trade. | *Some demand is known to exist in South Africa for live rhinos from Swaziland (TRAFFIC East/Southern Africa, 2004).* |
| **Precautionary Measures** | |
| **B2a: CoP satisfied that its transfer to Appendix II will not cause enforcement problems for other species included in Appendix I** | |
| | *Experience from South Africa shows that a transfer should not result in enforcement problems for other species or populations in other countries as legal international trade in the species does not involve horn for commercial purposes (TRAFFIC East/Southern Africa 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **B2b: CoP satisfied with appropriate enforcement controls and compliance with the requirements of the Convention** | |
| A strictly applied permit system already exists and control of translocations and trophy hunting will continue to be strictly enforced. Swaziland will permanently mark all traded individuals and legally hunted trophies. | *Swaziland is currently (July 2004) in Category 3 of the National Legislation Project, indicating that legislation in the country is believed generally not to meet the requirements for the implementation of CITES.*<br><br>*Enforcement of existing wildlife laws in Swaziland is generally good and penalties for infringement are tough (Emslie, 2004).*<br><br>*Swaziland is currently revising its rhino horn stockpile management system, following best practices from the rest of East and Southern Africa (TRAFFIC East/Southern Africa, 2004).* |
| **Other information** | |
| **Threats** | |
| There was considerable poaching of rhinos in Swaziland in the period 1988-1992, but no poaching has been recorded since December 1992. Two cases of illegal possession/traffic of rhino horns have been recorded since 2000. | |
| **Conservation, management and legislation** | |
| All rhinos in Swaziland occur in protected areas. Rhinos are listed as "Specially Protected Species" under the *Game Act*, with stringent penalties for illegal hunting and possession of rhinos and trafficking in rhino products. | |
| **Similar species** | |
| The extremely similar Northern White Rhinoceros *Ceratotherium simum cottoni* survives as a single population in the Democratic Republic of Congo. | |
| **Captive breeding** | |
| | *Latest figures indicate 737 individuals of the subspecies are held in captivity; captive breeding takes place regularly (Emslie, 2004).* |
| **Other comments** | |
| The supporting statement notes that the intent of the proposal is to allow Swaziland to dispose of surplus animals through trade in live animals and trophy hunting where appropriate. It observes that all White Rhinos in Swaziland are in closed systems and states that population management in such systems is vital. | *Emslie (*2004*) notes that allowing Swaziland to sell surplus animals will help ensure that carrying capacities of fenced sanctuaries are not overshot, and revenue will be generated to help fund conservation by Big Game Parks (the company that manages Swaziland's protected areas). He believes that transfer of the population to Appendix II might stimulate others in the private sector to seek to conserve this subspecies and if so would increase the range in the Kingdom. He further observes that since the South African population was transferred to Appendix II in 1994, the population in that country is estimated to have increased by over 50%, indicating that the transfer has not had a deleterious impact on the population. Brett (2004) concurs, but notes that the potential conservation benefit of permitting sale of live White Rhinos will depend on cooperative links with rhino management authorities and potential buyers in South Africa.*<br><br>*Experience from South Africa indicates that a transfer* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | *to Appendix II under the proposed annotation is likely to result in an increase in the White Rhino population in Swaziland (TRAFFIC East/Southern Africa, 2004).* |

**Reviewers**: R. Brett, R. Emslie, TRAFFIC East/Southern Africa.

## Transfer of the Bald Eagle *Haliaeetus leucocephalus* from Appendix I to Appendix II. Proponent: United States of America.

**Summary**: The Bald Eagle *Haliaeetus leucocephalus* occurs in North America, breeding in Canada, USA, Mexico and the French island territories of Saint Pierre and Miquelon. Although it has undergone a severe population decline in the past owing to unintentional poisoning with DDT, hunting and habitat destruction and degradation, the severity of these threats has diminished and populations have recovered from perhaps a few thousand in the 1960s to in excess of 70 000 individuals. The species will be classified as Least Concern in the 2004 IUCN Red List, has been proposed for removal from the US *Endangered Species Act* and is considered to be "Not at Risk Nationally" in Canada. In the USA, over 100 Habitat Conservation Plans have been established for the species, and several federal laws provide further protection. Although the Bald Eagle is currently included in CITES Appendix I, Native Americans are afforded the right to take and transport the species and its products under a permit system. Some 50 such shipments pass through US ports on average each year, the majority comprising feathers. There is also what appears to be a small international demand for Native American artifacts and other items incorporating eagle feathers. The proponent does not expect the impacts of international trade to be detrimental to the species following a transfer to CITES Appendix II, and therefore seeks to transfer *H. leucocephalus* from Appendix I to Appendix II in accordance with Resolution Conf. 9.24, Annex 4 criteria B2b.

**Analysis**: *H. leucocephalus* does not appear to meet the biological criteria for inclusion in Appendix I, given its large and increasing population (>70 000) and large range (widespread in North America). However, it is not completely clear from the proposal or the supporting statement how the precautionary measures outlined in Annex 4 of Resolution Conf. 9.24 will be fulfilled. There appears to be demand for international trade, this trade at present appearing to involve small quantities and be primarily for ceremonial rather than primarily commercial purposes. No quota is requested, nor has a ranching proposal been submitted. Therefore the Parties must satisfy themselves that all range States are implementing the Convention and in particular Article IV with regard to this species, and be satisfied that enforcement controls and compliance with the requirements of the Convention are adequate.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| Synonym: *Falco leucocephalus.* | |
| **Range** | |
| Canada, USA, Mexico, St. Pierre and Miquelon (France). Vagrant in Belize, Bermuda (UK), Ireland, Puerto Rico (USA) and Virgin Islands (USA). | |
| **IUCN Global Category** | |
| | *Least Concern (BirdLife International, 2004).* |
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| Populations in continental USA declined from an estimated 250 000 to 1 000 from the late 1700s to the 1960s, owing to intense hunting, unintentional poisonings (notably use of DDT and lead shot), and habitat destruction in combination with the loss of great herds of bison, a seasonally important food source. Over the last 30 years, the US population has effectively doubled every seven to eight years (USFWS, 1999); similar trends were also observed for other North American countries. The total population | *In Mexico, only "a scattering of pairs" was reported on both the Pacific and Gulf sides of Baja California by Friedmann* et al., *(1950). Wilber (1986) described the species as "formerly a sparse resident along both coasts" but "in recent years, all but two records have been from the Magdalena area, where the species is a sparse resident." More recently, it is recorded as "a rare resident in south Baja California and east Sonora" by Ferguson-Lees and Christie (2001).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| was estimated at 70 000 in 1991 (Blood and Anweiler, 1991; Kirk *et al*., 1995). Populations in Mexico are difficult to assess (del Hoyo *et al*., 1994) but are believed to be relatively low and somewhat fragmented. | |
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| The species is limited to North America and breeds in Canada, USA, Mexico, and the French island territories of Saint Pierre and Miquelon. It is considered a vagrant in Belize, Bermuda, Ireland, Puerto Rico, and the US Virgin Islands.<br>It is predominantly, but not exclusively, associated with water, typically inhabiting a variety of forested ecosystems. It will, however, also inhabit arid sagebrush steppe, prairie, and desert environs if enough food can be found. The development of artificial reservoirs in the last 50 years has provided new breeding habitats in some areas (e.g. the southeastern USA), but has resulted in significant habitat loss in the southwestern portion of its range, where riparian forests provide the most suitable environments. Despite these limitations, the US Fish and Wildlife Service believe that there is sufficient habitat for existing populations to expand beyond their current levels. | H. leucocephalus *does not have a restricted distribution.* |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| In 1994, there were approximately 4 450 breeding areas (apparently roughly equivalent to pairs) in the 48 continental US states that produced an average of 1.16 young per nest. Considering that the rate of reproduction necessary to ensure sustainability is 0.7 young per nest per year (Sprunt *et al*., 1973), it is evident that eagle populations are growing. Statistics from 1994 represent a 462% increase over 1974 estimates. Four years later (1998), there were 5 748 breeding areas, with all but two states supporting nesting pairs. More recent results from the Pacific region of the USA indicate a reproductive rate averaging 1.0 young per pair annually (USFWS, 1999).<br>In Canada, there are ten times as many wintering Bald Eagles in coastal British Columbia as during the 1960s and the species is increasing by 7.98% annually. In Mexico, there are no population estimates but the situation is believed to be less robust. | *Fergusson and Lees (2001) note that while the species remains common in its northern range, and even locally abundant there, and despite it being locally common in Florida during the breeding season, over much of its range and especially in the lower US states it is at best scarce. They also note that the southernmost populations are probably particularly threatened, the more so since they are for the most part broken up into widely scattered pairs.* |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| Bald Eagle parts are used for ceremonial purposes by Native Americans residing in Canada, the USA and Mexico. The demand for eagle corpses and parts is met in part through the National Eagle and Wildlife Property Repository, operated by the US Fish and | *The majority of the trade is between the USA and Canada.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| Wildlife Service (USFWS), which fills between 1 300 and 1 500 requests for these specimens annually, mainly for Golden rather than Bald Eagles.<br><br>An average of 52 shipments of Bald Eagles or their parts pass through US ports every year. Between 1997 and 5 October 2003, 81% of the 397 shipments were feathers and about 7% were claws and feet, believed to be primarily for ceremonial use.<br><br>Although accurate data on illicit international trade is not easy to acquire, three "indices" that can be used to gauge its intensity are: (1) Between 1997 and 5 October 2003, an average of nine shipments were seized or abandoned every year (USFWS-LE records); (2) Between 1985 and 2002, an annual average of about three shipments were deemed "illegal" (CITES Annual Report Data); (3) The USFWS-LE enforces the Bald and Golden Eagle Protection Act and maintains records on violations. An average of 179 such violations is investigated annually. However not all involve international trade, some concern only Golden Eagles, and the number of cases is not a precise indicator of the volume of birds affected. | *CITES Annual Report data indicate the following trade for 1997-2002:*<br><br>*USA: 534 items exported of which 85% were feathers, 2 169 imported of which 88% were feathers.*<br><br>*Canada: 2 176 items were exported (excluding 3 290 "specimens (ml)" exported to Chile in 2001) of which 84% were feathers.*<br><br>*Mexico: three items exported, all feathers; four live birds imported from Canada.*<br><br>*Poaching for illegal trade (domestic and international) has been reported, and a foreign market for items made from eagle feathers identified (USFWS, 1996).* |

**Precautionary Measures**

**B2b: CoP satisfied with: i) and ii), Annex 4, Res Conf 9.24**

| | |
|---|---|
| Impacts from trade are not expected to be detrimental to Bald Eagle populations following the transfer from CITES Appendix I to Appendix II. This is based in part on the fact that most eagle products are used by Native American tribes for ceremonial purposes and not for commercial trade, and are collected from eagle corpses. | *Nothing has been specified with respect to Precautionary Measures. Commercial demand, including for ceremonial items, has led to poaching of Bald Eagles in the USA.* |

**Other information**

**Threats**

| | |
|---|---|
| One major cause of mortality is collision with man-made structures and electrocution from power lines. Human disturbance is another factor during the breeding season when nest abandonment (or relocation) can compromise that season's reproductive success (Buehler, 2000). | *Threats also include persecution, including shooting and poisoning (e.g., 17 Bald Eagles were recently found poisoned in Oregon) (McOmie, 2004), and potentially, use for falconry and display.* |

**Conservation, management and legislation**

| | |
|---|---|
| In the USA, the Bald Eagle is protected by several federal laws, including the *Bald and Golden Eagle Protection Act* of 1940, the *Lacey Act,* the *Migratory Bird Treaty Act*, and the *Endangered Species Act* of 1973. Collectively, these laws prohibit taking, harassing, harming, pursuing, hunting, shooting, poisoning, wounding, killing, trapping, capturing, collecting, possessing, selling, purchasing, bartering, exporting or importing between states or countries eagles or eagle products without appropriate permits. | *In Canada, Bald Eagles were considered "Endangered" at the national level from 1978 to 1984, when COSEWIC (Canada's national assessment body, the Committee on the Status of Endangered Wildlife in Canada) changed the designation to "Not at Risk Nationally". The more recent designation recognized the flourishing populations of eagles along Canada's west coast and in the northern boreal forests (Schultz, 2004).* |
| The status of the Bald Eagle under *the Endangered Species Act* has changed from "endangered" in 1978 to "threatened" in 1995. In 1999, the US Fish and Wildlife Service proposed that the species be removed from the *Act*, although this action has not | *At the provincial level, Ontario continues to designate Bald Eagles as "Endangered" and protects the birds and their nest sites under the provincial* Endangered Species Act*, proclaimed in 1973. Currently, the province is reviewing this status in response to recent improvements in the* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| been completed. As of April 2004, there are 119 Habitat Conservation Plans established under the *Endangered Species Act* for the Bald Eagle. Additionally, many US states have listed the Bald Eagle under their own laws and regulations that limit capture and transport.<br>Internationally, in addition to CITES, the Bald Eagle is protected by bilateral migratory bird treaties between the USA and Canada and between the USA and Mexico.<br>Most uses of DDT were banned in Canada in 1969, in the USA in 1972, and in France in 1987. Since 1997, Mexico has severely restricted the use of DDT and intends to phase it out completely by 2007. The use of lead shot was banned for waterfowl hunting in the USA in 1991 and in Canada in 1999. | *Great Lakes population and the presence of apparently healthy populations on inland lakes (Schultz, 2004).* |
| **Similar species** | |
| On the North American continent, only the Golden Eagle *Aquila chrysaetos* can be confused with a juvenile Bald Eagle. Other species that might also be confused include White-tailed Sea-eagle *H. albicilla*, White-bellied Sea-eagle *H. leucogaster* and African Fish Eagle *H. vocifer* (all are listed in CITES Appendix II). | |
| **Captive breeding** | |
| Bald Eagles reproduce fairly well in captivity. There are currently no captive populations maintained primarily for commercial production purposes.<br>Worldwide, the Bald Eagle is most commonly used for educational and display purposes in zoos, aviaries, raptor centers and similar facilities (ca. 340 individuals in 150 institutions in total in 2003 according to information maintained by the International Species Information System (ISIS). | *ISIS data only reflect input from participating institutions and therefore may under-reflect the total captive population of this species.* |
| **Other comments** | |
| All other range states (Canada, France and Mexico) responded favorably to this proposal. | *According to Stansell (2004), who noted that trade was largely non-commercial, "international demand for Native American artefacts made with eagle feathers for speciality collectors and as curios…would still be controlled under an Appendix-II listing".* |

**Reviewer:** C. Schultz, TRAFFIC North America.

## Transfer of the Yellow-crested Cockatoo *Cacatua sulphurea* from Appendix II to Appendix I. Proponent: Indonesia.

**Summary**: The Yellow-crested Cockatoo *Cacatua sulphurea* is virtually endemic to "Wallacea" in the central archipelago of Indonesia, also occurring in Timor-Leste, and inhabiting a variety of forest, scrub and agricultural habitats. It has undergone a population decline estimated at more than 80% since the 1970s and is now reduced to a small wild population estimated at fewer than 10 000 mature individuals. It was evaluated as Critically Endangered in the 2000 IUCN Red List and will retain this status in the 2004 list. Although habitat loss may have contributed to this species overall decline and remains a limiting factor, the main reason for its demise is reportedly exploitation for the pet trade. It was included in CITES Appendix II in 1981 under the general listing for the Psittacidae, and a possible transfer to Appendix I was discussed as long ago as 1994, but other approaches were considered preferable. Subsequently, many of these conservation measures have been tried, notably, in Indonesia: the establishment of a zero quota for wild caught birds since 1994; protection since 1999; and the establishment of protected areas holding important populations of the species. The species has also been subject to a CITES Significant Trade Review. Despite these measures, illegal trade, both domestic and international, continues, and there are concerns that some wild-caught birds in trade are being mis-declared as having been captive-bred. As well as the species meeting the Appendix I criteria, the proponent believes that an Appendix-I listing will strengthen the capability to halt the illegal trade by making it easier to prevent any wild-caught birds being passed off as captive-bred individuals. The proponent therefore seeks to transfer Yellow-crested Cockatoo from Appendix II to Appendix I in accordance with Resolution Conf. 9.24, Annex 1 Criteria Ai,ii; Bi,iii,iv and Ci,ii.

**Analysis**: Following Resolution Conf. 9.24, this species appears to meet the criteria for inclusion in Appendix I, given its now small and historically steeply declining population. It should, however, be noted that the population estimate is based on incomplete surveys and that there is some uncertainty as to whether a steep population decline is continuing. Ongoing demand for this species is demonstrated by the numbers appearing in international trade, with indications that part of this demand is being met through mis-identification of wild-caught birds as captive-bred. The species resembles the Sulphur-crested Cockatoo *C. galerita*, so that enforcement of an Appendix-I listing would require considerable vigilance.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| **Taxonomy** | |
| | |
| **Range** | |
| Indonesia and Timor-Leste with introduced populations in China (Hong Kong) and Singapore. | |
| **IUCN Global Category** | |
| | *Critically Endangered (meeting Criteria A1cd, A2cd, i.e., rapidly declining owing to habitat loss and exploitation; also qualifying as Vulnerable meeting Criterion C1, i.e., small declining population) (BirdLife International 2004).* |
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| *C. s. sulphurea*<br>On Sulawesi, ca.100 individuals are estimated for Rawa Aopa Watumohai National Park, which probably holds the most important population. | *The total population size (=number of mature individuals) is estimated at 2 500–9 999 based on a review of all available subpopulation estimates (BirdLife International, 2004).* |
| *C. s. abbotti* | *Additional population information for C. s. parvula is* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| On Masakambing island, only five individuals remained in 1999.<br><br>*C. s. parvula*<br>On Lombok, it is probably now extinct and on Sumbawa it is nearly extinct. On Komodo, 600 individuals are estimated for the Komodo National Park. On Pantar and Alor, 444–534 and 678–784 individuals are estimated respectively. On Flores, populations of more than ten individuals have been found in only two locations in the past ten years. On West Timor and other small islands in Nusa Tenggara only a few individuals are found. On Timor 500–1 000 individuals are crudely estimated.<br><br>*C. s. citrinocristata*<br>On Sumba, 1 150–2 644 individuals are estimated from studies conducted from 1989 to 1992, with only 229–1 195 outside national parks from a study in 2002. | *provided by Trainor (2004) as follows: on Penida, it is almost extinct with ten birds recorded in 1999 (Setiawan* et al*., 2001). On Moyo (300 km$^2$), ten individuals were recorded on 36 km of transects (Setiawan* et al*., 2000). On West Timor, a single bird was recorded at Bipolo in June 2004 with local people suggesting small parties of up to eight birds are sometimes present.* |
| **B) Restricted area of distribution**<br>**(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| *C. s. sulphurea*<br>Formerly widely distributed in Sulawesi, Indonesia, now locally extinct throughout much of its range.<br><br>*C. s. abbotti*<br>Occurs only on Masakambing, one of the Masalembo Islands in the Sulawesi Strait (extinct on Masalembo itself).<br><br>*C. s. parvula*<br>In Indonesia, inhabits most of the Lesser Sunda Islands, including Penida, Lombok, Sumbawa, Moyo, Komodo, Flores, Pantar, Alor, West Timor, and Semau, but extinct in some areas and from some islands. In Timor, recorded from only six locations.<br><br>*C. s. citrinocristata*<br>Endemic to Sumba island, Indonesia. | *The "Extent of Occurrence" of this species is estimated at 256 000 km$^2$ based on the combined area of all the relevant islands; however, this range is assessed as severely fragmented (BirdLife International, 2001) and the area actually occupied by the species considerably less than this.*<br><br>*Additional distribution information for C. s. parvula is provided by Trainor (2004) as follows: in Timor, there are 59 records from 13 sites (Trainor* et al*., 2004) with additional records published in Mauro (2003) including a flock of 40 birds.* |
| **C) Decline in number of wild individuals**<br>**(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| *C. s. sulphurea*<br>On Sulawesi, this subspecies has now disappeared from many sites where it was once recorded and recent evidence suggests a very steep decline in population throughout the island over the past 20 years.<br><br>*C. s. abbotti*<br>On the Masalembo islands, it was "easily found" until the 1980s, but is apparently disappearing, with only eight to ten birds found in early 1994.<br><br>*C. s. parvula*<br>On Flores, it was "very common all over the island" in the early 1980s, but only 15 individuals were recorded from the latest survey at Watubuku forest .<br><br>*C. s. citrinocristata*<br>On Sumba, it has undergone a decline from the 1980s with a population density estimated at just one to two birds per 1 000 ha in three different forest habitat types | *This species was common to abundant throughout its large range in central Indonesia in the 19th century, and sustained its numbers fairly well until the advent of international trade in the 1970s. Dramatic declines were noted by the late 1980s, and the species identified as "threatened throughout its range" (BirdLife International, 2001).*<br><br>*Jepson (2004) notes his understanding that serious population declines occurred during the 1980s when foreign demand jumped in response to the species being featured in a US television programme, but subsequently switched to the collector market for which evidence would not seem to be available to demonstrate that this had caused further declines since 1990.* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| (outside national park areas).<br><br>Overall, this species has suffered (and may continue to suffer) an extremely rapid population decline, probably equivalent to more than 80% over three generations (given its longevity). | |
| **D) Status suggests inclusion in Appendix I within 5 years** | |
| | |

**Trade criteria for inclusion in Appendix I**

**The species is or may be affected by trade**

| | |
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| Unsustainable harvesting over the last few decades is believed to be the main reason for this species' drastic decline.<br>From 1981 to 1989 the number of *C. sulphurea* exported from Indonesia increased dramatically totaling 61 774 birds. However, in 1989, after import restrictions by the European Union, and in 1992, after an import ban by the USA, the number exported decreased, with quotas for wild-caught birds set to zero in 1994.<br><br>However, demand for the species continues and, since 1992, there has been an increasing trade of captive bred individuals mainly from the Philippines, Singapore, South Africa and Indonesia. For example, between 1981 and 1989, only 72 captive-bred birds were exported, while in 1999 a maximum of 427 was recorded.<br><br>The species also continues to be traded within Indonesia, despite legal protection since 1999 and several local decrees banning hunting. For example, during 2001–2003, 100–300 birds were found in bird markets in Java and Bali. In June 2002, one collector in Waikabubak exported 52 individuals to other islands, while in June 2003, 52 were shipped from Sumba.<br><br>There is a strong possibility that wild-caught birds are illegally transferred from Indonesia to other countries in Southeast Asia and then are enter into legal trade. More than 1 000 birds are believed to have been smuggled in this way since 1993. Seventy illegal birds have been confiscated since 1992. Wild-harvested birds have also been observed for sale in a Singapore pet shop in 2002 (eight) and 2003 (ten). | *Harvesting was identified as the main reason for decline following a thorough review of this species by BirdLife International (2001) and in the Species Recovery Plan (PHPA/BirdLife International-IP, 1998). The authors noted that while it was not possible to assess the scale of domestic trade, evidence suggested that it was international demand that had driven development of trapping networks that had "effectively eliminated" the species. Jepson (2004) agrees that aspects of the species' ecology, methods of capture and high demand in the 1980s support the conclusion that trade rather than habitat was the primary threat and driver of the population decline.*<br>CITES-reported gross exports from the Philippines, Singapore, South Africa and Indonesia totalled 861 in 2000, 794 in 2001 and 602 in 2002.<br>C. sulphurea *observed in Indonesian bird-markets are likely to be destined for domestic* use *(Jepson, 2004). Parrots are kept by a relatively small number of bird-keeping households but this translates into a steady local demand (Jepson and Ladle, submitted).* |

**Other information**

**Threats**

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| Habitat loss must have also contributed substantially to the overall decline of this species' population. It inhabits primary and tall secondary lowland and hill forest and forest edge, scrub and agriculture (in Sulawesi), moist deciduous monsoon forest and gallery forest (in Nusa Tenggara), and adjacent areas of lightly wooded scrub and cultivation, mainly in the lowlands to 1 200 m. For example, *C. s. parvula* (Flores, Alor, Pantar, Timor and Moyo islands) is found in moist-deciduous monsoon forest. This type of habitat is under severe pressure because of illegal timber cutting and forest. | *Jepson (2004) writes that it was his assessment (in the mid-1990s) that the impact of habitat loss was limiting the available space for re-colonisation. Grimmett (2004) contends that habitats are below carrying capacity.* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Conservation, management and legislation** | |
| Indonesia established a zero quota for this species in 1994. Since 1999 all subspecies have been fully protected in Indonesia, meaning that no capture, possession or trade in specimens of the species is allowed (with penalties of up to five years in prison and fines of up to IDR 200 million).<br>Status assessments have been conducted on several islands and the results of these contributed to the development of a species recovery plan. Several protected areas holding important populations of this species, have been established. For example, in 1998, following a recommendation by BirdLife Indonesia, the Indonesian Government represented by Ministry of Forestry created two national parks on Sumba. | *In Timor-Leste, it is illegal to capture, hold or trade in any bird species (UNAET regulation 2000/19). In Dili, cockatoos have been confiscated and kept by the environment department with the intention of re-release. Although Timor-Leste is not currently a signatory to CITES, there is strong interest from the Ministry of Agriculture, Forestry and Fisheries and the Environment Directorate (Trainor, 2004).*<br>*The Conis Santana National Park in the process of being established in Timor-Leste has the most extensive forest habitat and probably the best population of this species (Trainor, 2004).*<br>C. sulphurea *has been the subject of a CITES Significant Trade Review.* |
| **Similar species** | |
| The subspecies *eleonora* of Sulphur-crested cockatoo (*C. galerita*) is similar in size and plumage coloration to *C. s. abbotti*. It occurs on the Aru Islands and is totally protected in Indonesia. | *Grimmett (2004) points out the Sulphur-crested Cockatoo regularly appears in trade in the region and thus traders could get around an Appendix I listing of Yellow-crested Cockatoo by passing the species off as Sulphur-crested. Thus were an Appendix I listing applied he warns that extra vigilance would be needed.* |
| **Captive breeding** | |
| In Indonesia, two companies have conducted captive breeding but, since 2003, only one has been in operation. In the Philippines, there is one commercial breeding centre, which produced 351 young between 1996 and 2001 and, in Singapore, there are at least two. | *Questions concerning the scale of captive breeding of this species are raised by Chisholm (2004), who comments that while not readily bred in captivity, they can produce up to three clutches per year. Grimmett (2004) adds that captive-breeding and ranching have not been advanced in any meaningful way and therefore have yet to provide a substitute for wild-caught birds. Both Chisholm (2004) and Grimmett (2004) cite examples of known or suspected trade in wild-caught birds mis-declared as having been captive-bred, Grimmet citing evidence that ca 120 birds may have been exported from Indonesia to Europe and elsewhere in this manner in 2001.*<br>*TRAFFIC Southeast Asia (2004) considers that monitoring of captive breeding centres has been problematic, and so the risk of potential 'laundering' of wild-caught birds is a concern. Gilardi (2004) notes that Appendix-I listing would require the registration of [commercial] captive breeding facilities (Res. Conf. 12.10) and that this should facilitate the monitoring of captive breeding.* |
| **Other comments** | |
| The small population size, delayed maturation and a possible lack of breeding trees constrain the recovery of the species.<br>Indonesia feels that an Appendix I listing will strengthen the capability to completely halt the illegal trade by making it easier to prevent any wild-caught birds being passed off as captive-bred individuals. | *Grimmet (2004) comments that an Appendix I listing would make trade in this species more difficult , Jepson (2004) commenting that smuggling of C. sulphurea from Indonesia to the Philippines and Singapore is likely to be by via traditional trade routes which essentially operate beyond the regulatory control of range States.* |

**Reviewers:** S. Butchart, C. Chisholm, N. Collar, M. Crosby, J. Gilardi, U. Grimm, R. Grimmett, P. Jepson, F. Lambert, I. Setiawan, C. Trainor, TRAFFIC Southeast Asia, R. Wirth.

## Deletion of the Peach-faced Lovebird *Agapornis roseicollis* from Appendix II. Proponents: Namibia and United States of America.

**Summary**: The Peach-faced Lovebird *Agapornis roseicollis* is found in Namibia, Angola and South Africa, the first being the largest area of range. It will be classified as Least Concern in the 2004 IUCN Red List, although little is known regarding its current population status. The species is believed to be widespread and abundant in some areas. A historic decline due to trapping has been noted, and the export of birds from Angola (which is not a party to CITES) is stated to have caused a population fall in that country. Collection from the wild for commercial purposes is prohibited in Namibia and South Africa. The species is widely bred in captivity for commercial purposes and, between 1992 and 2001, CITES trade data recorded over 500 000 exports, only five of which were recorded as wild-caught birds. The species was included in Appendix II in 1981 under the general listing of Psittaciformes, which includes all members of the order except those taxa in Appendices I and III and the Budgerigar *Melopsittacus undulatus* and the Cockatiel *Nymphicus hollandicus.* The last two were excluded from the general Appendix II listing. The species resembles at least six other *Agapornis* species, including three that occur in southern Africa: (1) the Black-cheeked Lovebird *A. nigrigenis,* which occurs mainly in Zambia but is recorded from Namibia and is classified in the 2004 IUCN Red List as Vulnerable; (2) Fischer's Lovebird *A. fischeri* and (3) Lilian's Lovebird *A. lilianae*, both classified as Near Threatened. The species is bred in captivity in large numbers and widely traded as a pet; current demand mainly involves uncommon colour morphs, although there are indications of increasing interest in "natural type" birds in South Africa. Removal of this species from the Appendices is thought unlikely to increase the demand for wild-caught birds. The proponents therefore seek to delete Peach-faced Lovebird from Appendix II.

**Analysis**: Although there is little concrete information on current population status, there is equally no indication that the Peach-faced Lovebird is currently threatened. Demand for the species appears to be met virtually entirely by captive-bred birds, which are widely available at low prices. It seems unlikely therefore that harvesting of specimens from the wild for international trade will have a detrimental impact on the species by exceeding the level that can be continued in perpetuity (over an extended period) or reduce the population to a level at which its survival could be threatened by other influences, nor is it likely that the Peach-faced Lovebird will meet the criteria for inclusion in Appendix I in the near future if trade is not subject to strict regulation. However, the species does resemble other lovebird species in trade; of those it most resembles, one is regarded as globally threatened and two as near-threatened. The species therefore appears to meet the criterion for listing in Appendix II (Resolution Conf. 9.24 Annex 2b) to assist in controlling trade in other listed species.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **Taxonomy** | |
| | |
| **Range** | |
| Angola, Namibia, South Africa. | *There are records from other African countries but the chances of these birds being escapees is high.* |
| **IUCN Global Category** | |
| | *Least Concern (BirdLife International, 2004).* |
| **Biological and trade criteria for retention in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| No historic or current population census information is available from the range countries. It is unlikely that any range contraction has occurred during the 20th century, and that it is more likely that populations have increased with the provision of water points in previously dry areas, and artificial structures in which it can nest. It is believed that the species is widespread and abundant in the wild. However, it was noted that there has been a historic | *Simmons (2004) estimates the population of this species to be ca. 60000 birds in Namibia. This is on the basis of a range of ca. 302 735 km$^2$ (Jarvis* et al.*, 2001).*<br>Gilardi (2004) reports that little is known of the status of the species in the wild and that there is no concrete evidence that provision of water has led to an increase in numbers or range. |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| decline due to trapping. The export of thousands of birds from Angola has greatly contributed to a reduction in its populations in the southern part of that country. However, a review of CITES trade data maintained by the World Conservation Monitoring Centre for 1992-2001 did not indicate any exports of the species from Angola. | *Angola is not a Party to CITES and therefore trade between it and other non-Parties will not be reported.* |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| Between 1992 and 2001, CITES-reported international trade involved over 540 000 specimens. Only five of these were reported as wild-caught and 153 were of unknown origin. The largest exporters were South Africa (27.8%), a range State, and China (15.47%). Far fewer birds (242) were reported as exported from Namibia, also a range State, during this time. More than 45 000 captive-bred specimens were exported from China alone during each of the years 1999-2001. | *Absence of trade data from Angola may hamper analysis (Gilardi, 2004).*<br><br>*Exports of captive-bred lovebirds from Taiwan, Province of China numbered in the thousands during the 1980s (Inskipp and Corrigan, 1992). South Africa has a large number of facilities breeding this species (TRAFFIC East/Southern Africa, 2004).* |
| **Retention in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| The only species within the region that appears similar to the Peach-faced Lovebird is the Black-cheeked Lovebird *Agapornis nigrigenis*, which is occasionally seen in the Caprivi Strip in Namibia. However, the yellowish beak coloration and peach face and chest distinguish the Peach-faced Lovebird from all other *Agapornis* species. Because there are stark morphological differences between the Peach-faced Lovebird and other lovebird species, the proponents anticipate there would be no effect on other lovebird species due to misidentification. | A. nigrigenis *is classified as Vulnerable in the 2004 IUCN Red List.*<br><br>*Concern has been expressed that the Peach-faced Lovebird could be confused with the Near-Threatened Lilian's Lovebird* A. lilianae *(Spottiswood, 2004; TRAFFIC East/Southern Africa, 2004; Warburton, 2004), for which trade in Mozambique has been described as excessive (Spottiswoode, 2004), and trapping and trade is also reported in Zambia and Zimbabwe (BirdLife International, 2004). It is also similar in appearance to Fischer's Lovebird* A. fischeri *(TRAFFIC East/Southern Africa, 2004; Warburton, 2004), which was previously one of the most commonly traded of the African parrots. It closely resembles the Red-headed Lovebird* A. pullarius *from Central Africa (Collar, 1997).*<br><br>*TRAFFIC International (2004) cautions that it is unlikely that enforcement agencies in many countries will be able to distinguish between this and other lovebird species on cursory inspection.* |
| **Other information** | |
| **Threats** | |
| **Conservation, management and legislation** | |
| The collection of this species from the wild for commercial purposes is prohibited in Namibia and South Africa.<br><br>In Namibia, the Peach-faced Lovebird occurs extensively in the Hardap Game Reserve, Namib-Naukluft Park, and the Waterberg Plateau Park, particularly around water sources. It also occurs peripherally in Etosha National Park, extensively in areas which are little impacted by people (Kunene River and eastern parts of the Orange River), and in 16 communal conservancies where rocky outcrops are found. The habitat in these areas is highly protected. | *The species occurs in the Kalahari Gemsbok National Park (in very low numbers) and in the Augrabies Falls National Park in South Africa. However, it is not protected under the* Cape Nature Conservation Ordinance*, 19 of 1974 (TRAFFIC East/Southern Africa, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **Captive Breeding** | |
| The Peach-faced Lovebird is widely bred in captivity for commercial purposes. A pair can breed and rear three clutches (four to five eggs per clutch) in a season. There are also 16 or more colour mutations of this species produced in captivity, of which eight are common, seven are established, and one is considered rare. Most color mutations are bred worldwide. | *Warbuton (2004) notes that a collection of pure-bred* A. roseicollis *(ca.100 birds) is kept by the University of Natal for research purposes and most of the offspring are sold. She observes that there was considerable local interest in the sale of these birds in 2001-2003 owing to the current trend being for the natural form and the difficulty in sourcing breeding stock.* |
| **Other comments** | |
| The proponents note that critics of this proposal may be concerned that removal from the Appendices will result in an unsustainable rate of capture of wild specimens by local people. Such an assumption can be made for any proposal to remove a parrot from the Appendices. However, the proponents believe that removing this species from the CITES Appendices is unlikely to increase the demand for wild-caught birds for the following reasons: (1) the species is easily bred in captivity, and almost all exports are (currently) captive-bred specimens; (2) demand is primarily for unusual color morphs (mutations) resulting from captive breeding; and (3) prices are low for captive-bred specimens.<br><br>The Namibian Ministry of Environment and Tourism notes specifically that there is no reason to believe that international trade has any effect on the Namibian wild population, or that the delisting of this species will impact it. South Africa, particularly the Northern Cape Province (where the species occurs) supports the proposal. | *According to Simmons (2004), although de-listing the species may increase the trapping of birds, they are so common in the remote montane and arid woodland areas of Namibia that any increase is unlikely to impact the core areas of their population. However Gilardi (2004) believes that the recent history of heavy trapping for trade in parts of the species' range suggests that removing the existing trade oversight provided by Appendix-II status may encourage resumption of unregulated and un-monitored harvest.*<br><br>*Note that "Peach-faced Lovebird" is the common name normally used by aviculturalists while "Rosy-faced Lovebird" is the name widely used in the ornithological literature.* |

**Reviewers:** R. Dean, J. Gilardi, R. Selman, R. Simmons, C. Spottiswood, L. Warbuton, TRAFFIC East/Southern Africa, TRAFFIC International.

## Transfer of the Lilac-crowned Parrot *Amazona finschi* from Appendix II to Appendix I. Proponent: Mexico.

**Summary**: The Lilac-crowned Parrot *Amazona finschi* is endemic to Mexico where it occurs in deciduous, semi-deciduous and pine-oak forest to 1 000 m on the Pacific slope. It is considered nationally 'threatened' in Mexico but is currently evaluated as Least Concern on the IUCN Red List. The total wild population was estimated to be 7 000–10 000 individuals in 2003. The current range is estimated to be less than 142 500 km$^2$, 29% less than 20 years ago, with optimal habitat reportedly only ca. 5 000 km$^2$. It has reportedly been extirpated from Oaxaca and parts of Nayarit, Durango, Colima and Sinaloa. Wild populations have apparently declined greatly since the 1980s and the species is reported to have low breeding success. Capture for national and international trade has been identified as the principal threat. Trade increased greatly in the late 1970s and international trade peaked during 1981–1982, with the majority of individuals being wild-caught. In 1981 the species was included in CITES Appendix II under the general listing of the Psittacidae, and in 1983 its capture was banned in Mexico. It is one of the parrot species most frequently seized at the Mexico-Texas border. In 1999, Mexico reopened legal international trade for this species and in 2000–2001 over 600 individuals were exported with CITES permits. Harvest was banned in 1983, but quotas set for harvest and export permits issued during several years in the late 1990s. The species also appears in local markets in significant numbers. The proponent now seeks inclusion of the species in Appendix I in accordance with Resolution Conf. 9.24, Annex 1.

**Analysis**: Although detailed information is lacking, the species may meet the criteria for inclusion in Appendix I: it has a relatively small population, believed to be declining. The population may be slightly higher than the guideline figure suggested in Resolution Conf. 9.24. There is little concrete information to estimate the rate of decline, but given the relatively long generation time of most parrots, what estimates exist could be consistent with the guidelines in Resolution Conf. 9.24. It appears that domestic and international trade is a major contributory factor to the deteriorating status of this species although habitat loss is undoubtedly also important. It is unclear, however, whether an Appendix-I listing will contribute significantly to improving the status of this species, over and above other conservation measures, and alongside application of its current Appendix-II listing.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Taxonomy** | |
| **Range** | |
| Mexico. | |
| **IUCN Global Category** | |
| | *Formerly listed as Near Threatened (Collar* et al., *1994), this species was re-classified as Least Concern (BirdLife International, 2000).* |

### Biological criteria for inclusion in Appendix I

**A) Small wild population**

**(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour**

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| The total wild population is estimated at 7 000-10 000 individuals. It is most abundant in the central part of its range in Jalisco and Michoacán.<br><br>The species has specific habitat requirements in deciduous and semi-deciduous forest and pine-oak woodland, makes large seasonal movements and suffers low breeding success: 42% nesting success; 0.72 juveniles fledged per nesting pair. Productivity varies between years from 0.25 to 1.3 juveniles per pair. | *Information presented in the supporting statement on population size is relatively new and based on field studies. Previous, more general reviews of the literature describe the species as "frequent to common within restricted range, very uncommon in Oaxaca" and "fairly common but local in south-eastern Sonora. Abundant, Colima. Very uncommon in Oaxaca highlands" (del Hoyo* et al.*, 1997; Juniper and Parr, 1998). It should be noted that the recent assessment of this species' status (=Least Concern)* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| | *coordinated by BirdLife International was completed prior to this information becoming available.* |

**B) Restricted area of distribution**

**(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential**

It occurs from sea level to 1 000 m, but mainly below 500 m.

It is now extirpated from Oaxaca (where it has not been recorded or locally reported for over 60 years) and areas of Nayarit, Durango, Colima and (particularly the lowlands of) Sinaloa.

The current range is estimated to be less than 142 500 $km^2$, 29% less than 20 years ago.

Analysis of forest cover data shows that just 25 517 $km^2$ of suitable habitat remains between south Sonora and Oaxaca. However, only 5 106 $km^2$ of this is the tall and medium-height forest that is optimal for the species.

**C) Decline in number of wild individuals**

**(i) Ongoing or historic decline; (ii) inferred or projected decline**

The species was considered common across most of its range during the 1940s–1960s, albeit scarce to uncommon in Oaxaca. Wild populations have apparently declined dramatically since the 1980s.

A survey of people living in the species' range found that 91% of respondents believed that the species had declined in their region (98% in Nayarit), with 30% in Oaxaca and 29% in Jalisco believing it had been extirpated locally.

Between 1950 and 1994, 64% of Mexico's sub-humid forest was lost. The species is no longer found at 37% of sites from which it was previously recorded.

The species' range is estimated to have declined by 29% in the last 20 years, with up to 20% of its habitat and original range having been lost.

*TRAFFIC North America (2004) suggests that use of such survey data to identify population trends should be undertaken with caution but Gilardi (2004) notes that the survey findings support indications of declines provided by habitat conversion and re-sampling of historic localities.*

**D) Status suggests inclusion in Appendix I within 5 years**

## Trade criteria for inclusion in Appendix I

**The species is or may be affected by trade**

Capture for national and international trade is believed to be the principal threat to *A. finschi*. Trade increased dramatically in the late 1970s, and during 1981–1982, it was one of the three most sought-after parrot species in Mexico. Approximately 2 300 *A. finschi* were reported as imported directly from Mexico (out of a total of approximately 2 460 reported in international trade) during that same period.

A total of 4 061 individuals were recorded in CITES trade data from 1981–2001, of which 79% (3 215) were direct exports from Mexico, and the majority wild-caught. The principal destinations for exports from Mexico were the USA and Europe.

Widespread illegal trade in both chicks and adults continued despite a 1983 ban on capture, this being one

*CITES annual report data reviewed in May 2004 give different numbers from those cited in the proposal: export of four individuals was reported in 1995-1998 (the first reported exports since 1983), 47 in 1999, 288 in 2000, and 356 in 2001 (total 695). All but three of these were reported as wild-caught. The recent increase reflects Mexico's decision to allow exports. The main export destinations in later years were in Europe and Asia.*

*US Law Enforcement Management Information System data for 1995-2002 records US imports of 138* A. finschi *originating from Mexico, of which 26 were abandoned, 49 seized, four re-exported and 59 cleared. The seizure of a single shipment of 25 birds in 2000 is significant, however overall, the number of birds seized do not seem particularly high relative to the number illegally*

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| of the parrot species most frequently seized at the Mexico-Texas (USA) border.<br><br>The number confiscated (e.g., 149 individuals during 1990-1993) is reported to be only a fraction of the total number smuggled to the USA. This is also one of the species most frequently confiscated by the Mexican Government. In 2003, CITES officials from Switzerland confiscated a shipment of *A. finschi* from Mexico containing twice the number of individuals stated on the export permit.<br><br>International trade increased from 1991–2001, with 898 individuals exported from Mexico during this period, 60% of which were wild-caught.<br><br>The species is also frequently sold nationally, and was found to be the most common species on the Sonora market (597 individuals during 1994–1995).<br><br>Interviews with local people revealed 75% reported the collection of chicks in their region, 10–50 chicks per season at each site. Furthermore, 53% also reported the local capture of adults with nets, generally 100 individuals per locality each season. In southern Sonora and Sinaloa, capture was reportedly for illegal trade to the USA. | *offered for sale in Mexico (e.g. 458 individuals in one market in 1995, as noted in the proposal) (TRAFFIC North America, 2004).* |

**Other information**

**Threats**

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|---|---|
| Capture for national and international trade is believed to be the principal threat. | *"The National Project for the Conservation, Management and Sustainable Use of Mexican Psittacines" published by the Ministry of Environment in 2000, indicates the threats to this species in order of importance as: 1. Habitat loss, 2. Habitat fragmentation and loss of connectivity among populations, 3. Inadequate organization between governmental conservation programs and promotion of to agriculture and stockbreeding, 4. Illegal capture (TRAFFIC North America, 2004). This assessment was based on opinions expressed by participants in a workshop to provide initial evaluation of all parrot species in Mexico and preceded the specific evaluation of the Lilac-crowned Parrot commissioned by CONABIO and conducted from March 2002 to March 2003. The study indicated that capture for trade was far more intense and widespread than previously suspected (Gilardi,* 2004). |

**Conservation, management and legislation**

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| Capture and domestic trade was banned in Mexico, in 1983. The species is currently classified nationally as “Threatened”, although recently it has been recommended for reclassification as “Endangered.” It is also considered a priority species for parrot conservation by the national Priority Species Recovery Project. | *A government scheme has been established with the aim of promoting alternative production schemes compatible with environmental management, including through creating harvesting opportunities that can be complementary to other activities, such as agriculture.* |
| In 2002, CONABIO requested the study “Evaluation of the status of wild populations of the Lilac-crowned Parrot *Amazona finschi* in Mexico”. The aim of this study was to determine the current distribution and relative abundance of the species in Mexico, in order to assess the impact that national and international trade had had on wild populations. | *According to information provided by the National Project for the Conservation, Management and Sustainable Use of Mexican Psittacines, a harvest quota of 22 birds was set for the 1998-1999 season, and 137 for the 1999-2000 season.* A. finschi *was not included in the list of species in the 2002-2003 and 2003-2004 season quotas authorized by SEMARNAT under the UMA scheme (TRAFFIC North America,* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| The species was included in Appendix II in 1981 and subject to a CITES Significant Trade Review in 1993, but no further action was taken. | *2004).*<br><br>*Clarification is required regarding harvest and trade controls for this species within Mexico.* |
| **Similar species** | |
| Red-crowned Parrot *Amazona viridigenalis* is the most similar species to *A. finschi*. It is endemic to north-east Mexico, and is included on CITES Appendix I. | |
| **Captive breeding** | |
| Internationally, there are 53 individuals registered in breeding centres and zoos, but there have been no reports of young hatched in captivity during the last six months. Within Mexico, the size of the captive population is unknown, but there are no captive breeding schemes producing second generation birds for large-scale trade. | |
| **Other comments** | |
| Two subspecies are recognised: *A. f. woodi* (south-east Sonora to south-west Chihuahua and north-east Sinaloa) and *A. f. finschi* (Sinaloa, Nayarit, Jalisco, Durango, Colima, Michoacán, Guerrero and Oaxaca).<br><br>The inclusion of *A. finschii* on Appendix I would allow for the implementation of stronger sanctions on illegal trade cases in its country of origin. | |

**Reviewers** J. Gilardi, TRAFFIC North America.

## Inclusion of the Painted Bunting *Passerina ciris* in Appendix II. Proponent: United States of America.

**Summary**: The Painted Bunting *Passerina ciris* occurs in south-east and south-central USA, Mexico, Central America and the Caribbean. It breeds in the USA and Mexico, with 80% of the population breeding in the USA. It will be classified as Near Threatened in the 2004 IUCN Red List. The total population is estimated to be 3.6 million individuals. Populations in the USA and north-east Mexico have declined by 55% over the last 30 years and the species has been extirpated from parts of its range in south-central and east USA and north-east Mexico. Loss of habitat, brood parasitism by two species of Cowbird and capture for use as cage birds have been reported as the main threats. About 15 000 per year were reportedly exported annually from Mexico until 1982, when the country banned exports of all wildlife. Export resumed in 1999, when Mexico again opened international trade of wildlife. Exports are reported to be mainly to Argentina, Belgium, Greece, Japan, Italy, Malaysia, the Netherlands, Paraguay, Spain and the UK. Estimated exports vary, with one source indicating that fewer than 8 000 birds in total were exported during the period 1999-2003 and others reporting some 12 000 exported during the 2001-2002 harvest season. Mature males are targeted because of their colorful feathers and songs. There is little if any indication of exports from other countries. The proponent seeks inclusion of *P. ciris* in Appendix II in accordance with Article II, Resolution Conf. 9.24, Annex 2a Criteria A and Bi on the grounds that if international trade is not strictly regulated, the species will meet the criteria for inclusion in Appendix I in the next five years and that harvesting of specimens from the wild for international trade will exceed, over an extended period, the level that can be continued in perpetuity.

**Analysis**: Although numbers have shown a long-term decline, the Painted Bunting would not appear currently to meet the criteria for inclusion in Appendix II under Resolution Conf. 9.24. Given that the numbers currently reported as annually exported from Mexico represent between 0.06% and 0.3% of the estimated global population, it seems very unlikely that harvesting of specimens from the wild for international trade will have a detrimental impact on the species by exceeding the level that can be continued in perpetuity or reduce the population to a level at which its survival could be threatened by other influences. Nor, given the small recorded amount of international trade, very large population and relatively slow estimated rate of decline does it seem that trade regulation will be necessary to prevent the species meeting the criteria for inclusion in Appendix I in the near future.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| Bahamas, Belize, Cuba, Guatemala, El Salvador, Honduras, Mexico, Nicaragua, Panama, USA, uncommonly Costa Rica and Panama. | |
| **IUCN Global Category** | |
| | *The species will be listed in the 2004 IUCN Red List as Near Threatened, almost meeting Criteria A2bcd and A3bcd (IUCN,* in prep.). D*eclines are approaching >30% in the past ten years and projected for the next ten years (BirdLife International, 2004).* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| **Biological and trade criteria for inclusion in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| The global population is estimated to number some 3.6 million individuals. The majority (80%) of the population breeds in the USA. There are two separate populations, an eastern population with a limited coastal range and a more extensive western population. Both populations are affected by habitat loss. The eastern population appears particularly susceptible to parasitism by the Brown-headed Cowbird *Molothrus ater.*<br><br>Populations have declined since the mid-1960s and the species has been extirpated from parts of its range in south-west and eastern USA and north-east Mexico. Breeding Bird Survey data from the continental USA indicate that the population has declined by 55% over the last 30 years with the steepest declines in the eastern population. | *There are no indications that this species has a small population size, restricted range or a rate of decline close to the guideline level of a 50% decline within two generations.* |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| During 1974–1975 over 15 000 birds were exported from Mexico. This trade continued at similar levels until 1982, when Mexico banned exports of all wildlife.<br><br>In 1999, Mexico again opened international trade of wildlife. During the 2001–2002 harvest season, ca.12 000 individuals were exported. The major importing countries include: Argentina, Belgium, Greece, Japan, Italy, Malaysia, The Netherlands, Paraguay, Spain and the UK.<br><br>The species has also been reported in local markets in Cuba, Costa Rica, Nicaragua and Guatemala. | *Other information indicates that fewer than 8 000 birds were exported from Mexico between 1999 and 2003 (TRAFFIC North America, 2004).*<br><br>*TRAFFIC Southeast Asia (2004) reports that the species is apparently not found in trade in Southeast Asia.* |
| **Other information** | |
| **Threats** | |
| Loss of habitat and capture for sale as cagebirds are the primary threats with part of the declines also being attributed to brood-parasitism by Brown-headed Cowbird. The eastern population is especially susceptible to habitat degradation and destruction. Trapping and sale in local markets occurs in Mexico, Central America and the Caribbean, and overseas to international markets in Europe, South America and Asia. During 1979–2000, Mexico legally authorized the trapping and domestic trade of 5 800 birds per year on average. Mature males are targeted because of their colorful feathers and songs. This affects the wild population structure and dynamics. | *No legal exports occurred from Mexico from 1982 to 1999, but Breeding Bird Survey data shows that populations continued to decline steadily over this period, presumably driven by habitat loss and/or national trade.*<br><br>Sykes (2004) writes that the decline of the eastern population is presumably driven by habitat degradation and destruction (and perhaps cowbird parasitism), and widespread illegal trapping in Cuba. He also notes that there is also widespread trapping in southern Florida by residents of Cuban origin where it is strictly illegal. These birds are probably not being sold outside the USA but are trapped, sold, and traded within the large Cuban community in southern Florida.<br><br>*Perez Mena (2004) notes that, in Cuba, the principal threats are habitat transformation and harvest during the migration period for use as pets.* |
| **Conservation, management and legislation** | |
| In the USA, it is listed as a Federal “bird of conservation concern”, and is protected under the *Migratory Bird Treaty Act*. It is therefore not legally exploited. In Mexico, | *From 1979 to 2001 Mexico used a system of annual quotas which included a list of species that could be wild* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| the species is not protected under the Endangered Species List or Norma Oficial Mexicana NOM-059-ECOL-2001 (DOF 2002).<br><br>It is currently listed on the Partners in Flight Watchlist as a species of special concern.<br><br>Appropriate habitat for this species has likely been conserved in protected areas throughout the species' range (e.g., National Wildlife Refuges and National Parks in the USA). Additional measures are needed for the conservation of suitable breeding habitats in coastal areas.<br><br>At the 2002 meeting of the Trilateral Committee for Wildlife and Ecosystems Conservation and Management, the US and Mexican Governments discussed setting up a joint task force to assess the impact of the bird trade on this species, but this is yet to be implemented.<br><br>After 2000, Mexico implemented a program to promote the sustainable harvest of wildlife within geographical management units (UMAs). However, harvest of this species is not limited to this harvest management scheme, and much improvement is required for it to become an effective measure.<br><br>Mexico and the USA are signatories to the Migratory Bird Convention for the Protection of Migratory Birds and Game Mammals, which restricts the taking of migratory birds. Stronger enforcement is needed, particularly by Mexico as the primary exporter of this species. | *harvested in each state. In 2000 a new* General Wildlife Law *(GWL) entered into force, but its regulations have not been published yet. Since 1999, two main harvesting schemes have been applied: one through Wildlife Management Units (UMAS) which require an authorized management plan to allow (if sustainable) the harvest of 10-15% of the total population, and another scheme called "subsistence harvesting" which does not require any previous surveys or management plans. According to the GWL, harvest and trade should be carried out under UMAS and birds traded should have a band from the Federal Wildlife Office, but market surveys indicate that over 85% of the birds present in trade are unbanded (Iñigo-Elias* et al., *2002).* |
| **Similar species** | |
| **Captive breeding** | |
| Large-scale captive breeding for commercial purposes is not yet known. Small captive-breeding operations exist in specialized aviaries in Latin America, Europe and Asia. | |
| **Other comments** | |
| | *Two subspecies are recognised:* P. c. pallidior *(=western race) and* P. c. ciris *(=eastern race). Demarest (2004) notes that the eastern population may be an "incipient" species (i.e. one which may prove to be genetically distinct so as to warrant species status).*<br><br>*The species is usually harvested during migration (Sept–Feb), and also in wintering areas along both coasts (TRAFFIC North America, 2004).*<br><br>*Winkler (2004) notes that the trade focuses on mature (second year) males and that therefore the impact on the wild population is very low and much exceeded by natural mortality rates.* |

**Reviewers:** D. Demarest, E. Perez Mena, J. Rappole, TRAFFIC North America, K. Winker,

## Transfer of the Madagascar Spider Tortoise *Pyxis arachnoides* from Appendix II to Appendix I. Proponent: Madagascar.

**Summary**: The Madagascar Spider Tortoise *Pyxis arachnoides* is a small tortoise which only occurs in the dry coastal zone of southwest Madagascar. It is one of two members of the genus *Pyxis*. The other, the Flat-tailed Tortoise *P. planicauda,* which occurs in western Madagascar, was transferred from Appendix II to Appendix I in 2002. Females of *P. arachnoides* produce one egg per clutch and, in captivity, have been recorded as laying up to three clutches a year. Age at maturity is unknown, though has been suggested as likely to be around 12 years, and the species is believed to be long-lived. IUCN classified the species as Vulnerable in 1996, on the basis of: an estimated extent of occurrence of between 5 001 and 20 000 $km^2$ or an area of occupancy of between 11 and 500 $km^2$; a highly fragmented distribution or distribution confined to no more than ten locations; and a continuing observed, inferred or projected decline. However, the extent of occurrence has been reported as more likely to be around 30 000 $km^2$, with more than ten populations known and an area of occupancy very likely to be considerably greater than 500 $km^2$. Total population numbers are unknown, although local population densities of up to three individuals per hectare have been reported. Estimates based on range size indicate that there are likely to be many tens of thousands of individuals in the population as a whole. There appear to be no documented data on either observed population declines or decrease in range, although both are widely inferred to be occurring as a result of habitat loss and collection for the export trade. There may be some very limited local use of the species for food, but this is not confirmed. Internationally it is in demand for the pet/hobbyist trade, with specimens reputedly reaching prices of USD 600. Trade recorded in CITES trade data increased markedly between 1999 and 2000. In the period 1993-1999 fewer than 300 *P. arachnoides* were recorded in international trade in total, along with around 150 individuals recorded as *Pyxis* spp. In the years 2000-2002 just over 4 000 individuals of *P. arachnoides* were reported as exported, along with 500 individuals recorded as *Pyxis* spp. Recorded exports in 2000 (just over 3 000) greatly exceeded the export quota set by Madagascar for that year (1 000). Nearly 600 *P. arachnoides* were recorded as exported in 2001, despite Madagascar reportedly imposing a zero export quota for that year. No exports have been reported for 2003. Madagascar has been the subject of the first country-based Significant Trade Review. Under this process, an Action Plan for the Reform of Madagascar's Wildlife Export Trade, addressing CITES-listed as well as non-CITES species, has been agreed by the Malagasy authorities and presented to the Animals and Plants Committees. Recommendations for implementation of the plan have been made by these Committees, and mechanisms for implementation are currently being explored. The proposal seeks to transfer the Madagascar Spider Tortoise from Appendix II to Appendix I in accordance with Article II, paragraph 1, of the Convention, and Resolution Conf. 9.24, Annex 1, Criterion B. i), iii) and iv); and C. i) on the basis of a restricted distribution and declining population.

**Analysis**: From the available information, which is admittedly sparse, it would not appear that *Pyxis arachnoides* currently meets the criteria for inclusion in Appendix I under Resolution Conf. 9.24. The species does not appear to have a small population, nor a particularly restricted distribution (using the guidelines in Resolution Conf. 9.24), although its distribution is believed fragmented. There is insufficient information to determine whether the species has undergone a substantial historic decline (Resolution Conf. 9.24 suggests 50% in five years or two generations, whichever is the longest). If so, this will have almost certainly been the result of habitat loss and not exploitation, as observed levels of harvest have been low until recently. Habitat has definitely been lost within the range of the species in the past few decades, but it is unclear whether such loss will have led to the rate of decline suggested by Resolution Conf. 9.24 as an appropriate guideline. Harvest rates as inferred from export levels increased during the early 2000s and habitat conversion may be expected to continue although it is still not clear that criteria for inclusion in Appendix I will be met in the near future.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| Synonym: *Testudo arachnoides.* | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Range** | |
| Madagascar. | |
| **IUCN Global Category** | |
| Vulnerable (VU B1+2abcd) (criteria 2.3, 1994; and in 2000 and 2003) (Assessed 1996). | *VU (IUCN Red List, 2003).* |

## Biological criteria for inclusion in Appendix I

**A) Small wild population**

**(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour**

| | |
|---|---|
| No accurate population estimates exist, but it is estimated that there are over 10 000 individuals in fragmented populations. There may only be ten remaining populations.<br><br>Population density of up to three animals per hectare has been reported but this may be abnormal.<br><br>Reproductive rate: sexual maturity at two years, one egg per clutch, with up to three clutches annually recorded in captivity. Longevity of over 50 years recorded. | *Raxworthy and Nussbaum (2000) commented that there were certainly many more than ten separate populations.*<br><br>*Raxworthy (2004) notes that using conservative figures for population density and area of occupancy, the overall population is likely to be many tens of thousands of individuals.*<br><br>*The statement of maturity at two years is clearly a typographic error in the supporting statement: the reference cited for this (IUCN CBSG, 2002) in fact notes that age at first reproduction is probably about 12 years. Reported longevity of 50 years is based on tenuous data (van Dijk, 2004).* |

**B) Restricted area of distribution**

**(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential**

| | |
|---|---|
| The species is classified as Vulnerable by IUCN on the basis of: an estimated extent of occurrence of between 5 001 and 20 000 $km^2$ or an area of occupancy of between 11 and 500 $km^2$; a highly fragmented distribution or distribution confined to no more than ten locations; and a continuing observed, inferred or projected decline.<br><br>However, excessive collection for export and loss of habitat have certainly led to population declines and could lead to the extirpation of some sub-populations. A CAMP (Conservation Assessment and Management Plan) workshop organised by the IUCN Captive Breeding Specialist Group in 2001 suggested that the species should be proposed for reclassification as Endangered. | *There are three distinct subspecies apparently with discontinuous ranges (van Dijk, 2004).*<br><br>*Raxworthy and Nussbaum (2000) noted that the large area of occurrence of the species (as defined by the IUCN Red List Criteria) of around 30 000* $km^2$ *did not suggest that it was threatened with extinction. The actual distributional range of the species forms a strip, estimated at averaging some 15 km width, running some 600 km along the coast of south-west Madagascar from Morombe to Amboasary, a total area of some 9 000* $km^2$*. The area within this actually occupied is unknown (Raxworthy, 2004).* |

**C) Decline in number of wild individuals**

**(i) Ongoing or historic decline; (ii) inferred or projected decline**

| | |
|---|---|
| Although no population estimates exist, the degree of habitat destruction and the demand for international trade suggest that the population has been declining and is not viable in the long term. Both major threats, habitat decline and mass-collection, have been identified since the 1970s. | *There are no population data or actual studies of rates of change of suitable habitat within the area of occurrence of the species to confirm such declines (Carpenter, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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## Trade criteria for inclusion in Appendix I

**The species is or may be affected by trade**

The vast majority of collected specimens enter the international pet trade The species is popular because it remains small and has an attractive pattern on its carapace. The trade has increased explosively since the late 1990s. In 2000 and 2001, respectively 2 569 and 1 072 specimens were traded, although other trade figures state lower numbers.

Export quotas were established in Madagascar (1000 for 2000, 0 for 2001). The EU introduced an import ban in 1999.

The USA and Japan are the main importing countries. *P arachnoides* is offered for sale locally to tourists. National consumption is negligible.

In May 1999, over 330 specimens were confiscated in France. In the following years, more cases of illegal trade have been identified. Smuggling occurred by air or sea, especially via Asian fishing boats, to South Africa, the Comores and China.

*In the period 1993-1999 fewer than 300* P. arachnoides *were recorded in international trade in total, along with around 150 individuals recorded as* Pyxis *spp. In the years 2000-2002 just over 4000 individuals of* P. arachnoides *were reported as exported, along with 500 individuals recorded as* Pyxis spp.. *Recorded exports in 2000 (just over 3 000) greatly exceeded the export quota set by Madagascar for that year (1 000). Nearly 600* P. arachnoides *were recorded as exported for 2001, despite Madagascar reportedly imposing a zero export quota for that year. No exports have been reported in 2003. Major importing countries are Japan, USA and South Africa.*

*Spider tortoises have been advertised for sale on the internet at 850 USD for a breeding pair (Anon., 2004).*

*In June 2002, 218* Pyxis arachnoides *were seized by customs officials in La Réunion, a French Overseas Department, from a fishing boat belonging to a Malagasy company based in Tuléar (TRAFFIC Europe, 2004).*

## Other information

**Threats**

Commercial collection is believed to constitute the major threat, with habitat degradation through conversion to agricultural land, production of charcoal and changes in the water table believed to be an important secondary threat.

*The species prefers coastal dunes and is often found in dry vegetation with a sandy substrate (Pedrono and Smith, 2003). Such areas may have suffered less habitat degradation than denser inland forest areas in the region.*

**Conservation, management and legislation**

The species is protected nationally and consumption is forbidden. Collection and export permits are required. However, law enforcement is weak.

The species is reported from two protected areas. A large proportion of the range of *P. a. arachnoides* is unprotected.

*The species is not specifically named in Malagasy legislation and is therefore considered* de facto *a game species, although until the late 1990s the species was implicitly regarded as protected, being excluded from most collection permits and with no commercial export permits issued for it (Jenkins, 1995). At present collection requires a permit and may only be carried out between 1 May and the first Sunday in October.*

*Madagascar has been the subject of the first country-based Significant Trade Review. Under this process, an Action Plan for the Reform of Madagascar's Wildlife Export Trade, addressing CITES-listed as well as non-CITES species, has been agreed by the Malagasy authorities and presented to the Animals and Plants Committees. Recommendations for implementation of the plan have been made by these Committees and mechanisms for implementation are currently being explored.*

*The species has been recorded since 1990 in at least three protected areas (Raxworthy, 2004).*

**Similar species**

*Pyxis arachnoides* resembles other turtle species with similar carapace patterns, such as *Psammobates spp., Geochelone elegans* and *G. platynota*. This may cause

*Particularly in old specimens, the general shape (and sometimes pattern) of* P. arachnoides *is similar to* Kinixys belliana *(Loehr, 2004). The latter is well established as an introduced species in Madagascar (Pedrono and Smith,*

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| identification problems among non-specialists. | *2003).* |
| **Captive breeding** | |
| Captive breeding appears to be extremely difficult and there are very few instances when specialists in zoos were able to breed *P. arachnoides* successfully. | *Private keepers in Europe have had success breeding this species. Perceived problems may be explained by the fact that the eggs diapause and may take a year to hatch (Loehr, 2004).* |
| **Other comments** | |
| Although currently classified as Vulnerable by IUCN, commentators have suggested a re-classification to Endangered on the basis of levels of international trade. | |

**Reviewers:** A. Carpenter, P.P. van Dijk, C. Lippai, V. Loehr, C. Raxworthy, TRAFFIC Europe.

**Ref. CoP13 Prop. 16**

## Inclusion of the genus *Malayemys* in Appendix II. Proponent: United States of America.

**Ref. CoP13 Prop. 17**

## Inclusion of the Malayan Snail-eating Turtle *Malayemys subtrijuga* in Appendix II. Proponent: Indonesia.

**Note:** Two proposals are considered together in the following analysis. One is for a single species, the other for the higher taxon of which that species is currently the only recognised representative. The supporting statements provided for the two proposals are the same. The higher taxon has been proposed for listing because taxonomy in freshwater turtles is unstable and it is likely that the current single species may be split into two or more species in the future. Although such a change would be automatically incorporated into the listings in the CITES Appendices (provided the new taxonomic source were accepted by the Nomenclature Committee), this would not necessarily be the case in national legislation implementing CITES and other trade regulations. A higher taxon listing is intended to help mitigate this problem and avoid future confusion in national legislation and enforcement.

**Summary**: The Malayan Snail-eating Turtle *Malayemys subtrijuga* is a small freshwater turtle with a wide range in Southeast Asia, where it inhabits lowland water bodies including ponds, canals, wet rice fields, swamps and rivers. It is the only currently recognised member of the genus *Malayemys* and, like other turtles, probably takes a long time to reach maturity, has high juvenile mortality and long adult survivorship. Some populations of *Malayemys* are reported to have declined substantially (Cambodia, Lao P.D.R., Vietnam). Populations in Thailand have apparently remained fairly stable. Populations in Indonesia and Malaysia are localised and no trend data are available. Recent exploitation pressures apparently resulting mainly from demand for international trade have reportedly been a significant cause of population depletions throughout the range, but particularly in Cambodia, Lao P.D.R. and Vietnam. There is apparently a large illegal export of freshwater turtles, including *Malayemys,* from Cambodia, mainly to Vietnam. The species is said to be among the most numerous freshwater turtles imported into China; permits were issued for the import of 11 300 specimens in 2000. The species is also reportedly affected by the marketing of large numbers for release for Buddhist merit-making and may also be affected by accidental capture in fishing nets and habitat deterioration and loss. IUCN considers *Malayemys subtrijuga* Vulnerable. The proponents seek inclusion of *Malayemys spp.* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a criteria A and Bi on the grounds that if the international trade is not strictly regulated the species will meet the criteria for inclusion in Appendix I in the near future and that harvesting of specimens from the wild will exceed, over an extended period, the level that can be continued in perpetuity.

**Analysis**: The available information suggests that the species meets the criteria of Resolution Conf. 9.24, Annex 2a Bi for inclusion in Appendix II. Large scale collection of specimens for international trade is evidently significantly depleting populations and therefore is likely to be unsustainable. *Malayemys subtrijuga* is a reasonably distinctive member of the family Emydidae, of which several other species and genera are already included in the Appendices. It would appear that its inclusion in the Appendices will not create any additional identification and enforcement problems.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| Synonyms: *Emys subtrijuga, Damonia subtrijuga, Geoclemys subtrijuga, Geoclemys macrocephala, Emys nuchalis, Damonia crassiceps, Damonia oblonga.*<br><br>Recently the Mekong population has been proposed as a separate species. | |
| **Range** | |
| Cambodia, Indonesia, Lao P.D.R., Malaysia, Thailand and Vietnam; also possibly occurs in Myanmar, but not confirmed. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **IUCN Global Category** | |
| Vulnerable (VU A1d+2d). | *VU (IUCN Red List 2003).* |
| **Biological and trade criteria for inclusion in Appendix II** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| **Cambodia:** Traditionally, *Malayemys* and their eggs have been widely collected for subsistence use and local trade. From the early 1990s Cambodia was an important source for *Malayemys*, imported into Vietnam. Freshwater turtle consumption, use and export were prohibited. However, now there is reportedly a large illegal export trade of *Malayemys* mainly to Vietnam. Collection pressure is currently very intensive and populations of *Malayemys* have apparently declined substantially, mainly, it appears, as a result of the demand for international trade. | *Clutch size ranges from three or four eggs (small females, Thailand) (Srinarumol,* et al., unpubl.*), to five to 10 eggs in Cambodia (Nutaphand, 1979; Pritchard, 1979). The number of clutches per year is not known, but no indications have appeared of multiple clutching.* |
| **Indonesia:** Populations are localised and no trend data are available. Annual harvest quotas are established. National utilization is at a low level and there is a legal export trade. Populations of native freshwater turtles including *Malayemys* were predicted in 2000 'to certainly decline' without further control on trade. | *Age and size at maturity is not known, but Srinarumol (1995) and van Dijk (*unpubl.*) collected data indicating the species may mature after about three (males) to five (females) years in Thailand. Maximum life span is not known (van Dijk, 2004).* |
| **Lao P.D.R.:** There is extensive harvest, trade and export of *Malayemys* with exports almost entirely going to Vietnam and China. Populations are significantly depleted, mainly as a result of International trade. | |
| **Malaysia:** Populations of *Malayemys* are localised and no trend data are available. Small numbers have been observed destined for export to China. | |
| **Myanmar:** no evidence of domestic or international trade for this species. | |
| **Thailand:** Populations have been modestly exploited over a long period, resulting in reasonable population densities. Collection for Buddhist merit-making and consumption has greatly decreased since legal protection of the species in 1992. | |
| **Vietnam:** Historically, *Malayemys* was common in the southern lowlands, but populations were very low by the late 1990s. The species is heavily collected for the wildlife trade, being the most common and highest-volume species sold in markets and one of the most common turtles released as part of Buddhist religious practices. *Malayemys* is a common, and at times very large component of wildlife shipments confiscated. At least 2 620 *Malayemys w*ere legally exported between 1994 and 1999. Recent exploitation pressures have resulted in significant population declines. | ***Vietnam:** No legal trade has been permitted since April 2000, but nearly 2 000 specimens were seized on three occasions that year (Anon., 2000).* |
| **China:** *Malayemys* is among the most numerous species imported. Permits were issued for the import of 11 300 specimens in 2000 (1.3% of total reported wild-harvested imports). Substantial quantities have been offered for sale in southern China markets. | *US reported imports of 127 live specimens in 2000 and of 11 in 2001 (TRAFFIC North America, 2004).* |
| **Hong Kong:** *Malayemys* was initially one of the more common species in trade, but it disappeared completely from visible trade from 1995-1999. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|

**Other information**

**Threats**

Many *Malayemys* populations are exploited for export to international markets for use as food. In some places eggs are collected for local consumption. Capture for release at temple ponds for Buddhist merit-making involves large numbers of animals. Drowning in fishing nets, habitat deterioration and loss from pollution are also potential threats.

**Conservation, management and legislation**

**Cambodia:** Recently, freshwater turtle consumption, use and export were prohibited. The species is known to occur in one protected area.

**Indonesia:** *Malayemys* is not protected by domestic legislation and is considered a fishery resource. However, annual harvest quotas are established. The species is not confirmed to inhabit protected areas.

**Lao P.D.R.:** *Malayemys* is not protected.

**Malaysia:** State fisheries legislation in Kelantan can be interpreted to protect *Malayemys*. State legislation in Perlis, Kedah and Terengganu apparently does not cover the species. Exports of freshwater turtles from Peninsular Malaysia are regulated. Occurrence of *Malayemys* in protected areas has not been confirmed.

**Myanmar:** *Malayemys* is listed as a protected species.

**Thailand:** All forms of exploitation are prohibited. No substantial populations have been confirmed in protected areas.

**Vietnam:** Export of all native turtle species is prohibited. Trade in wildlife and animal parts is restricted. The species occurs in some protected areas.

**China:** Under Notice of Strengthening the Trade Management on Turtles and Tortoises, all commercial imports of turtles from Cambodia, Indonesia and Thailand, including *Malayemys subtrijuga*, were suspended in 2001. All imports of turtles into China must be accompanied by export permits or certificates from the exporting country.

No population monitoring for the species is known to have been carried out, to be in progress or preparation in any of the range States.

**Vietnam:** *No legal trade has been permitted since April 2000 (Anon., 2000).*

**Similar species**

The head of the species resembles that of *Cuora amboinensis* (CITES Appendix II), but the shell differs.

*The species is a reasonably distinctive member of the family Emydidae Guinea (Wermuth and Mertens, 1961, updated Obst 1996), a large family of which three genera and 13 species are currently included in Appendix II and seven species in Appendix I.*

**Captive breeding**

Successful captive breeding of the species has not been confirmed. Eggs obtained from the wild can be incubated and the hatchlings can be raised without significant losses, but few adults have survived in captivity long

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| enough to produce eggs as *Malayemys* is highly susceptible to diseases, parasites and stress when maintained in captivity. | |
| **Other comments** | |
| Inclusion of *Malayemys subtrijuga* in CITES Appendix II has been widely advocated, notably following the Workshop on Conservation and Trade of Freshwater Turtles and Tortoises in Asia, held in Cambodia, 1999. | |

**Reviewers:** P.P. van Dijk, TRAFFIC Southeast Asia.

**Ref. CoP13 Prop. 18**

## Inclusion of the genus *Notochelys*, currently known to contain the single species Malayan Flat-shelled Turtle *Notochelys platynota* in Appendix II. Proponent: the United States of America.

**Ref. CoP13 Prop. 19**

## Inclusion of the Malayan Flat-shelled Turtle *Notochelys platynota* in Appendix II. Proponent: Indonesia.

**Note:** Two proposals are considered together in the following analysis. One is for a single species, the other for the higher taxon of which that species is currently the only recognised representative. The supporting statements provided for the two proposals are the same. The higher taxon has been proposed for listing because taxonomy in freshwater turtles is unstable and it is likely that the current single species may be split into two or more species in the future. Although such a change would be automatically incorporated into the listings in the CITES Appendices (provided the new taxonomic source were accepted by the Nomenclature Committee), this would not necessarily be the case in national legislation implementing CITES and other trade regulations. A higher taxon listing is intended to help mitigate this problem and avoid future confusion in national legislation and enforcement.

**Summary**: The Malayan Flat-shelled Turtle *Notochelys platynota* is a medium-sized freshwater turtle and is the only currently recognised member of the genus *Notochelys*. It occurs in Brunei Darussalam, Indonesia, Malaysia, Singapore, Thailand, and possibly also in Myanmar and Vietnam. It mainly occurs in shallow waters in lowland rainforest. Like other turtles, this species probably takes a long time to reach maturity, has high juvenile mortality and long adult survivorship. The numbers of populations of *Notochelys* is suspected to have declined and populations have become significantly fragmented in recent years, especially in Indonesia and Malaysia. Collection of specimens for local trade and more recently for export to East Asia appears to have been a significant factor in this decline. Trade in *Notochelys* in food markets in southern China has developed recently, reaching a reported peak of 2 000-3 000 kg daily in 1999. Although there are no indications of significant illegal trade, numbers of *Notochelys* several times the equivalent of the total annual export quota from Indonesia have been seen on a single day in one large market in China. The species is also reportedly threatened by habitat loss and damage caused by logging and conversion of forests to other land uses. There are no known records of captive breeding. IUCN classifies the species as Vulnerable on the basis of declining populations. The proponent seeks inclusion of *Notochelys spp.* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a criteria A and Bi on the grounds that if international trade is not strictly regulated, the species will meet the criteria for inclusion in Appendix I in the near future and that harvesting of specimens from the wild will exceed, over an extended period, the level that can be continued in perpetuity.

**Analysis**: Available information suggests that the species meets the criteria for inclusion in Appendix II, on the basis that populations are known or are suspected to have declined and to have become significantly fragmented in recent years (Resolution Conf. 9.24, Annex 2a, Criterion Bi). Collection of specimens for international trade is increasing, is believed to have significantly depleted populations and is likely to be unsustainable. Much of the international trade in Asia in non-CITES-listed turtle species is not recorded to genus or species level, so it is likely that recorded trade in this species does not reflect actual levels. Enforcement may be challenging because of the similarity between *Notochelys* and *Cyclemys* spp. No *Cyclemys* species are currently included in the CITES Appendices.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| *Notochelys platynota* is the only species in the genus *Notochelys*. | |
| **Range** | |
| Brunei Darussalam, Indonesia, Malaysia, Singapore, Thailand and possibly Myanmar and Vietnam. *Notochelys* has often been confused with *Cyclemys* and historical records from Myanmar and Vietnam might be in error. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **IUCN Global Category** | |
| Vulnerable (VU A1cd+2cd). | *VU (IUCN Red List 2003).* |
| **Biological and trade criteria for inclusion in Appendix II** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| The number of populations of *Notochelys* is known or suspected to have declined and populations have become significantly fragmented in recent years. Although historically collected mainly for local consumption, more recently, the species has become sought after for export to East Asia. Collection pressures have intensified and extended into areas where the species was not collected previously. Increased illegal trapping is taking place in some protected areas in Peninsular Malaysia. Logging roads allow easy access by trappers and traders. In China, numbers equivalent to the total annual quota of Indonesia have been seen on a single day in one large market. | *Few data concerning reproduction are available. A 20.5 cm female contained a clutch of three eggs (Philippen, 1988).*<br><br>*No information is available on growth and survival rates in nature, age and size at maturity, maximum age and reproductive lifespan, or number of clutches per female per year (van Dijk, 2004).* |
| **Brunei Darussalam:** There is little information on the population; the species was rarely encountered 1995 in a survey of the Batu Apoi forest. | |
| **Indonesia:** *Notochelys* has declined considerably from being extremely common in the late 1980s to being reasonably common in 2000. Without further control on trade, Indonesia's native freshwater turtles, including *Notochelys spp.,* were predicted in 2000 to decline. | |
| **Malaysia:** Historically, *Notochelys* was one of the most commonly seen freshwater turtles, but was reported as rarely seen by the 1990s, except in prime habitat, where intensive surveys occasionally or frequently found it. | ***Malaysia:*** *Although Boulenger (1912) states that the species was one of the most commonly seen in Peninsular Malaysia, it is possible that he was confusing* Notochelys *with* Cyclemys*; the latter is still common, but the former may never have been particularly abundant (Moll, 2004).* |
| **Singapore:** *Notochelys* was considered 'uncommon' in 1992. | |
| **Thailand:** The species has been listed as 'Vulnerable' by the Government. | *The US reported imports of 56 specimens in 2000 and of 115 in 2002 (TRAFFIC North America, 2004).* |
| **China and Hong Kong:** The trade in *Notochelys* in food markets in southern China has developed recently. By 1999, trade in live specimens peaked at levels of 2 000-3 000 kg daily. This figure does not include specimens dying during the transport, with mortality considered high; similar trade levels were noted in 2000. *Notochelys* was consistently present in the food trade in Hong Kong in 1998-1999. A survey of three food markets in southern China and one turtle trader in Hong Kong between October 2000 and October 2001 observed 2 685 specimens offered for sale. | |
| **Other information** | |
| **Threats** | |
| Traditional collecting of *Notochelys* for food by rural people throughout much of its range appears to have depleted populations in many areas. Selective logging may be affecting this species. Large-scale conversion of forests to palm-oil plantations and other land uses rapidly reduce available habitat in Peninsular Malaysia. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Conservation, management and legislation** | |
| **Brunei Darussalam:** *Notochelys* is not specifically listed as protected. Hunting and collecting of wildlife are prohibited in wildlife sanctuaries.<br><br>**Indonesia:** Has implemented an export quota system.<br><br>**Malaysia:** State fisheries legislation in Johore, Kelantan and Negeri Sembilan can be interpreted to protect the species; coverage under Malacca State legislation is unclear. Exports of freshwater turtles from Peninsular Malaysia is regulated. The species is unprotected in Sarawak and Sabah.<br><br>**Myanmar:** *Notochelys* is not listed as protected.<br><br>**Singapore:** Legally protected.<br><br>**Thailand:** Exploitation is prohibited.<br><br>The species occurs in a number of protected areas.<br><br>China's Notice of Strengthening the Trade Management on Turtles and Tortoises suspended commercial imports of all turtles from Indonesia and Thailand, including *Notochelys,* in 2001. Export permits or certificates must accompany turtle imports in China. | |
| **Similar species**. | |
| The species is very similar to members of the genus *Cyclemys* and the genera have been widely confused in the literature. | *No* Cyclemys *species is currently listed in the Appendices.* |
| **Captive Breeding** | |
| *Notochelys* is difficult to maintain in captivity and few animals survive long term even with the best care. No records of captive breeding appear to exist. | |
| **Other comments** | |
| Inclusion of *Notochelys platynota* in CITES Appendix II has been widely advocated, notably following the Workshop on Conservation and Trade of Freshwater Turtles and Tortoises in Asia, held in Cambodia, 1999. | |

**Reviewers:** P. P. van Dijk, E. Moll, TRAFFIC Southeast Asia.

## Inclusion of the genus *Amyda* currently known to contain the single species Southeast Asian Softshell Turtle *Amyda cartilaginea*, in Appendix II. Proponent: United States of America.

**Summary**: The Southeast Asian Softshell Turtle *Amyda cartilaginea* is a medium to large-sized freshwater turtle that can grow up to 83 cm in length. It is one of between 23 and 45 species in the family Trionychidae, all of which superficially resemble each other. It inhabits freshwater bodies, such as lowland rivers, ponds and canals. Like other turtles, this species probably takes a long time to reach maturity, has high juvenile mortality and long adult survivorship. It is found in Brunei Darussalam, Cambodia, India, Indonesia, Lao P.D.R., Malaysia, Myanmar, Singapore, Thailand and Vietnam. Population declines are reported from all range States except India (where its occurrence is very limited), Cambodia and Myanmar, where information is lacking, and Brunei Darussalam. Recent exploitation pressures, apparently resulting mainly from demand for international trade, are believed to have caused extensive and range-wide population depletions. The species is the most heavily traded, wild-harvested Asian freshwater turtle, and is legally exported in large numbers from Indonesia to China. There were also mass exports from Vietnam to China until the mid-1990s when trade volumes declined, probably due to depletion of stocks through over-harvesting. Large quantities of *Amyda* have been reported as illegally exported from Cambodia, Indonesia and Lao P.D.R. to China and Vietnam in recent years. The species is also believed to be adversely affected by domestic consumption and habitat damage. IUCN classifies *A. cartilaginea* as Vulnerable. The proponent seeks inclusion of this species in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a criteria A and Bi on the grounds that if international trade is not strictly regulated, the species will meet the criteria for inclusion in Appendix I in the near future, and that harvesting of specimens from the wild will exceed, over an extended period, the level that can be continued in perpetuity.

**Analysis**: The available information suggests that the species meets the criteria for inclusion in Appendix II (Resolution Conference 9.24, Annex 2a, Criterian Bi) on the basis that international trade is known or may have a detrimental impact on the population by exceeding sustainable levels. Populations are in decline and international trade has been identified as the main cause.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| *Amyda cartilaginea* is the only species currently included in the genus *Amyda*.<br>Synonyms: *Trionyx cartilagineus, Trionyx phayrei, Trionyx ornatus, Trionyx nakornsrithammarajensis.* | |
| **Range** | |
| Brunei Darussalam, Cambodia, India, Indonesia, Lao P.D.R., Malaysia, Myanmar, Singapore, Thailand, Vietnam. | |
| **IUCN Global Category** | |
| VU A1cd + 2cd | *IUCN Red List 2003.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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**Biological and trade criteria for inclusion in Appendix II**

**B) Harvesting for international trade has, or may have, detrimental impact on population**

**(i) exceeds sustainable yield; (ii) reduces population to *potentially* threatened level**

Known population declines have occurred in all range States except India, where it has a very localised occurrence, Brunei Darussalam and Cambodia. Population and trade data indicate that the species has been subject to increasing exploitation pressures with population declines across its range. The species is the most heavily traded wild-harvested Asian turtle. All animals over 15 cm shell length are taken.

**Brunei Darussalam:** There are no indications of significant exploitation for international trade.

**Cambodia:** Legal export of freshwater turtles ceased in 2000. By 1999, quantities greatly exceeding legal exports were believed to be illegally exported, mainly to Vietnam. Recent enforcement of strengthened protective legislation appears to have reduced the illegal trade.

***Indonesia:*** *Reported softshell exports amounted to*
*358 927 animals in 1998, mainly to China and Hong Kong. The species has also been illegally exported in large numbers. Between November 1993 and October 1994, Hong Kong trade statistics recorded imports from Indonesia that were about six times the total annual Indonesian quota at the time. In Sumatra, stocks were apparently depleted by 1989 and in 2000 the trade was reported as declining by two-thirds, indicating increasing scarcity of the species.*

***Lao P.D.R.:*** *In 1997 harvest for export to Vietnam was described as expanding and populations in accessible areas as depleted. Extensive illegal harvest and export of freshwater turtles to Vietnam and China were reported in 2000. Lao P.D.R.'s wildlife regulations state the species as threatened with extinction if hunting is not controlled.*

**Malaysia:** The most widely consumed turtle in Malaysia. Fewer *Amdya* softshells were observed in northern markets in 1989-1990 than during the 1970s. In 2000, likely population declines were noted in areas accessible to collectors. Demand is thought to be endangering the species in Sarawak. 8 773 wild-caught animals were exported in the first 10 months of 1999.

**Myanmar:** No information is available on population trends though the species may be threatened by unsustainable harvests. It is known to be harvested for export to China and Thailand, but numbers are unknown.

**Singapore:** *Amyda* was described as uncommon and declining in 1990. The population is highly localized and not known to be exploited.

***Thailand:*** *The species has been in great demand for national consumption. Since the 1970s, its supply has declined. Although it is widespread, there are few, if any, large populations. Harvesting has been so intensive that by 1995, most*

Males may not reach sexual maturity until about 50 cm carapace length (Moll, in Meylan *et al.,* in press), although they may be recognisable as males at a smaller size (Kitana, 1998). Females may reach sexual maturity at a size of almost 40 cm carapace length. Nutaphand (1979) claimed that under favourable conditions females can mature in 20 months, but this appears very rapid and only possible in captivity.

Females can lay three or four clutches per year, the clutch size varying from five to 30 eggs (Nutaphand, 1979; Kiew, 1987; Moll and Khan, 1990). In India gravid females have been found to contain up to 18 eggs (Pawar and Choudhury, 2000).

***India:*** *No recorded evidence of organised international trade in Mizoram, where the species was recently discovered. However, extensive trade for local consumption does exist and as Mizoram lies on the Indian border, some level of unorganised transboundary trade can be expected (Choudhury, 2004).*

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| *specimens came from Myanmar, Lao P.D.R. and Cambodia.* Amyda *has not been recorded in recent illegal trade.*<br><br>**Vietnam:** *Amyda* has been in high demand for national consumption. There were mass legal exports to China until the mid-1990s, since when the trade has occurred only in low and declining volumes, probably as a result of over-harvesting.<br><br>**China:** *Amyda* is one of the most common turtle species imported, 292 500 specimens were imported from 1998-1999. | |

**Other information**

**Threats**

| | |
|---|---|
| Collection of the turtles for export for consumption appears to be the major threat to this species across its range. Other threats include harvesting for domestic consumption, wetland drainage, construction of reservoirs and flood defence structures. Small juveniles are occasionally traded in the domestic and international pet trade. | *Small numbers were reported as imported into the USA, during 2000–2002 (16 live specimens and 300 kg of shell products) (TRAFFIC North America, 2004).*<br><br>*This species has been observed for sale in markets in Cambodia and Myanmar (TRAFFIC Southeast Asia, 2004).* |

**Conservation, management and legislation**

| | |
|---|---|
| The species occurs in protected areas in India, Indonesia, Lao P.D.R., Malaysia, Singapore, Thailand and Vietnam.<br><br>All range States with domestic legislation protecting the species make efforts to implement these protective measures, though turtles often remain a low priority.<br><br>China's Notice of Strengthening the Trade Management on Turtles and Tortoises suspended commercial imports of turtles from Cambodia, Indonesia, and Thailand in 2001. Export permits or certificates must accompany turtle imports into China.<br><br>No specific population monitoring efforts are known in any of the range States.<br><br>**Brunei Darussalam:** No legal protection.<br><br>**Cambodia:** Wild animals including freshwater turtles cannot be exploited, transported or their products served in restaurants. Export became illegal in 2000.<br><br>**Indonesia:** The only range State that has implemented a quota system for the species. It is considered a candidate for national protection by law.<br><br>**Lao P.D.R.:** Hunting is permitted during the non-breeding season, but only for food and not for sale or exchange.<br><br>**Malaysia:** Legislation may cover *Amyda* in some States, but not all. Exports of freshwater turtles from Peninsular Malaysia are regulated by the Department of Wildlife and National Parks of Peninsular Malaysia. In Sarawak all soft-shelled turtles are legally protected.<br><br>**Myanmar:** The species is listed as a protected species.<br><br>**Singapore:** It is protected both as a native species and under the *National Parks Act,* which prohibits taking animals from protected areas.<br><br>**Thailand:** It is protected from exploitation and additional | ***India:*** *An effort is being made to place the species in its* Wildlife (Protection) Act *schedule list. The schedule prohibts domestic trade and export (Choudhury, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| legislation prohibits removal from protected areas.<br><br>**Vietnam:** Prohibits the export of all native wildlife including freshwater turtles. | |
| **Similar species** | |
| Amyda cartilaginea is similar to all other species of Amyda spp. but on closer inspection has some distinguishing features. | *All softshell turtles in the family Trionychidae superficially resemble each other so that it may be difficult for enforcement officers to distinguish this species from others in trade (TRAFFIC Southeast Asia, 2004). Taxonomy in the family is very unsettled, with anything from around 23 to 45 species recognised, occurring in Asia, Africa, North America and New Guinea (Wermuth and Mertens, 1961, updated Obst 1996; UNEP-WCMC Species Database, consulted 17 July 2004). Currently four species in the family are included in Appendix I, two genera and one species in Appendix II and one species in Appendix III.* |
| **Captive breeding** | |
| Large-scale commercial farming was attempted in Singapore and Thailand. Captive reproduction has only succeeded in large ponds within the natural range. The species has a slower growth and annual reproductive output than the Chinese Softshell Turtle *Pelodiscus sinensis*, and captive breeding of this species cannot compete financially with the higher productivity of the latter species. | |
| **Other comments** | |
| Inclusion of *Amyda cartilaginea* in CITES Appendix II has been widely advocated, notably following the Workshop on Conservation and Trade of Freshwater Turtles and Tortoises in Asia, held in Cambodia, 1999. | |

**Reviewers:** B.C. Choudhury, P.P. van Dijk, TRAFFIC Southeast Asia.

**Ref. CoP13 Prop. 21**

## Inclusion of the family Carettochelyidae in Appendix II. Proponent: United States of America.

**Ref. CoP13 Prop. 22**

## Inclusion of the Pig-nosed Turtle *Carettochelys insculpta* in Appendix II. Proponent: Indonesia.

**Summary**: The Pig-nosed Turtle *Carettochelys insculpta* is an unusual freshwater turtle having a thick protruding snout, found in Australia, Indonesia and Papua New Guinea. It is the only currently recognised member of the family Carettochelyidae. It grows up to over 56 cm in length and inhabits rivers, including estuaries, grassy lagoons, swamps, lakes, waterholes and mangroves. Females lay eggs on sandbanks in the middle and lower reaches of rivers, on sandy shores of river delta islands and on coastal beaches. Like other turtles, this species takes a long time to reach maturity, has high juvenile mortality and long adult survivorship. Populations are believed to have declined over the past few decades in Papua New Guinea, although concrete data are lacking. In Indonesia population trends are poorly known. Although there are some indications of adverse impacts on the species from habitat damage in Australia, the main factor believed to be affecting this species is human harvest of eggs and adults, mainly for local consumption. Harvest appears to have intensified recently, at least in Papua province, Indonesia. This intensification is believed to be driven in part by the aim of supplying hatchlings to the international pet trade; the species has been found offered for sale in China, Hong Kong, Malaysia and Thailand and imported into the USA. The species is currently classified as Vulnerable by IUCN. The proponents seek inclusion of *C. insculpta* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a, criteria A and Bi on the grounds that if international trade is not strictly regulated, the species will meet the criteria for inclusion in Appendix I in the near future and that harvesting of specimens from the wild will exceed, over an extended period, the level that can be continued in perpetuity. An identical proposal has been submitted for inclusion of the family Carettochelyidae.

**Analysis**: In the absence of overall population trend data, or information on the impact on populations of collection for international trade, it is unclear whether *C. insculpta (*and therefore the family Carettochelyidae) meets the criteria for inclusion in Appendix II. Harvest has been reported as being at a high or very high levels in some areas, in some cases for decades, and is suspected to be depleting populations and unlikely to be sustainable in the long term. Available evidence indicates that the main driver of that harvest is domestic consumption, with an unknown proportion of eggs harvested being reared for export of hatchlings. The species is highly distinctive and is therefore unlikely to cause identification problems in enforcement should it be listed in Appendix II.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Taxonomy** | |
| | Carettochelys insculpta *is one of the world's most taxonomically distinct turtle species. It is the sole surviving species of a family that was widespread in the Tertiary period. As such it is of considerable interest to scientists and conservationists (Georges, 2004).* |
| **Range** | |
| Australia, Indonesia (Papua province), Papua New Guinea. | |
| **IUCN Global Category** | |
| Vulnerable (VU A1bd). | *VU. (IUCN Red List 2003).* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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**Biological and trade criteria for inclusion in Appendix II**

**B) Harvesting for international trade has, or may have, detrimental impact on population**

**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level**

Harvest pressures have escalated greatly in recent decades to levels widely perceived as endangering the species over much of its range, particularly in New Guinea. The species' mass nesting habits render it extremely susceptible to overcollection.

**Australia:** *Carettochelys* is harvested for domestic consumption by some Aborigines, but egg harvesting has not been reported.

**Papua New Guinea:** *Carettochelys* is widely and heavily exploited for its meat and eggs and is an important component of the subsistence economies of local peoples. Exploitation of riverine resources including *Carettochelys* has increased during the last 20 years. Export and domestic trade of the species is not allowed. Illegal trade of live animals from the southern border to traders from Merauke, Papua province, where these animals join those of Indonesian origin to enter the global pet trade has been reported. Populations of *Carettochelys* have historically been abundant, but appear to have declined over the past few decades. Populations in the Kikori River District were described as severely depleted from 1973-1993.

**Indonesia:** Egg collection has expanded massively along the Vriendschap River, Merauke Regency, Papua province. In the Merauke Regency, annual collection was recently estimated at 1.5-2 million eggs. Many eggs are consumed locally, but some are incubated and the hatchlings sold for the pet trade. The legality of trade in incubated hatchlings is unclear. In the absence of clear documentation of sustainable management, this trade is generally considered illegal and traded animals are confiscated. Specimens destined for export to China and Singapore have been confiscated. Population levels and trends are not well known. *C. insculpta* has been described as 'abundant locally' but 'vulnerable.'

**Malaysia:** Up to 12 post-hatchling *Carettochelys* were regularly seen during visits to pet and aquarium shops in Petaling Jaya and Kuala Lumpur during 2000-2001.

**China and Hong Kong:** A survey from October 2000 to October 2001 of five pet shops in Hong Kong and one pet market in Guangzhou, China found 354 occurrences of *Carettochelys* on sale as pets.

**Thailand:** In 1999, surveys in Bangkok showed that most pet reptile and several aquarium traders offered *Carettochelys* for sale (from three to 15 per trader).

*Individual females produce two clutches in a nesting season, and do not reproduce the following year, thus in any given year only half the females nest (Georges* et al*., 2000). Individual clutches contain between seven and 20 eggs (Tjaturadi, 1999; Georges* et al*., 2000; van Dijk, 2004).*

*Animals grow relatively slowly, reaching maturity at a carapace length of about 30-34 cm, which on the Daly River of Australia requires 14-16 years in the case of males and 20-22 years in the case of females (Heaphy, in Cann, 1998). Estimated age at maturity was thought to be about 10 years for the Vriendschap River population (Papua Province) (WWF Sahul Bioregion, 1999). No growth rate data are available for other populations. Longevity of the species is not known (van Dijk, 2004).*

*The international trade in this species is likely to be much higher than indicated in the examples provided. Most aquarium shops in Peninsular Malaysia offer this species for sale (TRAFFIC Southeast Asia, 2004).*

***Indonesia:*** *According to Samedi and Iskandar (2000), the annual collection of 1.5-2 million eggs apparently referred to in the proposal was illegal. In 1998, some 500 000 eggs were collected along the Vriendschap River for hatching and illegal export to Taiwan, Province of China, China and Singapore, being declared as fish. A field study that same year recorded 84 000 eggs harvested (apparently for national utilisation) in a two-month period in Irian Jaya despite its protected status, and that juveniles were also collected for trade. Tepedelen (2004) reports that collectors estimate that they harvest between 8 000 and 15 000 eggs in Irian Jaya each nesting season for hatching and onward sale to international markets.*

C. insculpta *is one of the most common species in the pet markets in Malaysia, Singapore and Thailand that is sourced from Indonesia. Hundreds of specimens have been seized at Jakarta International Airport this year (2004), indicating a continuing international demand. The detection rate is believed to be very low. (TRAFFIC Southeast Asia, 2004).*

***Malaysia:*** *The species is very common in pet and aquarium stores (TRAFFIC Southeast Asia, 2004).*

***Singapore:*** *TRAFFIC surveys undertaken in April 2002 found only two individuals openly displayed for sale. However, dealers claimed to be able to supply the species and said that it is now often traded using the Internet (TRAFFIC Southeast Asia, 2004).*

***USA:*** *Approximately 200 specimens were illegally exported to the USA in a single shipment from Singapore in 2003 (TRAFFIC Southeast Asia, 2004).*

*Relatively small numbers (less than 50 per year) were reported as legally imported into the USA between 2000 and 2002 (TRAFFIC North America, 2004).*

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|

**Other information**

**Threats**

| | |
|---|---|
| The main threat appears to be harvest of eggs and adults for consumption, with a proportion of the eggs incubated and the hatchlings exported for the international pet trade. Subsistence use of the species by local communities has a long history and used to occur only at moderate levels. Harvest levels have escalated greatly in some areas, where it presents a clear threat to the species' survival. | Previous population declines have been reported for the Alligator Rivers Region, including Kakadu National Park, Australia, owing to habitat and nest damage caused by introduced water buffalo combined with continued Aboriginal harvest of adult turtles, although the population is now thought to be recovering. The species has temperature-dependent sex determination, and as such may be particularly sensitive to climate change (Georges, 2004). |

**Conservation, management and legislation**

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| **Australia:** Exploitation of native species including *Carettochelys insculpta* is prohibited by State and Federal legislation, except use by Aborigines. Export and domestic trade of the species is not allowed. However legislation does not extend to habitat destruction affecting *C. insculpta*. Considerable protection is given to the species in Kakadu National Park.<br><br>**Indonesia:** *C. insculpta* has national protection status, utilisation is only allowed with special permission for research and captive breeding. No capture or export quotas are set. Indonesian legislation allows for incubation in captivity of wild-collected eggs (ranching). It has been recorded in Wasur National Park.<br><br>**Papua New Guinea:** Trade in turtles is strictly regulated by law. *C. insculpta* is a restricted species and export is limited to only a few animals for scientific purposes.<br><br>There are no ongoing population monitoring programs for the species in Papua province or Papua New Guinea. | *Collection permits in Papua Province (Indonesia) are allocated at district level. As an example, each trader In Vriendschap River was given an egg collection quota of 80 000 in 2001 (TRAFFIC Southeast Asia, 2004).*<br><br>*Clarification is required regarding prohibitions on harvest in Indonesia, and whether export prohibitions in the same country apply to hatchlings produced through ranching.* |

**Similar species**

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|---|---|
| | *There are no similar species, even at the level of Family (Georges, 2004).* |

**Captive Breeding**

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|---|---|
| WWF Sahul Bioregion has conducted a study to identify the possibilities for future captive breeding aiming to reduce harvesting pressure on wild populations. | |

**Other comments**

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|---|---|
| Inclusion of *C. insculpta* in CITES Appendix II has been widely advocated, notably following the Workshop on Conservation and Trade of Freshwater Turtles and Tortoises in Asia, held in Cambodia, 1999. | |

**Reviewers:** P.P. van Dijk, A. Georges, TRAFFIC North America, TRAFFIC Southeast Asia.

## Inclusion of the Roti Snake-necked Turtle *Chelodina mccordi* in Appendix II. Proponents: Indonesia and United States of America.

**Summary**: The Roti Snake-necked Turtle *Chelodina mccordi* is a small freshwater turtle (22 cm long). It is restricted to an area of about 70 $km^2$ in the central highland plateau of Roti Island, off the tip of western Timor, Indonesia. It inhabits lakes, swamps and rice paddies. The species is included in the genus *Chelodina*, of which the other nine or so members occur in Australia and New Guinea (Indonesia and Papua New Guinea). Like other turtles, this species probably takes a long time to reach maturity, has high juvenile mortality and long adult survivorship. The sole reported threat to the species is over-harvesting for the international pet trade; collection was apparently so intense in the late 1990s that the species was regarded as commercially extinct by 1999. However, exploitation reportedly continues and occasionally specimens appear in the pet trade in Jakarta, Indonesia, and elsewhere, although it is not clear that these are definitely wild-caught. A substantial number exist in captivity, but although specimens have been bred for nearly 20 years, raising hatchlings is very demanding. IUCN considers *Chelodina mccordi* Critically Endangered. The proponents seek inclusion of the *Chelodina mccordi* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a criteria A and Bi on the grounds that if international trade is not strictly regulated, the species will meet the criteria for inclusion in Appendix I in the near future and that harvesting of specimens from the wild will exceed, over an extended period, the level that can continue in perpetuity.

**Analysis**: The available information suggests that the species meets the criteria for inclusion in Appendix II on the basis that the international trade is known to be unsustainable (Resolution Conf. 9.24, Annex 2a, Criterion Bi). The population has declined significantly, apparently exclusively as a result of harvest for the international pet trade. It already appears to meet the criteria for inclusion in Appendix I. The species closely resembles *Chelodina novaeguineae* and, to a lesser extent, other members of the genus *Chelodina,* none of which is included in the Appendices, therefore identification may present problems with enforcement.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| The species was previously considered an isolated population of *Chelodina novaeguineae*. | |
| **Range** | |
| Indonesia. | |
| **IUCN Global Category** | |
| Critically Endangered (CR A1d, B1 + 2e). | *CR (IUCN Red List 2003).* |

### Biological and trade criteria for inclusion in Appendix II

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|---|---|
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| Considered Critically Endangered to nearly extinct in the wild. The species is known only from two or three separate populations within its area of occupancy on Roti Island off western Timor, Indonesia. The species probably already meets the biological criteria for inclusion in Appendix I. Intensive collection for international markets is the sole cause for its decline. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **B) Harvesting for international trade has, or may have, detrimental impact on population**<br>**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| The species was collected so intensively for five years after it was first described in 1994 that it was considered commercially extinct by Indonesian traders in 2000. However, exploitation reportedly continues and occasional specimens still appear in the pet trade in Jakarta and elsewhere.<br><br>The species was offered for sale in the western trade for USD 2 000 per animal in the late 1990s. | *All available reproductive information derives from captive animals. Females usually lay clutches of eight to nine eggs, but the range is six to 14. One or two, occasionally up to four, clutches may be laid by a female in a year (Freytag, 1984; Grossmann, 1988; Rhodin, 1994; Hoveling, 2000; Schultz, 2000; van Dijk, 2004).*<br><br>*USA recorded imports from the wild: in 2000, two dead bodies from Indonesia; in 2001, four live from Indonesia (TRAFFIC North America, 2004).* |

## Other information

**Threats**

The single reported threat to the species' survival has been intensive harvest for the international pet trade. The human population density on Roti is modest and occupied with subsistence farming. There was no industry or significant land development on the island by 1995.

**Conservation, management and legislation**

The protection status of the species under Indonesian legislation is not clear. It is not specifically listed as a protected species. However it was previously listed as an isolated population of *C. novaeguineae* and this species is nationally protected. Freshwater turtle species that are neither listed under national protection status, nor in the CITES Appendices are managed as a fishery resource. This management is delegated to the Fishery Service, which is under local government and manages species through establishing capture and export permits. Expertise in conservation is limited at the local level, leading to instances of over-exploitation. Indonesia set harvest annual quotas of 135 animals in the period 1998-2001.

Field research on the species, including population assessment, has been called for by the Turtle Conservation Fund and preliminary monitoring work on the species is currently being initiated.

**Similar species**

*The species was formerly considered a separate population of* Chelodina novaeguineae, *which it closely resembles. There are around eight other species in the genus* Chelodina, *occurring in Australia, Indonesia (Irian Jaya (Indonesia) and Papua New Guinea (Wermuth and Mertens, 1961, updated Obst 1996; UNEP-WCMC Species Database, consulted 17 July 2004). None is currently included in the CITES Appendices.*

**Captive Breeding**

There are unconfirmed reports of one or more commercial breeders based in Bali, Indonesia producing small numbers of captive-born juveniles for export. After *C. mccordi* was first described, it was realised that nearly all animals in captivity in Europe and America referred to as *C. novaeguineae* were actually *C. mccordi*. A substantial founder population exists in captivity in

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| Europe and North America and specimens have been bred for nearly 20 years. Captive reproduction is not consistent even within established breeding groups, and raising hatchlings is very demanding. Captive breeding by private hobbyists in Europe and the United States is aimed primarily at maintaining the species in captivity long-term, with possible options for re-introduction if and when appropriate. The European studbook for the species co-ordinates captive-breeding. | |
| **Other comments** | |
| Inclusion of *Chelodina mccordi* in CITES Appendix II has been widely advocated, notably following the Workshop on Conservation and Trade of Freshwater Turtles and Tortoises in Asia, held in Cambodia, 1999. | |

**Reviewers:** P.P. van Dijk, TRAFFIC Southeast Asia.

## Transfer of the Cuban population of the American Crocodile *Crocodylus acutus* to Appendix II for the purposes of ranching. Proponent: Cuba.

**Summary**: The American Crocodile *Crocodylus acutus* is widely distributed from southern Florida, USA, through Mexico, Central America and the north of South America, to the islands of Cuba, Jamaica and Hispaniola. The species is classified as Vulnerable by IUCN. No population of *C. acutus* has yet been transferred to Appendix II for ranching purposes, although commercial captive breeding facilities in Colombia and Honduras are registered with the CITES Secretariat. In addition, Cuba has established six farms for domestic experimental egg collection programmes. This proposal seeks to transfer the Cuban population of *C. acutus* to Appendix II for ranching purposes, to allow these experimental facilities to rear wild-collected eggs and export products from ranching. *C. acutus* is widely distributed throughout Cuba and nesting has been reported at 32 locations. In some areas it is sympatric with the Endangered Cuban Crocodile *Crocodylus rhombifer.* Overall figures for total population size, area of distribution and rate of decline are not available for the Cuban population of *C. acutus*. However, nest surveys in the area to be targeted for egg collection indicate that the population size there may be between 6 000 and 7 500 individuals. The results of population monitoring in the area indicates that an experimental egg extraction programme conducted since 1987 has not had a negative impact on the population. The proposed egg collection would be limited to a well-studied area known to be of importance for the population in Cuba (Delta del Cauto). In this area, as in the experimental phase, eggs from 40% of nests encountered will be collected, the majority taken from areas where natural survival would naturally be low. Approximately 1 500 to 2 000 juveniles would be raised each year. The farms would be overseen by government officers and 10% of the revenue from the sale of products would go to the National Environmental Fund. The supporting statement includes information on the current stock levels of the experimental facilities; on proposed marking procedures; levels of illegal trade; and on monitoring and management procedures to ensure that harvests do not have a negative impact on the population.

**Analysis**: Following Resolution Conf. 9.24, the population of *C. acutus* in Cuba would not appear to meet the criteria for inclusion in Appendix I. The overall population in the country is not small and appears to be stable. Its area of distribution as defined in the guidelines in Resolution Conf. 9.24 is not restricted or fragmented.

With regard to precautionary measures, the proposal appears to meet the requirements of Resolution Conf 11.16 on ranching. Reviewers concur that the proposal is biologically robust and the proposed egg harvest appears to be within sustainable limits as indicated during the experimental collection period, although the proposed population monitoring scheme could be improved. With regard to the likely biological and economic success of the operation, Cuba has run an experimental facility for some time and there is no reason to suppose that if the species is transferred to Appendix II success will diminish. In terms of benefiting the wild population, a proportion of the revenue from skin sales will go the National Environment Fund. The marking system appears robust, although reviewers question the ability to differentiate between skins produced through ranching and those produced from commercial captive-breeding units. However, if the population is transferred to Appendix II, it is not clear that such differentiation will strictly be necessary, although it would aid verification of the success of the ranching operation. Cuba describes an inventory system that will be established to track the movement of animals into and out of the facility. Cuba does not intend to return any animals to the wild – indeed, due to the risks of introducing disease, this practice is less common than previously.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| Species range: Belize, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, USA, Venezuela. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **IUCN Global Category** | |
| Vulnerable A1ac; Cuban population - Vulnerable (IUCN 2000). | *2003 IUCN Red List 2003.* |
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| At the global level, populations are considered severely depleted in five out of 17 countries where the species occurs. Within the Cuban archipelago, *C. acutus* has been recorded at 60 localities, with nesting recorded at 32 localities. In 12 out of 13 areas studied, the population abundance figures are reportedly relatively high. To date, the best-studied populations are those of the Zapata Swamp, the Isle of Youth and the Delta del Cauto. The last of these is the only one to be targeted for extraction of eggs for the ranching programme. Extrapolating from the number of nests, the population of Delta del Cauto is estimated to number some 6 000 –7 500 individuals. | *The IUCN SSC Crocodile Specialist Group (CSG, 2004) believes that the information indicates that the population is secure.* |
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| In Cuba, terrestrial wetlands cover 14 828 $km^2$ and *C. acutus* occurs within these areas. There are also some 5 300 $km^2$ of mangrove that constitute potential habitat for the species. *C. acutus* has been recorded in some 40% of this. Areas of occupancy include the Zapata swamp, which covers some 4 520 $km^2$, and the Delta del Cauto, which roughly covers 626 $km^2$. | *The IUCN SSC Crocodile Action Plan reports that substantial populations of the species are found in Cuba and that Cuba, with Belize, may be one of the remaining strongholds of the species (Ross, 1998).* |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| From 1990–2002 surveys in the Delta del Cauto indicate that the population is likely to be stable, or even slightly increasing. | |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| In the period 1980-1987, only 26 specimens of *C. acutus* were recorded as being in illegal trade. Between 1985 and 1993 six farms for this species were established within Cuba. The main purpose of the farms has been to provide specimens for re-introduction to the wild and to develop the capacity for commercial breeding.<br>There is a demand on the international market for “classic” skins, which includes those from *C. acutus*.<br>It is expected that the 2 000 animals already in the six farms will form the nucleus for the initial trade. Numbers will be augmented by annual egg collection from the wild. | *CITES-reported exports of* C. acutus *from Cuba in the years 1993-2002 included five live and three bodies.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|

**Precautionary Measures**

**Resolution Conf 11.16. Paragraph b: any proposal must satisfy the following criteria:**

**bi) the programme must be primarily beneficial to the conservation of the local population;**

**bii) all products including live specimens must be identified and documented;**
**biii) appropriate inventories, harvest level controls and mechanisms to monitor the wild population;**
**biv) adequate numbers must be returned to the wild if necessary;**

i) National legislation requires that 10% of the value of exports is deposited in the National Environmental Fund, which supports conservation management programmes.

ii) See next section.

iii) See sections below.

iv) As a rule specimens reared under this programme will not be returned to the wild.

*During the experimental phase of the project, specimens were returned to the wild and it is not clear to what extent this was necessary to maintain the population throughout the experimental egg harvest period.*

*The CSG (2004) have warned of the dangers of disease introduction associated with re-introduction programmes and thus recommend that animals are not returned to the wild.*

**Resolution Conf 11.16. Paragraph c:**

**ci) details of its marking system;**

The marking system will allow clear differentiation between specimens derived from the wild and from farms.

Individuals in the farms will be marked by tail clipping. Animals for live export will be marked with microchips and skins will be marked according to the Universal Tagging System provisions of Resolution Conf. 11.12.

*It appears that Cuba intends to continue captive breeding production at the farms whilst also undertaking ranching. Reviewers have indicated concern over the ability to distinguish captive produced skins from ranched skins. They recommend that Cuba consider registering its Appendix-I commercial captive-breeding facilities in the Secretariat's register (CSG, 2004).*

**cii) list of types of products**

Cuba does not have tanning facilities and would expect to export conserved skins. Smaller pieces of skins would be used in the local handicrafts industry. Exports will include: skins, meat, live animals and tourist souvenirs.

**ciii) marking methods for products and containers entering trade;**

See above.

**civ) an inventory of current stocks**

The six farms currently have a stock of 7 955 live animals. There is no stockpile of skins. Registers of animal identification numbers will be kept at all farms. Within two years of approval of the proposal, an electronic inventory will be developed and maintained. Provisions have been made for regular inventory of the farms.

**Resolution Conf 11.16. Paragraph d proposals should not be approved unless they contain the following:**

**di) evidence that taking from the wild will have no detrimental impacts on wild populations**

During the experimental ranching programme developed between 1987 and 1996 an average of 1 400 newly hatched young were harvested per year in the Delta Del Cauto Faunal Reserve. The 100% increase in population density from 1994 to 1997 is thought to indicate that the earlier harvest did not negatively impact the population.

It is proposed that all eggs from 40% of nests found per year will be collected for the ranching programme (in general nests average 25 eggs per nest), providing 1 500-2 000 eggs each year. This percentage is the same as the proportion of nests that are lost each year due to stochastic events and behaviour associated with high nesting density. Nests will be preferentially harvested from areas where nesting success is lowest.

*According to Manolis (2004) the historical egg harvests do not appear to have had an impact on the wild* C. acutus *population, and the programme as outlined is highly unlikely to do so in the future. He notes that the last surveys carried out in the Delta del Cauto were apparently in 2002.*

*Noting that 38% of nests are apparently lost to stochastic causes and that the proposed harvest is of the same order, TRAFFIC North America (2004) questions whether the loss to the population through harvest and natural mortality may become additive.*

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| Cuba has already invested significant effort in research programmes in the area where the proposed harvest will take place. Baseline information is now available on: population density, numbers and distribution of nests, factors affecting nesting success, etc. Continuing this research will allow the impacts of harvesting to be assessed. Annual nest monitoring will allow collection rates to be managed adaptively. | |
| **dii) an assesment of the likely biological and economic success of the ranch;** | |
| The experimental ranches have been in operation for a number of years and appear to be biologically successful. It is estimated that the state-run ranches will generate around one million pesos (ca. USD 48 000) per annum as well as increasing local employment opportunities. | |
| **diii) assurance that all stages will be humane.** | |
| Inspection of ranching premises will be undertaken. Premises will conform to veterinary regulations. Methods of humane slaughter are described by the proponent. | |
| **div) evidence to show that the programme is beneficial;** | |
| See above. | |
| **dv) assurance that criteria shall continue to be met,** | |
| Cuba proposes annual reporting on the ranching programme to the CITES Secretariat. | |

**Other information**

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| **Threats** | |
| The main threats are indirect threats to the mangrove ecosystem. | |
| **Conservation, management and legislation** | |
| CITES is implemented in Cuba through *Law 81 of Environment,* the *Forest Law*, the *Customs Law, CITMA Resolution 87 of 1996 and Resolution 111 of 1996.*<br><br>A number of Government bodies, such as forestry and fisheries agencies and customs, assist with implementing the legislation. Two institutions are responsible for running the farms. In addition, the most important C. *acutus* habitats are included within the protected areas network.<br><br>Management measures are covered above. | *TRAFFIC North America (2004) calls for more information on the enforcement system in general.*<br><br>*Ongoing monitoring of the wild population (nest counts, spotlight surveys) should be a clear priority. In their comments, the CSG suggested in 2004 that night surveys be used as well as nest counts for population monitoring.* |
| **Similar species** | |
| The endangered Cuban Crocodile *Crocodylus rhombifer* and the introduced Spectacled Caiman *Caiman crocodiluys fuscus* also occur in Cuba. Egg collection will not be carried out in the Zapata peninsula where the ranges of *C. rhombifer* and *C. acutus* overlap. | |
| **Captive breeding** | |
| Honduras and Colombia have registered commercial captive breeding facilities for this species.<br>. | |
| **Other comments** | |
| | *Reviewers concur that the proposal is very strong and well justified biologically. However, they note that the* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | *plans to continue commercial captive breeding are problematic and recommend the registration of the captive operations in the Secretariat's register, so that the origin of skins is quite clear (Thorbjarnasson, 2004; Velasco, 2004; CSG, 2004).* |

**Reviewers:** IUCN SSC Crocodile Specialist Group, D. Jelden, C. Manolis, J. Thorbjarnasson, TRAFFIC North America, A. Velasco.

## Transfer of the Namibian population of the Nile Crocodile *Crocodylus niloticus* from Appendix I to Appendix II. Proponent: Namibia.

**Summary**: The Nile Crocodile *Crocodylus niloticus* was included in CITES Appendix I in 1977 in response to unregulated skin harvesting which had an impact on populations throughout Africa. Since the 1980s populations in many regions of Africa have increased and the species is no longer listed by IUCN as Threatened. The Namibian population is shared with neighbouring range States, whose populations (apart from that of Angola) are already included in Appendix II (all originally transferred to Appendix II for ranching purposes). Comprehensive data on the Namibian population is not yet available, as a proposed population survey has been delayed by flooding, but should be available at CoP13. The population estimate from protected areas, which cover 10% of the species' range in Namibia is 1 500 individuals. The distribution area is reportedly stable and the population increasing although no evidence is provided. Namibia has one CITES-registered commercial captive breeding facility, which exports live animals and skins marked using the Universal Tagging System. Annually around five trophies from the wild are exported and an average of five problem animals are killed, but their skins destroyed. To increase incentives for crocodile and wetland conservation, Namibia proposes to provide communal conservancies with opportunities to earn revenue from the use of wild crocodilians. However, no information is provided on likely future harvest levels or the agreement of harvest levels with neighbouring countries for shared populations. The proponent seeks to transfer the Namibian population to Appendix II under Criterion B 2b of Annex 4 of Resolution Conf. 9.24, on the grounds that the wild population meets the Criteria for inclusion in Appendix II, and an Appendix II-listing is required to facilitate exports in support of Namibia's community-based natural resource management programmes.

**Analysis**: For transfer from Appendix I to Appendix II to take place, Resolution Conf. 9.24 requires that the species should not satisfy the relevant criteria for inclusion in Annex I. At present, pending the delayed population survey there is little information on the status of the Namibian population. If the Namibian crocodile populations are considered as part of a metapopulation shared with its neighbouring range States, the majority of whose populations are already included in Appendix II, then it seems likely that the Namibian population would no longer qualify for inclusion in Appendix I. However, for a transfer from Appendix I to Appendix II to take place, the precautionary measures of Resolution Conf. 9.24 Annex 4 B 2b must be satisfied. With respect to precautionary measure B 2bi) there is no information on the proposed implementation of Article IV, in particular for shared populations; regarding measure B 2bii) appropriate enforcement controls appear to be in place.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| The population under consideration is shared with Angola, Botswana, Zambia and Zimbabwe. | |
| **IUCN Global Category** | |
| IUCN listed the species as Vulnerable in 1990, but it has not been listed subsequently. | Not listed. |

### Biological criteria for inclusion in Appendix I

**A) Small wild population**

**(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour**

| | |
|---|---|
| No total population estimate is available – it is anticipated that a population survey delayed by flooding will be available at CoP13. The three sub-populations (Caprivi Region, Kavango River, Kunene River) are shared with neighbouring range | *It seems likely that crocodile densities will be higher in protected areas than elsewhere in the country.*<br><br>*Given that the Namibian populations are shared with neighbouring range States, the Namibian population can* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| States, so the proponent questions whether a national population estimate is meaningful. At least 1 500 crocodiles are estimated to occur in Namibia's protected areas, which account for less than 10% of the known distribution area. | *be considered part of a wider metapopulation shared among these States. On this basis, it seems unlikely that the Namibian population can be regarded as small.* |
| **B) Restricted area of distribution**<br>**(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| Wetland areas are viewed as a critical habitat in Namibia, accounting for only 3% of land area, but are under increasing threat from dam constructions. Plans for the creation of more protected areas mean that the overall protected area network for this species will double in the next two years.<br>There has been no significant reduction in range in Namibia within historic times. | *No references or data are presented. The area of suitable habitat for this species is relatively restricted within Namibia but plans to increase the protected area system should safeguard the population. In addition, when considered part of the larger regional population, it is unlikely that this criterion is met.* |
| **C) Decline in number of wild individuals**<br>**(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| During the 1960s and 1970s, populations in the north-eastern portion of the range were significantly reduced due to unmanaged harvest for trade and the species was listed as a protected species. By the mid-1980s, populations were recovering and by the late 1980s, were reported as pests. Protected area staff indicate that the populations within the Caprivi protected areas have been increasing since 1999. | *No references or detailed population numbers are provided in the supporting statement, due to the delay in undertaking population surveys caused by flooding.*<br>*The IUCN SSC Crocodile Specialist Group (CSG) notes that in Zimbabwe, the Caprivi population has shown a decline in recent years, and cautions that the Management Authorities of this shared population, which includes Namibia, should bear this in mind.* |
| **Trade criteria for inclusion in Appendix I**<br>**The species is or may be affected by trade** | |
| Currently there is a limited trophy hunt of five animals per year. An average of 5.6 problem animals has been killed per year between 1998-2003; the skins are generally destroyed.<br>Namibia has one registered commercial captive breeding facility for this species. Over 99.9% of exports are from this farm.<br>All skins are marked with the Universal Tagging System. There are no recent records of illegal trade. | *According to CITES gross export data for the period 1993-2002, Namibia exported 8 752 live animals and*<br>*1 898 skins, most of which were reported as captive-bred, as well as 11 trophies and 54 skulls.* |
| Namibia plans to provide incentives for crocodile conservation by distributing trophy hunting revenue to a network of communal conservancies. | *The CSG (2004) seeks clarification on the proportion of total revenue that would accrue to communities.* |
| **Precautionary Measures**<br>**B2a: CoP satisfied with: B2bi) Implementation of Article IV Annex 4, Res Conf 9.24** | |
| Namibia attempts to deal with problem crocodiles through trophy hunting.<br>An annual quota is currently set for trophy hunting of five animals. Namibia will establish a trophy export quota for 2005. | *It is not clear if the numbers of animals for trophy hunting will remain at the average level of 5.6 problem animals per year, or whether a higher managed harvest will be taken.*<br>*It is not clear where crocodiles will be hunted – within or outside protected areas (CSG, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| Namibia only intends allowing trophy exports. | *Namibia has indicated that its Nile Crocodile populations are shared, but has not indicated whether collaborative management will be sought with neighbouring range States.* |
| Field staff within protected areas and communal conservancies routinely patrol the areas and record wildlife sightings. | *If field staff undertake regular patrols, the CSG (2004) questions why the data collected cannot be used to produce a baseline index on distribution and abundance.* |
| **B2b: CoP satisfied with: B2bii) appropriate enforcement controls Annex 4, Res Conf 9.24** | |
| Namibia will use the Universal Tagging System to control skin exports. | |

**Other information**

**Threats**

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|---|---|
| Threats include: displacement by human activities, seasonal flooding and conflict with humans. The species is regarded as a pest by livestock farmers. Records indicate that since 2000, in Namibia, a total of 35 people and 173 livestock have been killed or injured by crocodiles. | |

**Conservation, management and legislation**

| | |
|---|---|
| The species is protected under Namibian legislation and may only be hunted with a permit. It is not classified under any threat category in Namibia, but is provisionally assessed as "peripheral", implying a certain vulnerability due to its reliance on wetlands.<br>Eleven national populations of the species in Africa are already included in Appendix II. | *With regard to species management, the CSG (2004) notes that there is no information on how the survey results will be used once obtained, for example to vary the quota.*<br>*The CSG (2004) also comments that information on the frequency of surveys in future would be useful, and questions whether the results will be used to set a percentage harvest.* |

**Similar species**

| | |
|---|---|
| None. | |

**Captive breeding**

| | |
|---|---|
| Namibia has one CITES-registered captive breeding farm, which has averaged annual exports of 193 skins and 972 live animals from 1992-2003. The current stock of this farm includes 48 breeding adults; 150 three-year olds; 1 064 two year olds and 1 369 five-month olds. | |

**Other comments**

| | |
|---|---|
| Most neighbouring populations (apart from that of Angola) are already included in Appendix II. Botswana has indicated support for the proposal.<br>Namibia indicates that it has experienced difficulties with the export of even a minimal number of trophies due to stricter domestic measures in some importing States.<br>Namibia maintains that an Appendix-II listing for this species is required to facilitate exports in support of the country's community-based natural resource management. | *In 1993, the species was re-classified under the US* Endangered Species Act *as Threatened. This provides for the import of trophies from managed schemes (USFWS, 1993).*<br>*The CSG (2004) notes that changing the Appendix-I status of the species may not affect all stricter domestic measures.* |

**Reviewers:** IUCN SSC Crocodile Specialist Group, TRAFFIC East/Southern Africa.

## Maintenance of the Zambian population of the Nile Crocodile *Crocodylus niloticus* on Appendix II subject to an annual export quota of no more than 548 wild specimens (including hunting trophies and problem animal control). Proponent: Zambia.

**Note:** The Zambian population of the Nile Crocodile *Crocodylus niloticus* was transferred to Appendix II in 1985 to allow legal trade under a set quota of 2 000 skins, persuant to Resolution Conf. 5.21 on Special Criteria for transfer from Appendix I to Appendix II (replaced in 1989 by Resolution Conf 7.14 on Special criteria). At that time the national population was estimated to number 150 000 individuals. Under Resolution Conf. 5.21, changes to quotas had to be approved by the CoP. In 1987, the Zambian population was maintained in Appendix II, subject to an export quota for 2 000 wild skins and the following quotas for ranched skins: 1 350 in 1987; 3 600 in 1988 and 6 200 in 1989. At CoP7, Resolution Conf. 5.21 was replaced by Resolution Conf 7.14 which required that any population transferred to Appendix II in 1985 should be reviewed and if retained in Appendix II, this should be under the conditions of Resolution Conf. 3.15 (or Resolution Conf. 1.2). In 1989 the population was maintained in Appendix II persuant to Resolution Conf. 3.5 on ranching (without an export quota). Resolution Conf 3.15 lays out conditions for the transfer to Appendix II and requires that Parties include sufficient detail in their reports for the Secretariat to ascertain that the Criteria continue to be met. However, Resolution Conf. 3.15 was later repealed by Resolution Conf 10.18, which in turn was repealed by Resolution Conf 11.16. It is not entirely clear whether a Resolution that is repealed by a subsequent one is replaced by that subsequent Resolution, or if its requirements simply fall away. Arguably, the populations transferred under the earlier Resolution Conf. 3.15 are now subject to the requirements of Resolution Conf. 11.16, although this is open to interpretation. Resolution Conf. 11.16 recommends (in paragraph g) that Parties submit information on changes in management to the Secretariat for consultation with the Animals Committee to determine whether they substantially alter the original ranching proposal. Zambia has established a number of facilities to undertake both captive breeding for egg production and ranching of eggs collected from the wild; eight such facilities were in operation in 2003. Zambia proposes an annual quota of 548 wild specimens including wild harvested adults for trophy hunting and problem animal control, based on a take of 4% of the population size estimated from the major crocodile habitats. Arguably the instigation of an annual wild harvest of 548 individuals is a substantive change in relation to recent management, and merits consideration by the Parties. However, under Resolution Conf. 11.16, the proposal would have had to have been submitted 330 days before the CoP.

**Summary**: The Nile Crocodile is widely distributed in Zambia occurring in all major rivers and lakes. The total area of distribution is estimated at 12 640 km of shoreline length, and populations, although fragmented, are thought to be secure within protected areas. Surveys in 2003 of major areas of distribution indicate a minimum population size of 13 700 individuals. Estimates in the Luangwa area indicate that crocodile density per river km was 13.6 in 1996 and 22.2 in 2003. There is no evidence to indicate that the current ranching and breeding programme are adversely affecting the wild population. The major threat to populations is thought to be from unregulated killing in areas of human-crocodile conflict. The proposed harvest will be taken outside national parks and is designed to generate incentives to encourage local communities to tolerate crocodilians. Although trophy hunting is a major revenue earner, the proponent states that the majority of skins produced from hunting will enter commercial trade. Skin exports will be controlled through physical tagging. Enforcement of the trophy hunting and harvesting system will involve the continued policing of crocodile habitats and monitoring of population trends. There is little indication of how the proposed quota will be distributed between the various areas of crocodile occurrence and little evidence of regular monitoring, other than in the Luangwa area.

**Analysis**: According to the Secretariat's assessment, Zambia does not need the approval of the Parties to make the proposed changes. However, on the evidence presented above, it can be argued that the *C. niloticus* population of Zambia should be subject to the provisions of Resolution Conf 11.16, which repealed Resolution Conf. 3.15, and that the instigation of an annual wild harvest quota of 548 individuals could be deemed a substantive change under the provisions of Resolution Conf. 11.16. Reviewers suggest that the proposed level of harvest may be too high to be sustained from areas outside the protected area network and that sufficient precautionary measures have not yet been developed to manage the harvest for the long term benefit of Zambia.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| Zambia. | |
| **IUCN Global Category** | |
| Not Listed. | *1996 – Lower Risk Least concern (Ross, 1998). Currently not threatened (IUCN 2003).* |
| **Biological status** | |
| A portion of the national population occupying the major areas of crocodile habitat is estimated to number 13 700 individuals.<br>The species is widely distributed within Zambia, and the main refuge comprises 12 640 km of shoreline.<br>Generally the Nile Crocodile is considered secure as evidenced by numerous reports of human–animal conflict. In the Luangwa area, estimates of crocodile density increased from 13.5 per river km in 1996 to 22.2 per river km in 2004. | *In 1985, when Zambia's Nile crocodile population was transferred to Appendix II, the population was estimated to number 150 000 animals. However the basis for that estimate was not clear. The proposal at that time did refer to a density of around 12 animals per km in the Luangwa area, according to the proponent, not dissimilar to the density estimated in that area in 1996.*<br>*The Crocodile Specialist Group (CSG) seeks clarification as to how the population estimate of 13 700 was calculated.*<br>*Details on survey methodology and confidence limits on the density estimates are not presented in the supporting statement, making it difficult to assess whether or not the populations can confidently be said to have increased. The only high density population is found within the Luangwa area, much of which is covered by national parks. However, the middle of the Luangwa River forms the border of the National Park, so harvesting under licence would be legal in the ''Open Area'' across the river from the Park.*<br>*The CSG notes that incidences of human-crocodile conflict could have increased due to an increasing human population or better reporting, and seeks further information on these aspects.* |
| **Trade criteria** | |
| **Use and trade** | |
| Currently, seven crocodile farms operate in Zambia, which produce eggs through captive breeding and rear juveniles from wild-collected eggs. The only forms of wild harvest are of eggs and mature breeding adults for the farms. According to crocodile farm records, the number of wild-collected eggs increased from 17 400 in 2000 to 28 100 in 2003, and the number of captive produced eggs increased from 28 400 to 40 700 during that same period. The number of breeding adults remained at around 250 males and around 2 000 females.<br>Zambia has no information to indicate that egg collection is affecting the wild population. According to the proponent, numerous reports of human-crocodile conflict and problem animal control suggest that the population is on the increase (14 lives lost in 2002; 24 lives lost in 2004).<br>Trophy hunting has not been allowed since the mid-1990s due to inadequate status information on which to base a quota. | *There is some confusion in the document over the numbers of farms. In recent years, it appears that the number of facilities where captive breeding occurs decreased from eight to six. There is, however, an additional facility which only ranches wild-collected eggs and in the 2002/2003 season there was apparently a seventh captive breeding farm.*<br>*According to CITES gross export data for the period 1993-2002, Zambia's average annual exports included 44 685 kg of meat, 9 153 skins, 23 trophies, and sizeable quantities of other skin pieces. The great majority of meat and skins was reportedly from ranching or captive breeding sources. Trophy exports averaged seven per annum from 1997-2002. Zambia did not submit quotas for crocodilian exports for inclusion in the voluntary list of national export quotas published by the CITES Secretariat for the years 2000-2004.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Actual or potential trade impacts** | |
| The proposed quota represents only 4% of the population in the major habitats, and so should be non-detrimental to the survival of the species. | *No information is presented on the proposed distribution of this harvest between the different populations. There is little evidence of plans to monitor the effects of the proposed harvest.*<br><br>*Craig et al. (1992) calculated a theoretical rate of population increase of 8% for the Nile Crocodile, but noted that this may be more akin to a rate of population recovery and concluded that the potential rate of increase under ideal conditions will be less than 3% per annum. The CSG indicates that a 1-2% harvest rate would be more realistic.*<br><br>*The quota level was calculated on the basis of harvesting 4% of the populations surveyed, but the majority of the 2003 survey appears to have been conducted in protected areas where crocodile hunting and collection is apparently not allowed.* |
| **Proposed use and enforcement measures** | |
| Trophy hunting is expected to boost the income of local communities and thus provide benefits for conservation. The Zambian Wildlife Authority (ZAWA) will retain 100% of the hunting concession fees. With respect to the hunting rights fees, 50% will go to the local community; 40% will be retained by ZAWA; and 10% will go to the Government of Zambia.<br><br>The quota will be enforced through strict licensing procedures and field enforcement activities and ZAWA will tag the skins.<br><br>An inventory of the current captive and ranched animals is provided in the supporting statement. | *It is not clear what proportion of the 548 quota animals will be used for trophy hunting and what proportion for the commercial skin trade. CSG (2004) remarks that it would be useful to have an indication of the value of the proposed fees to the local community. It is not clear whether any form of harvest regulation, such as minimum size limits and closed seasons, will be instituted. The CSG is concerned that Zambia intends taking animals in Open Areas, where Nile Crocodile densities are already very low.* |

**Other information**

**Threats**

| | |
|---|---|
| The major threat is thought to be conflict with humans resulting in unregulated killing of problem animals if no incentives are provided to act otherwise. | |

**Conservation, management and legislation**

| | |
|---|---|
| Crocodiles in Zambia are recognised as a game animal and can only be hunted under licence. Ownership certificates are required when in possession of crocodile parts.<br><br>Crocodiles cannot be hunted or collected within national parks or wildlife sanctuaries.<br><br>Zambia is currently drafting a “Policy and Management Plan for Crocodile Management”.<br><br>The proposed quota will be controlled through strict licensing procedures and field enforcement activities and ZAWA staff will tag skins. | *The CSG (2004) notes that more information on harvest restrictions and management is required and questions whether, for example, the wild harvest will be subject to size limits.* |

**Similar species**

**Captive breeding**

| | |
|---|---|
| Six to seven farms in Zambia produce eggs through | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| captive breeding. | |
| **Other comments** | |
| Zambia indicates that the revenue from the proposed harvest will provide incentives for those inhabiting areas where human–crocodile conflict occurs. | *The CSG (2004) cautions that the proposal appears to be for an excessive number of animals, based on the information presented in the supporting statement, but trusts that points raised can be clarified.*<br>*They also note that egg collection for ranching has been ongoing for some time and question why this has not provided the necessary incentives.* |

**Reviewers:** Crocodile Specialist Group, TRAFFIC East/Southern Africa.

## Inclusion of *Uroplatus* spp. in Appendix II. Proponent: Madagascar.

**Summary**: Leaf-tailed Geckos *Uroplatus* spp., are very distinctive lizards endemic to Madagascar. Eleven species are currently recognized, one of these very recently described. They are nocturnal and found in a range of forest habitats. Body sizes range from 7.5 cm to 33 cm. In captivity, females lay clutches of two eggs at a time. Little is known about population size, status or overall distribution of any of the species; none has been assessed for the IUCN Red List. Some species (e.g. *U. alluaudi, U. guentheri* and *U. malahelo*) appear to have restricted distributions; others such as *U. fimbriatus, U. lineatus* and *U. henkeli* are more widespread, although generally have fragmented ranges. All species are undoubtedly affected by ongoing forest loss in Madagascar. Whilst some species can apparently tolerate some degree of habitat degradation, they are reportedly generally found in secondary habitats in low densities only. All are *de facto* game species under Malagasy law, so that collection is restricted in season and requires a permit. Most are reported from one or more protected areas. Leaf-tailed Geckos have recently become popular amongst reptile hobbyists. Malagasy export data indicate a growth in exports in the past few years, with over 22 000 individuals of six species (*U. ebenaui, U. fimbriatus*, *U. henkeli, U. lineatus, U. phantasticus* and *U. sikorae*) reported as exported in the years 2001-2003. *U. guentheri* and *U. pietschmanni* are also evidently currently in trade, although probably in small quantities. The vast majority of individuals in trade at present are undoubtedly wild-collected. Some captive breeding has been reported in Madagascar, although this is likely to be the result of wild-collected gravid females laying eggs. Captive breeding has also been reported in countries outside Madagascar, although again only in very small numbers. Some collection for trade undoubtedly takes place in protected areas, where it is illegal. There have been reports of local declines owing to over-collection, although concrete data are missing. There is no known local use of the species.

According to the proponent, *U. alluaudi* may already meet the criteria for inclusion in Appendix I, but as information is uncertain, is proposed for inclusion in Appendix II under Annex 2a Criterion A. *U. guentheri, U. malama, U. malahelo* and the *U. ebenaui* complex are also proposed for inclusion in Appendix II according to Annex 2b Criterion A. The other species are proposed for inclusion in Appendix II in line with Resolution Conf. 9.24, Annex 2b Criterion B.

**Analysis**: There is insufficient information to determine whether the genus *Uroplatus* merits inclusion in Appendix II under Resolution Conf. 9.24. However, several of the species appear in trade in reasonable numbers, some are evidently of localised distribution and all are likely to be adversely affected by ongoing habitat loss. It is at least possible that collection for export has a detrimental effect on some species. *Uroplatus* species are very distinctive and unlikely to be confused with any other animals, so that enforcement should not pose particular problems.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| The genus *Uroplatus* is endemic to Madagascar and currently contains 11 species, including the recently described *U. pietschmanni*. | |
| **Range** | |
| Madagascar. | |
| **IUCN Global Category** | |
| Not listed. | *Not assessed.* |

**Biological and trade criteria for inclusion in Appendix II**

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

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|

**B) Harvesting for international trade has, or may have, detrimental impact on population**

**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level**

*U. alluaudi*: reported from the Montagne d'Ambre National Park and Forest Reserve in northern Madagascar, at 850-1 000 m altitude.

*U. ebenaui*: occurs at 0-400 m altitude in the north and northwest; it tolerates some degree of habitat degradation although population densities in disturbed habitats are reported to be very low. It is recorded from at least two protected areas.

*U. fimbriatus*: has a fragmented distribution in eastern Madagascar.

*U. henkeli*: only occurs in the north and northwest, at low altitudes; the species reportedly occurs in some secondary habitats but at very low population densities. It is recorded from at least two protected areas.

*U. lineatus*: the species is quite widespread in eastern Madagascar, but with a fragmented distribution. It reportedly prefers wet, coastal forests, rich in bamboo, is tolerant of some degree of habitat degradation and is found in at least two protected areas. Population densities reportedly tend to be low.

*U. phantasticus*: occurs in forests in eastern Madagascar and does not adapt well to secondary habitats.

*U. sikorae:* is found in lowland areas and has been recorded from at least two protected areas.

Exports recorded in Malagasy government data:

| **Year** | **2001** | **2002** | **2003** | **Total** |
|---|---|---|---|---|
| *U. alluaudi* : | 0 | 0 | 37 | 37 |
| *U. ebenaui* : | 1 410 | 673 | 1 096 | 3 179 |
| *U. fimbriatus* : | 1 427 | 1 081 | 1 262 | 3 770 |
| *U. guentheri* : | 0 | 0 | 0 | 0 |
| *U. henkeli* | 1 292 | 966 | 1 134 | 3 392 |
| *U. lineatus* | 947 | 698 | 688 | 2 333 |
| *U. malama* : | 0 | 0 | 0 | 0 |
| *U. malahelo* | 0 | 0 | 0 | 0 |
| *U. phantasticus* | 1 770 | 1 331 | 1 973 | 5 074 |
| *U. sikorae* | 1 532 | 1 347 | 1 829 | 4 708 |
| **Total** | **10 379** | **8 098** | **9 985** | **22 493** |

Most exports are reported as going to the USA, Europe and Japan.

*Raxworthy (2004) notes species in the genus appear to live at low densities in the wild and observes that several species, including* U. alluaudi, U. malama, U. malahelo *and* U. pietschmanni, *have very restricted distributions.*

*The following observations are from Jenkins and Rakotomanampison (1994):*

U. ebenaui *(the smallest species) occurs quite widely in the east, north and north-west (the Sambirano domain). Population densities of 140 individuals per hectare have been recorded at Montagne d'Ambre in the far north, although this may be unusually high.*

U. fimbriatus *(the largest species and the world's largest gecko) has a similar range to* U. ebenaui *and appears to be commoner in northern parts of its range. Densities of 7-13 individuals per hectare were recorded at Montagne d'Ambre in December 1991-January 1992.*

U. guentheri *has been recorded from the Ankarafantsika Nature Reserve in the west.*

U. lineatus *is quite widespread in the tropical moist forests of the north-east.*

U. sikorae *is very similar to* U. fimbriatus *and has a similar, though apparently fragmented, range. Densities of 13-50 individuals per hectare have been recorded at Montagne d'Ambre*.

U. malahelo *was described in 1994. It is known from a number of sites in southern Madagascar in forests between 200 and 1 200 m altitude, including at least two protected areas (IUCN/SSC CBSG, 2002). It is considered potentially vulnerable to extinction by Raxworthy and Nussbaum (2000).*

*Imported* Uroplatus henkeli, U. fimbriatus, U. lineatus, U. phantasticus, U. ebenaui, U. sikorae *were offered for retail sale in the USA at USD 55 each (TRAFFIC Europe, 2004). 1991-1992 prices (unadjusted) were considerably higher (*U. fimbriatus*: USD 237.50;* U. ebenaui*: USD 187.50;* U. sikorae *and* U. henkeli*: USD 137.50) indicating that smaller quantities were exported at that time (Jenkins and Rakatomanampison, 1995).*

Uroplatus guentheri *is currently (June 2004) offered for sale in Europe and North America at high prices (GBP 234.95, CAN$ 400-450 ea) (TRAFFIC Europe, 2004).* U. pietschmanni *is also now frequently seen in trade (Raxworthy, 2004).*

*Raxworthy (2004) notes that* U. henckeli *populations in Lokobe Strict Nature Reserve on Nosy Be were depleted as a result of several years of (illegal) collecting.* U. ebenaui *is also said to have been collected in this reserve (Andreone* et al., *2003). Raxworthy (2004) reported that Montagne d'Ambre National Park appeared to have been targeted for commercial collection of* U. ebenaui *and* U. alluaudi. *Collection is also suspected to take place in a number of other protected areas. Collectors are likely to target the most accessible sites. Because of the low density at which the geckos typically occur, collection at such sites may be unsustainable.*

**Other information**

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Threats** | |
| Habitat degradation. | *Being largely forest-dependent species, all are likely to be affected by ongoing forest loss in Madagascar (Carpenter, 2004).* |
| **Conservation, management and legislation** | |
| At the national level, the species have no specific protection, although most species do occur in protected areas where collection is prohibited.<br>Population sizes or trends are not monitored and no special conservation measures, e.g. habitat management, are taken. | *All* Uroplatus *species are classified* de facto *as a game species in Madagascar; collection requires a permit and is limited to the period 1 May to the first Sunday in October (Jenkins, 1995). Madagascar has been the subject of the first country-based Significant Trade Review. Under this process, an Action Plan for the Reform of Madagascar's Wildlife Export Trade, addressing CITES-listed as well as non-CITES species, has been agreed by the Malagasy authorities and presented to the Animals and Plants Committees. Recommendations for implementation of the plan have been made by these Committees and mechanisms for implementation are currently being explored*. |
| **Similar species** | |
| Within the genus, *U. alluaudi* and *U. guentheri* resemble each other as do *U. pietschmanni* and *U. sikorae.* | Uroplatus *species are highly distinctive and unlikely to be confused with other genera.* |
| **Captive Breeding** | |
| Successful breeding in captivity has taken place for *U. ebenaui, U. phantasticus, U. sikorae, U. lineatus, U. henkeli* and *U. fimbriatus*, and they were found to adapt well to other food sources than their natural prey. | *In captivity,* Uroplatus *clutch sizes range from two to four eggs, with a possibility of several clutches during the year.* |
| **Other comments** | |
| | *Studies on the status and ecology of* Uroplatus *species in the wild are urgently needed (Carpenter, 2004).* |

**Reviewers:** A. Carpenter, C. Lippai, C. Raxworthy, TRAFFIC Europe.

## Inclusion of Leaf-nosed Snakes *Langaha* ssp. in Appendix II. Proponent: Madagascar.

**Summary**: Leaf-nosed snakes *Langaha* spp. only occur in the forests of Madagascar. Three species are currently recognized: *L. madagascariensis* is widespread; *L. alluaudi* is found in the southwest; and *L. pseudoalluaudi* appears to have a restricted range in the area between Ambilobe and Daraina in the north, an area which is undergoing rapid deforestation. They are arboreal and *L. madagascariensis,* at least, feeds primarily or exclusively on arboreal lizards. There is little detailed information on the biology or status of the three and none has been assessed by for inclusion in the IUCN Red List. None of the species appears to be abundant, and *L. pseudoalluaudi*, of which only two specimens are known, is thought to be particularly rare. The three species are considered attractive because of their very distinctive heads (long nasal protuberances and, in the case of *L. alluaudi* and *L. pseudoalluaudi*, "horns" over the eyes) and are in demand by reptile hobbyists, although the scale of this demand is not clear – their highly specialised diet is likely to limit interest in them. According to Madagascan export figures, between 2001 and 2003, exports of *L. madagascariensis* (including those recorded under the synonym *L. nasuta*) totalled 330 specimens. Recorded exports of *L. alluaudi* numbered 27 specimens in 2002, and there were no recorded exports of *L. pseudoalluaudi.* Some 16 specimens were recorded as exported under *Langaha* spp.. The major importing regions appear to be the USA, Japan and Europe. The proponent seeks inclusion of the genus *Langaha* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a, Criterion B, on the grounds that the species are rarely observed in the wild.

**Analysis**: There is insufficient information to determine whether the three species of *Langaha* meet the criteria for inclusion in Appendix II set out in Resolution Conf. 9.24. One of the species (*L. pseudoalluaudi*) appears to be sufficiently rare that it could conceivably meet the criteria for inclusion in Appendix I, although this species is not currently known to be in trade. *L. alluaudi* appears to have a relatively restricted distribution and is reported in trade; it is at least possible that collection for export may have a detrimental effect on the population. *L. madagascariensis* is widespread but no data are available on population levels. It is in trade in reasonable numbers and it is conceivable that collection for export has at least a locally detrimental effect on the population, although again there are no data to demonstrate this. The species are very different in appearance from any other snakes. Inclusion of the entire genus in Appendix II should not create enforcement problems; inclusion of one or two species in the absence of the others probably would.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| *L. madagascariensis*<br>Synonym: *L. nasuta*<br>*L. alluaudi*<br>*L. pseudoalluaudi* | |
| **Range** | |
| Madagascar. | |
| **IUCN Global Category** | |
| Not listed. | *Not assessed.* |
| **Biological and trade criteria for inclusion in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| *L. madagascariensis*: The species is widespread in forested habitat in Madagascar, although with a fragmented distribution; it reportedly tolerates some | Clutch size of four wild-caught gravid females of *L. madagascariensis* ranged from five to 12 |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| degree of habitat degradation. No information is available on population status. Six specimens were found during seven days of intensive searching in different habitats.<br><br>Recent recorded exports are: 125 in 2001, 48 in 2002 and 164 in 2003; around half of these were recorded as *L. nasuta*. The USA and Japan are the main importing countries.<br><br>*L. alluaudi*: The species occurs in the south-west where it is found in transition forests and thickets, especially on sandy soil and notably in the Mikea forest. Earlier reports (such as by the IUCN Conservation Breeding Specialist Group) of the species in the south and east have not been recently confirmed and may be in error. There is no information available on population status, but only three individuals were found during a two-month inventory in the Mikea forest. The 27 specimens recorded as exported in 2002 to the USA and Europe are thought to have been collected here. No specimens were recorded as exported in 2001 and 2003.<br><br>*L. pseudoalluaudi*: The species is known from only two specimens collected in the area between Ambilobe and Daraina in the north of Madagascar, one in 1996 and one in 1997. The species itself has not been recorded in trade.<br><br>In 2002, 16 specimens were reported as exported under the genus name *Langaha*. | (Krysko, 2003).<br><br>*At least four US dealers in California and Florida offer* L. madagascariensis *for sale (as* L. nasuta*).*<br><br>*All the species are likely to live at low population densities; the two species that are most localised in distribution (*L. alluaudi *and* L. pseudoalluaudi*) are likely to be particularly sought-after by reptile keepers as they are particularly distinctive, with horns over the eyes as well as a nasal protuberance. Demand may be predicted to increase as the species become better known (Raxworthy, 2004). However, as with* Lycodryas citrinus *(also proposed for inclusion in the Appendices), the highly specialised diet (live lizards) of* L. madagascariensis, *at least, is likely to limit its interest amongst reptile-keepers.*<br><br>*US import data indicate slightly higher levels of trade than are recorded in Malagasy export data (TRAFFIC Europe, 2004).*<br><br>*A new locality for* L. pseudoalluaudi *has recently been reported (Raxworthy, 2004).* |

**Other information**

**Threats**

| | |
|---|---|
| Over-collection for export is believed likely to constitute at least a local threat.<br><br>The area where *L. pseudoalluaudi* has been collected is subject to severe deforestation, but habitat destruction is unlikely to be a major threat for *L. alluaudi* in the near future, as the habitat is unsuitable for conversion to arable land or pasture. | *In general, habitat loss is likely to constitute a much more important threat than collection for export (Carpenter, 2004).* |

**Conservation, management and legislation**

| | |
|---|---|
| No population monitoring or management measures have been undertaken or planned for any *Langaha* spp..<br><br>*L. madagascarienis* is found in at least three protected areas, where collection is prohibited.<br><br>The Mikea forest, believed to be the principal habitat of *L. alluaudi,* has been proposed as a protected area.<br><br>*L pseudoalluaudi* has not been found in any protected areas. | *The genus is not specifically named in Malagasy legislation.* Langaha *species are therefore* de facto *game species. Collection requires a permit, and is restricted in season from 1 May to the first Sunday in October (Jenkins, 1995). Madagascar has been the subject of the first country-based Significant Trade Review. Under this process, an Action Plan for the Reform of Madagascar's Wildlife Export Trade, addressing CITES-listed as well as non-CITES species, has been agreed by the Malagasy authorities and presented to the Animals and Plants Committees. Recommendations for implementation of the plan have been made by these Committees and mechanisms for implementation are currently being explored*. |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Similar species** | |
| The species resemble each other to some extent but the genus as a whole is very distinctive and unlikely to be confused with any other. | |
| **Captive breeding** | |
| | *Wild-caught females have laid eggs in captivity that have successfully hatched (Krysko, 2003).* |

**Reviewers:** A. Carpenter, C. Lippai, C. Raxworthy, TRAFFIC Europe.

## Inclusion of *Lycodryas citrinus* in Appendix II. Proponent: Madagascar.

**Summary**: *Lycodryas (Stenophis) citrinus* is a nocturnal tree snake, characterised by its yellow and black stripes and apparently restricted to western Madagascar, where it has been recorded recently only in two protected areas in limestone karst regions. There is little information on its biology; it gives birth to live young and apparently feeds on lizards or frogs. The species has not been assessed under the IUCN Red List. It was considered Data Deficient by a national workshop held in 2001. The species is considered *de facto* a game species in Madagascar; collection requires a permit and has a limited season. Collection in protected areas is illegal. The species has been recorded in international trade as live specimens, although only in limited quantities (19 specimens recorded exported in 2001 and 2002 to the USA and Switzerland, and none in 2003). The proponent seeks inclusion of the species in Appendix II in accordance with Resolution Conf. 9.24. Although not articulated, the proposed inclusion is presumably based on the species meeting Annex 2 Criterion A or Bi on the grounds that the species has a very restricted distribution and is potentially of interest to the hobbyist reptile trade, so that collection for export could be unsustainable, or could reduce populations to the level at which the species merited inclusion in Appendix I.

**Analysis** There is currently insufficient information to determine whether the species meets the criteria for inclusion in Appendix II under Resolution Conf. 9.24. Observed levels of international trade are low and there is no reported local use. However, the species does appear to have a restricted distribution and probably occurs at a low population density. It is very attractive and may become more widely sought-after by reptile-keepers, although its specialised diet means that interest in it is likely to remain limited. It is conceivable that collection for export may, at least locally, have a detrimental impact on the population. The species is distinctive and should not pose identification problems in enforcement.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| Synonym*: Stenophis citrinus.* | |
| **Range** | |
| Madagascar. | |
| **IUCN Global Category** | |
| Not assessed. | *Not listed*. |

### Biological and trade criteria for inclusion in Appendix II

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

| | |
|---|---|
| The species appears to have a restricted distribution, being currently known from only two sites, Tsingy de Bemaraha and Tsingy de Namoroka, both protected areas in limestone karst regions in western Madagascar, covering ca 1 800 km$^2$ in total. There are also two earlier records from non-karst sites near Morondava south of this. | *Much of the tsingy (karst) forest in the two protected areas is very inaccessible.* |
| It appears to have fairly strict ecological requirements, being confined to sheltered, humid forest fragments within the karst, although it may be fairly abundant in suitable habitat. | *Internet searches in 2004 found the species offered for sale on only one site under the invalid name* Stenophis madagascariensis. |
| The species is reportedly sought-after in trade and local people are aware of areas where it can be collected. | *Raxworthy (2004) notes that the species appears, like other snakes, to live at low population densities. He observes that it is very attractive – indeed one of the most striking of all snake species – and believes it likely to be in growing demand amongst reptile-keepers as it becomes better known. However, it is also reported that its specialised diet (live frogs, though also reportedly live lizards) means that it is unlikely ever to be of wide interest to hobbyists (TRAFFIC Europe, 2004).* |
| Malagasy authorities report four live specimens as exported in 2001, 15 in 2002 and none in 2003. The species may be exported under a different name. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **B) Harvesting for international trade has, or may have, detrimental impact on population**<br>**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| Collectors reputedly collect from a limited number of localities, leading to the risk of local reduction in populations. | |

**Other information**

| | |
|---|---|
| **Threats** | |
| Illegal collection is the main threat to *L. citrinus.* | |
| **Conservation, management and legislation** | |
| No population monitoring is known and no legislation specifically protects this species. However, it is currently only known to occur in protected areas, where collection is prohibited (although illegal collection reportedly takes place). | *The species is classified* de facto *as a game species in Madagascar; collection requires a permit and is limited to the period 1 May to the first Sunday in October (Jenkins, 1995). Madagascar has been the subject of the first country-based Significant Trade Review. Under this process, an Action Plan for the Reform of Madagascar's Wildlife Export Trade, addressing CITES-listed as well as non-CITES species, has been agreed by the Malagasy authorities and presented to the Animals and Plants Committees. Recommendations for implementation of the plan have been made by these Committees and mechanisms for implementation are currently being explored*. |
| **Similar species** | |
| The species is very distinctive. | |
| **Captive breeding** | |
| No information available. | *Not listed by the International Species Inventory System (ISIS) under* Lycodryas citrinus. |
| **Other comments** | |
| A Conservation Assessment and Management Plan (CAMP) workshop organised by the IUCN/SSC Captive Breeding Specialist Group in 2001 assessed the species as "Data Deficient". | |

**Reviewers:** A. Carpenter, C. Raxworthy, TRAFFIC Europe.

## Inclusion of the Mount Kenya Bush Viper *Atheris desaixi* in Appendix II. Proponent: Kenya.

**Summary**: The Mount Kenya Bush Viper *Atheris desaixi* is a relatively large arboreal viper with a prehensile tail. It has a distinctive appearance, coloured vivid black and yellow and lacking horns, a unique combination amongst bush vipers. The species is confined to Kenya where it has a restricted range, with only two known populations, both in areas of forest around 1 600-1 700 m above sea level. No population data are available, but the species is thought to be rare and recruitment is thought to be low. Forest destruction on Mt. Kenya is believed to have been detrimental to the species, although recent measures have reportedly resulted in improved forest conditions. It has not been assessed under the IUCN Red List. The Mount Kenya Bush Viper is protected under the Kenya Wildlife Act. The species is apparently in demand from foreign collectors as it is both rare and attractive. Illegal exports have been recorded.
The proposal seeks to include *A. desaixi* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a critera A and B i) and ii).

**Analysis**: Information on the status of the species in the wild and on the impact on wild populations of collection for export is scanty. It is difficult to determine whether the species meets the criteria for inclusion in Appendix II under Resolution Conf. 9.24. However, it does appear to have a very restricted range and limited reproductive potential and to occur in an area that has undergone extensive habitat degradation. It is also known to be in demand overseas and to feature in international trade. It is possible that collection for export has at least a local impact on wild populations and may not be sustainable when coupled with habitat loss and degradation.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| Kenya. | |
| **IUCN Global Category** | |
| Not listed. | *Not assessed.* |
| **Biological and trade criteria for inclusion in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| The species apparently has a restricted range, being known only from two sites in forest at 1 600-1 700 m altitude, one in the Nyambene Hills and one on the south-east part of Mt. Kenya.<br>The frequent interception of smuggled snakes in Kenya is evidence of illegal trade.<br>Twenty-seven specimens were exported by one dealer to the USA between November 1999 and May 2000.<br>The export value of a specimen was USD 250 according to a dealer price list. | *Virtually no work has been done on the species in the field; it probably reproduces once a year, tied in with the rainy season (Spawls, 2004). A litter of 13 young in August has been recorded (Spawls and Branch 1995). Due to the high altitude at which the species lives, a two-year reproductive cycle cannot be ruled out, as in a number of temperate-zone viper species and populations (Herrmann, 2004).*<br>*A visit to the forest around Chuka, south-east Mt. Kenya in the mid-1990s revealed that local "snake-hunters" were specialised in the capture of this species in order to sell specimens to European or American hobbyists. One of these hunters had a number of live specimens in his house, which were very dehydrated. This suggests that due to poor handling, a large number of caught* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | *specimens do not reach their final destination but die on the way (Herrmann, 2004).*<br><br>*Due to its size and rarity in herpetoculture, this species is in high demand. In Germany, specimens of unknown origin (possibly collected and imported from Kenya by private individuals) have repeatedly turned up in private collections (Herrmann, 2004).*<br><br>*The species has been recorded in exports from Tanzania: seven in 1993, 14 in 1994, ten in 1996, and six in 1997. Assuming these were not misidentifications, it is not known whether the specimens were obtained legally from Kenya (TRAFFIC East/Southern Africa, 2004).*<br><br>*Despite clear evidence of illegal trade, it is difficult to assess the level of threat to the species in the absence of population information. However, the level of collection indicated by recorded exports might well give rise to local population declines (TRAFFIC East/Southern Africa, 2004).* |

**Other information**

**Threats**

| | |
|---|---|
| The species has been recorded in areas of high human population density; habitat loss and fragmentation due to agriculture and deforestation are considered major threats, but the exact impacts on the species are not known. | *The main reasons the species is threatened are its restricted range and its desirability as captive specimens as it is rare and attractive (Ashe, 2004; Drewes, 2004).*<br><br>*Current deforestation on Mt. Kenya will be particularly detrimental to the species (Spawls, 2004). A 1999 aerial survey of Mt. Kenya forests established that these forests are heavily impacted by extensive illegal activities (Kenya Wildlife Service, 1999). As a result, a number of policy measures were implemented in late 1999 and 2000. A second forest survey undertaken between 1999 and 2002 found the level of destructive activities had significantly declined (Anon., 2003).* |

**Conservation, management and legislation**

| | |
|---|---|
| The species is protected under the Kenya Wildlife (Conservation and Management) Act, and enforcement measures are strict. It may occur in a protected area (the Mount Kenya Forest Reserve).<br><br>No management measures. | |

**Similar species**

| | |
|---|---|
| No information. | *This species is distinctive, coloured vivid black and yellow and lacking horns, a unique combination amongst bush vipers (Ashe, 2004).* |

**Captive Breeding**

| | |
|---|---|
| Specimens are kept in zoos and private collections. | *Reportedly captive-reared sub-adults have been offered for sale on the Internet at USD 1 200 a pair (Anon., 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | **Other comments** |
| | *All* Atheris *species are rare with restricted distributions and several are in (illegal) trade in different East African countries (TRAFFIC East/Southern Africa, 2004).*<br><br>*Bite cases are very rare or non-existent and the venom is not very potent. Consequently there is no market for anti-venin (Herrmann, 2004). Spawls (2004) confirms that the species is not used for antivenin production as it is not medically important (as far as known), bites may be treated symptomatically and there are no documented deaths or serious injuries to its credit.* |

**Reviewers:** J. Ashe, R. Drewes, H-W. Herrmann, S. Spawls, TRAFFIC East/Southern Africa.

## Inclusion of the Kenya Horned Viper *Bitis worthingtoni* in Appendix II. Proponent: Kenya.

**Summary**: The Kenya Horned Viper *Bitis worthingtoni* has a restricted range in the Central Rift Valley region of Kenya, where it is found in grassland and scrub over 1 500 m altitude. Its main habitat is in prime farming areas, but it appears to favour broken country that is not easily ploughed, and it may be tolerant of livestock farming. No surveys have been made to assess its population status, but the species appears to be rare and has a rather low reproductive potential. It is relatively easy to identify, having small horns over the eyes and a typical viper shape. The species is not known to occur in any protected areas, although at least two national parks within its range have suitable habitat. It is protected under the Kenya Wildlife (Conservation and Management) Act. *B. worthingtoni* has not been assessed for the IUCN Red List. It is rare and attractive and evidently in demand from collectors, at least in Europe. Although export from Kenya is banned, the species has been recorded in international trade and has been offered for sale on the Internet. The proposal seeks to include the species in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a, Criteria A and Bi, ii.

**Analysis**: There is insufficient information to determine whether the species meets the criteria for inclusion in Appendix II. However, the species does have a restricted range, appears to be rare and has a low reproductive potential. It is also in demand by foreign collectors and has been recorded in international trade. It is conceivable that collection for export may not be sustainable, or may be reducing populations to a potentially threatened level.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| | *Work on the phylogeny of the species has led to its being placed in its own subgenus* Kenyabitis *(Lenk* et al., *1999).* |
| **Range** | |
| Kenya. | |
| **IUCN Global Category** | |
| Not listed. | *Not assessed.* |
| **Biological and trade criteria for inclusion in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| The species appears to have a relatively restricted range in which it is found in dispersed and fragmented subpopulations.<br><br>The frequent interception of smuggled snakes in Kenya is evidence of illegal trade.<br><br>A survey in Germany indicated 19 animals illegally imported between May and October 1999.<br><br>A table in the proposal's supporting statement shows 37 specimens imported by the USA, Netherlands and Canada between November 1999 and May 2000.<br><br>The export value of a specimen of the species is quoted as USD 100. | *Due to its size and rarity this species is reportedly in high demand (Ashe, 2004; Drewes, 2004). At least in Germany, specimens of unknown origin (but likely to have been collected and imported from Kenya by private individuals) have turned up in private collections repeatedly (Herrmann 2004). Sub-adults are offered for sale on the internet at USD 1 200 a pair (Anon., 2004).*<br><br>*Virtually no work has been done on the species in the field (Spawls, 2004). No information is available on population status. However Herrmann (2004) states that despite an intensive search, involving local "snake men", over more than five days in different localities only one individual was found indicating the species' rarity. The habitat in which the snake was found was heavily disturbed by livestock, a dense human population and a nearby road.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | The species has a rather low reproductive potential, and is reported to bear 7-12 live young once a year, at the beginning of the rains (Drewes, 2004; Spawls and Branch 1995). However, due to the high altitude at which the species lives, a two-year reproductive cycle, as found in a number of temperate zone viper species and populations, cannot be ruled out (Herrmann, 2004).<br>*Ten specimens were reported as exported from Tanzania in 1993. Unless these are misidentifications, or the species has a much wider range than hitherto recorded, they must have been illegally obtained in Kenya (TRAFFIC East/Southern Africa, 2004).* |

**Other information**

**Threats**

| | |
|---|---|
| Trade is believed to be a threat.<br>Habitat loss and fragmentation is expected to have an increasing negative effect on the survival of *B. worthingtoni*. The extensive use of chemicals in agriculture may affect the species indirectly.<br>However, the species appears to favour broken country, not easily ploughed and might be tolerant to stock farming. | *The small range of the species makes it intrinsically at risk (Ashe, 2004; Drewes, 2004).* |

**Conservation, management and legislation**

| | |
|---|---|
| Protected under the Kenya Wildlife (Conservation and Management) Act.<br>It may occur in at least two national parks.<br>There is no population monitoring or management measures other than enforcement of Kenya wlldilife laws. | |

**Similar species**

| | |
|---|---|
| The Puff Adder *Bitis arientans*, which also occurs in Kenya, is similar. The two species can be differentiated by the small size at maturity of *Bitis wothingtonii* and the horns on its head. | |

**Captive Breeding**

| | |
|---|---|
| No information.<br>Specimens are kept in zoos and private collections. | *The species has bred at least once in captivity (Fleck, 2000).* |

**Other comments**

| | |
|---|---|
| | *Bite cases are very rare or non-existent and the venom is apparently not very potent. Consequently there is no market for anti-venom (Herrmann, 2004).* |

**Reviewers:** J. Ashe, R. Drewes, H-W. Herrmann, TRAFFIC East/Southern Africa, S. Spawls.

## Inclusion of the Great White Shark *Carcharodon carcharias* in Appendix II with a zero annual export quota. Proponents: Australia and Madagascar.

**Summary**: The Great White Shark *Carcharodon carcharias* is a widely distributed species of coastal and offshore shelves in temperate and sub-tropical areas, although mature adults in some areas are probably pelagic for much of the year. Coastal aggregations occur in some areas, with a high proportion of females and juveniles that show site affinity. The species is thought to have local populations with some evidence of migratory behaviour. It is a large (5 m) marine predator and is thought to have a relatively low intrinsic rate of population increase (2.3%), reaching sexual maturity at nine to ten years and producing between two and ten pups once every two to three years, after a gestation period lasting over 12 months. The species is relatively long-lived (23-60 years). The Great White Shark is rare compared to other sharks. Data from a variety of sources indicate local catch or catch per unit effort declines ranging from 60-75% in 36 years to as much as 95% in ten years. Wider studies indicate declines of, for example, over 80% in the Adriatic since the mid-19th century, and around 80% in the Northwest Atlantic between 1986 and 2000, although the methodology behind some of these studies has been questioned. Some other studies (e.g. for South Africa as a whole) have found it difficult to discern significant trends. IUCN currently lists the species as Vulnerable on the basis of a 20% population decline over three generations. The species may be taken as bycatch in large commercial pelagic fisheries, but is not directly targeted in these fisheries. In addition to this bycatch, the main sources of recorded mortality are sport fishing, artisanal fisheries, beach meshing programmes and collection for the curio trade. Although little information on the extent of the curio trade is available, the high prices for teeth and jaws (USD 500 to 50 000, respectively) are thought to stimulate directed take of this species in coastal fisheries and retention in bycatch. The FAO Conference has recognised the need for improved management of shark fisheries with the adoption of the International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks). This Plan, although voluntary in nature, encourages nations to assess their shark resources, take action to manage directed and incidental fisheries and to develop regional action plans. Few FAO members have taken such actions and no Regional Fisheries Management Organizations are planning stock assessments or regional management programmes; however, the species is protected by specific legislation in several range States.

Following an unsuccessful proposal to include *C. carcharias* in Appendix I at CoP11 Australia included it in Appendix III, effective in 2001. This proposal seeks to include *C. carcharias* in Appendix II with a zero annual export quota in accordance with Resolution Conf. 9.24: Annex 2a Criteria A and Bi) and ii), because of significant and continuing population declines and evidence of international trade. Furthermore the proponents contend that the species already meets Criteria A ii), A v) , Ci) and Cii) for inclusion in Appendix I.

The FAO *ad hoc* Expert Advisory Panel was unable to determine whether or not the species met the Criteria for inclusion In Appendix II.

**Analysis**: The Great White Shark is a very widespread although apparently naturally rare species. It is extremely difficult to estimate absolute population levels, but there are indications of marked and continuing population decline in various parts of the range, evidenced by decreases in catch or catch per unit effort. By far the most important identified source of mortality for the species is untargeted and, to a lesser extent, targeted fisheries. Great White Shark products are undoubtedly in international trade, particularly for the curio trade where the high prices advertised suggest a high demand relative to supply. The scale of this trade is unclear, as is the degree to which it may drive the fishery. However, the evidence of population decline does indicate that the current fishery for this species is unsustainable, particularly when the shark's low reproductive rate is taken into account.
Inclusion in Appendix II with a zero annual export quota would not only stop the export for commercial purposes, but would not allow for exchange in scientific specimens. The trade in household and personal effects would not be affected by the annotation other than where the country in which the product is acquired requires an export permit. Domestic fisheries would not be affected so long as the products did not enter trade. Evidence of trade levels is already elusive, partly because much of the trade is reportedly in personal effects that are exempt from control under the Appendix-III listing. Anecdotal reports suggest that a black market in products exists. Shark products are not generally distinguished in trade at the species level, however, the teeth and jaws of Great White Sharks are distinctive visually. For other products, a DNA identification procedure, at a cost of USD 15 per batch of samples, has been developed. This can determine the presence of Great White Shark products within 24 hours in shipments of fins, skins, meat or other tissues. Non-detriment findings for specimens introduced from the sea would be problematic.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| Coastal and offshore areas throughout temperate and subtropical regions and occasionally cold and tropical waters in the northern and southern hemispheres. The following range States are listed (appendix A to the SS): Angola, Argentina, Australia, Bahamas, Bermuda, Brazil, Canada, Chile, China, Democratic Republic of Congo, Cuba, Ecuador, France, Gambia, Ghana, India, Indonesia, Japan, Kenya, Democratic People's Republic of Korea, Republic of Korea, Kuwait, Madagascar, Marshall Islands, Mauritius, Mexico, Mozambique, Namibia, Panama, Peru, Philippines, Portugal, Russian Federation, Senegal, Seychelles, South Africa, Sri Lanka, Tanzania, UK, USA, New Zealand. | |
| **IUCN Global Category** | |
| VU. | *Vulnerable A1cd+2cd ver 2.3 1994 (IUCN, 2003).* |

## Biological and trade criteria for inclusion in Appendix II

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

| | |
|---|---|
| The species was included in Appendix III in 2001 by Australia. Since then, CITES trade data recorded five export transactions during 2002. Products including fins, teeth and jaws have been recorded and advertised in international trade. Jaws and teeth reputedly fetch over USD 10 000 and USD 425-600, respectively. | *The CITES trade data included reported exports of 300 teeth, various bones and one skull. According to Dudley (2004), one jaw may contain about 112 marketable teeth. Mexico reports that it has recorded exports of Great White Shark leather in 1999 and 2000.* |
| Overall the size of the global population is unknown, but the species appears to be uncommon to rare compared to most other large sharks, comprising from 0.03 to 0.5% of shark records in commercial fisheries. | *The current Appendix-III listing does not apply to personal effects, nor would an Appendix-II listing with a zero export quota, unless individual Parties require export certificates. Consequently, it is likely that the highest value Great White Shark products in trade, such as teeth and jaws, are not recorded in CITES Trade data (TRAFFIC Oceania, 2004).* |
| As an apex predator, the species is naturally rare. | *Duffy (in prep.,) reports that one foreign collector purchased 24 jaws from vendors in New Zealand between 1995 and 2000. He also indicated that after the species was protected in Australia, at least one Australian company sought supplies of jaws in New Zealand. He concluded that the international trade in jaws and teeth was low-volume but high-value.* |
| Quantitative data on population trends are scarce, but available regional figures of catch rates and catch per unit effort may be representative of trends in other areas: | *In comments to the CITES Secretariat, Australia noted that an Internet search for "sell White Shark teeth" returned approximately 77 000 hits. Undertaking a similar exercise produced a low proportion of sites that were actually selling non-fossilized teeth of this species. In the recent case of illegal sale in South Africa, teeth were reportedly on sale for USD 25 "indicating that they must be readily available" (Anon., 2004).* |
| Seven studies of trends (two from South Africa; four from Australia; one from USA; one from Europe) over periods of 10 to 130 years show a 60-95% decline in catch rates. The studies included a variety of beach meshing programmes, sport fishing and the US pelagic longline fleet catch and in one case a decline in size of individuals caught. Results were obtained from the Northwest Atlantic, Mediterranean and Southern oceans. | *It is not clear how representative of overall trends these seven studies of trends in catch data were. With respect to one of the studies from South Africa, Dudley (2004) writes "it would be accurate for the proposal to state that white shark CPUE declined steeply in the early years in the shark nets, but we are not sure that this represented a decline in the South African population as a whole. It would also be accurate to state that there has been no* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | *trend in CPUE over the 26-year period 1978-2003".*<br><br>*The FAO Panel noted some concerns over analysis of biological parameters quoted in the proposal, but nonetheless concluded that the Great White Shark is likely to fit the FAO profile for a low productivity marine species (FAO, 2004).*<br><br>*In 1996, available decline data led to the IUCN listing of the global population as Vulnerable on the basis of a 20% decline over the last three generations.* |
| **B) Harvesting for international trade has, or may have, detrimental impact on population**<br>**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| It is difficult to ascertain the current level of international trade as shark products are rarely identified to species level. The prices commanded for curios suggest that demand is high and as this trade generally values the largest, most vulnerable and least numerous section of the population, the sustainability is questionable. Although many recreational fishers release their catch, sports fisheries are thought to kill tens to low hundreds of Great White Sharks annually. Mortality levels in target commercial fisheries are likely to be similar to those in sport fisheries.<br><br>The species is known to be used non-consumptively for ecotourism and consumptively for leather, liver oil, and as a source of meat and fins. The species is targeted in coastal fisheries for trophies and saleable curios. The most prized products are jaws and teeth valued at USD 12 500-USD 50 000 and USD 600, respectively.<br><br>Great White Shark meat is reportedly the most valuable shark meat in the Republic of Korea.<br><br>There is evidence of poaching and trade in some range States with legislative protection for this species.<br><br>Inadequate population data mean it is impossible to know what percentage of the population is killed, hence precautionary measures should be considered in assessing the proposal.<br><br>The majority of annual captures worldwide of the species are made incidentally through commercial fisheries operating longlines, setlines, gillnets, trawls, fish traps and other gear. | *The species is naturally rare and has clearly undergone declines in population size. Although the level of harvest for trade is not well documented, a workshop on Great White Shark Conservation Research concluded that it is highly unlikely that this species is sufficiently productive to sustain a fishery (WCS, 2004).*<br>*With regard to the biological information on this species, Mollet (2004) indicates that he does not believe 4-5.6% population growth to be extremely low for a marine fish species. He does, however, concede that the Great White Shark, like most sharks, is unable to withstand targeted exploitation for long.*<br><br>*Meanwhile, Smith (2004) reports that a more recent re-assessment of the rebound potential of this species places its productivity even lower, at an annual rate of population increase of only 2.3%. This is based on a mean age of female maturity of nine years, average maximum age of 36 years, annual female pup production of 3.5 pups, a natural mortality rate of M=0.126 and an ability to withstand not more than a maximum sustainable yield level of total mortality equal to 1.5 times the species natural mortality rate (Z=1.5), a level now considered most appropriate for sharks.* |
| **Other information** | |
| **Threats** | |
| Direct and incidental fishing; declining prey abundance; protective beach netting; intensified trophy fishing; habitat degradation; increasing economic value as numbers decline; lack of protective legislation on a global scale; and a low intrinsic rate of population increase.<br><br>Because coastal areas are a preferred habitat, the population of the species or its prey could be affected by coastal habitat degradation. | *Accumulation of high concentrations of potentially toxic chemicals in shark tissue may lower immune defences or reduce biological fitness (Barrull and Mate, 2000).*<br><br>*Three specimens were caught in protective beach nets in Australia in both 1996 and 1998 and a further eight caught during 1999 (Paxton, 2000).* |
| **Conservation, management and legislation** | |
| Most range States do not regulate catches or trade of this species. The species is protected in South Africa, Namibia, the Maldives, Commonwealth | *Smith (2004) reports that California prohibits the retention of Great White Shark by fishers and that this prohibition has now been adopted in Washington and* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| waters of Australia, the US waters of the Atlantic Ocean and adjacent seas and California, Washington, Oregon, and Florida State waters. The level of enforcement varies. The FAO International Plan of Action for the Conservation and Management of Sharks (IPOA-SHARKS), should encourage the adoption of national action plans for shark stocks, but is voluntary and has yet to be implemented on a broad scale. Regional Fishery Management Organizations have yet to adopt any regional management for this species.<br><br>Population monitoring and research is conducted in South Africa and Australia.<br>In 2002, the species was included in the Convention on Migratory Species Appendix I and II. It is also listed in Annex 1 of the UN Convention on the Law of the Sea (UNCLOS). In the Mediterranean area, the species is included in Annex II of the Barcelona Convention and in Appendix II of the Bern Convention. | *Oregon States.* |
| **Similar species** | |
| Jaws and teeth are distinctive. Fins of large individuals could be confused with those of the Whale Shark *Rhincodon typus* or Basking Shark *Cetorhinus maximus* (both of which are included in Appendix II), but the different colour patterns provide a useful means to distinguish between the three species. The shapes of fins from small individuals are also quite distinctive. A method of DNA analysis that produces results within 24 hours is now available. | *Australia, in its response to the Secretariat's provisional assessment, indicates that the DNA diagnostic test is relatively inexpensive, USD 15 per batch of samples.* |
| **Captive Breeding** | |
| | |
| **Other comments** | |
| The species is widely distributed and has some degree of trans-oceanic movement, so that international co-operation would enhance the success of domestic measures. | *As the species is now protected in several range States there are reports that a black market in products is developing. Imposition of a zero quota may be difficult to implement effectively.*<br><br>*Hong Kong and Mainland China import the greatest amount of shark fin in the world and have systems in place to implement CITES shark listings effectively (Clarke, 2004).*<br><br>*The Animals Committee working group on the Biological and Trade Status of Sharks included the species in its list of key species, and on review of available information, most members of the group agreed that the species appeared to meet the criteria for inclusion in Appendix II (AC 20 WG8, 2004).*<br><br>*The FAO ad hoc Expert Advisory Panel for the Assessment of CITES proposals was unable to determine whether or not the species met the Criteria for inclusion in Appendix II (FAO, 2004), but concluded that the species was likely to fit the FAO profile for a low productivity marine species.* |

**Reviewers:** H. Mollet, J. Stevens, TRAFFIC Oceania.

## Inclusion of the Humphead Wrasse *Cheilinus undulatus* in Appendix II. Proponents: Fiji, Ireland on behalf of the member States of the EU, United States of America.

**Summary**: The Humphead Wrasse *Cheilinus undulatus* is a large coral reef fish distributed widely, but patchily, throughout the tropical Indo-Pacific. Humphead Wrasse are particularly vulnerable to over-fishing, as they grow slowly, mature late (at five to seven years) and are naturally uncommon. Adults tend to occur in predictable habitat in outer reef areas, channels and passes. The Humphead Wrasse grows to over two metres and 190 kg and can live for at least 30 years. The species is also hermaphroditic (with female to male sex change), which may make it more vulnerable to the effects of selective fishing. Most specimens are found in shallow water (< 30 m) and are easily accessible to spear and cyanide fishing. This species is reputedly one of the two most valuable fish per individual in the Live Reef Food Fish Trade (LRFFT) in Asia but, owing to its rarity, the species does not form a significant economic component of that trade. There is evidence of decline owing to exploitation (particularly for the LRFFT) throughout its range, but especially in Southeast Asia. Details of declining populations of Humphead Wrasse are presented for at least ten jurisdictions, and independent data from at least 24 surveys indicate that in areas targeted by the LRFFT, declines in fish catch rate or numbers can be ten-fold or more within less than a decade. In addition, the regular spawning aggregations, where fish can easily be caught, are thought to be under threat in a number of areas owing to targeted fisheries. Increasingly, juveniles are being caught and reared to a marketable size in sea cages, a practice thought to affect natural recruitment significantly.

Reporting of the LRFFT is rarely required to species level, but Hong Kong, believed to be the major importer of Humphead Wrasse, has documented imports at the species level since 1997. According to traders, a significant percentage of Hong Kong's imports are apparently re-exported to China, although Hong Kong government statistics do not show this. A study in Hong Kong in 1997 indicated that voluntary reporting of imports underestimated actual trade levels recorded in official statistics by at least one third. From 1997-2002, minimum annual imports of Humphead Wrasse into Hong Kong ranged from 37 to 189 tonnes. Imports to Hong Kong are now largely by air, which will aid trade monitoring. Demand for the Humphead Wrasse is expected to grow.

Various export restrictions for this species are in place in the following range States: Australia, Fiji, Maldives, Palau, Philippines, New Caledonia and Niue; other management measures are in place in Indonesia and Papua New Guinea. However, with some notable exceptions, current management and conservation measures are reportedly largely ignored in many countries. The proponents seek inclusion of this species in Appendix II in accordance with Resolution Conf. 9.24 Annex 2a Criterion B.

The FAO *ad hoc* Expert Advisory Panel concluded that the available evidence supports the inclusion of Humphead Wrasse in CITES Appendix II based on Resolution Conf. 9.24 Annex 2a, Criterion B (FAO, 2004).

**Analysis**: The available evidence suggests that the Humphead Wrasse meets the criteria for inclusion in CITES Appendix II under Resolution Conf. 9.24 Annex 2a Criterion B. The widespread, documented, serial population declines and pressure from the LRFFT strongly suggest that harvesting for international trade is currently having a detrimental impact on the species by exceeding, over an extended period, the level that can be taken in perpetuity. Because virtually all international trade is in live fish, mostly for food but also for the aquarium fish trade, specimens in trade can be easily identified. Implementation should therefore not be a problem, but some limited trade may also occur in filleted form, which may present an identification problem. However, in some range States, some skin must be retained on the fillets to aid identification. The fisheries are all in coastal waters and so fall within the jurisdiction of individual range States, consequently introduction from the sea will not be an issue.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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**Taxonomy**

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Range** | |
| Throughout the Indo-Pacific region, from East Africa and the Red Sea to the Tuamotus, north to the Ryukyus, east to Wake Island, south to New Caledonia and throughout Micronesia. It falls within the jurisdiction of 48 countries and overseas territories. | |
| **IUCN Global Category** | |
| VU A1b +2ab.<br>Proposed 2004 re-classification as EN. | *Proposed re-classification as Endangered, EN A2bd, (IUCN 2004,* in prep.). |

**Biological and trade criteria for inclusion in Appendix II**

**B) Harvesting for international trade has, or may have, detrimental impact on population**

**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level**

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|---|---|
| *Cheilinus undulatus* grows to over 2 m and 190 kg, become sexually mature at six years and the fish can live for at least 30 years. The generation time is expected to be >10 years and the rate of intrinsic population increase is likely to be low. It is hermaphroditic (with female to male sex change). This species is expected to have low rates of replacement and to be particularly vulnerable to over-fishing. | *Manica (2004) notes that the species is a protogynous hermaphrodite, i.e., individuals change sex during their life times. He cites Armsworth (2001) who, using imulations based on coral trout, showed that this trait makes a species more vulnerable to overexploitation.* |
| *Cheilinus undulatus* is naturally rare and extremely patchily distributed, with adults confined to steep outer reef slopes, channel slopes, and lagoon reefs in water 1-100 m deep. Natural densities are evidently never high, even in preferred habitats. Adult densities in preferred habitats are estimated at 1-10 animals per 5 000 $m^2$ of reef. After the onset of directed fisheries, densities drop rapidly so that a 50% decline or more is noted even under light to moderate fishing pressure. | *Chan (2004) notes that the species has a wide distribution from East Africa to the Central Pacific and contends that the survey of status has not been comprehensive.* |
| In American Samoa, the species is absent in the more heavily fished areas. | *According to the Indonesian Directorate General of Forest Protection and Nature Conservation, the species is considered common and locally abundant across its range in Indonesia (comments in response to proposal consultation). However, Chan (2004) contends that waters in Indonesia and the Philippines have been over-fished for many years and that fish populations of all kinds are decreasing. While juveniles can still be found in reasonable numbers in some places, reproductive adults necessary to replenish populations have become uncommon and juveniles are collected for "growout" and subsequent live export (Sadovy, 2004).* |
| In Malaysia, information from one trader indicates that both small and mid-sized fish have declined over ten fold between 1995 and 2002. At the same time, field-surveys indicate that catch rates declined from 10 kg per boat in 1995 when the fishery started, to negligible rates in 2002. | *With respect to the South Pacific area, Chan (2004) reports that Hong Kong traders have not bought fish from the area due to high transport costs and ciguatera problems. He questions evidence that the species is decreasing in the South Pacific as he believes that these countries neither export the species nor catch it for local consumption. However, the species is known to be exported live from a number of western Pacific island territories, including Fiji, Marshall Islands, Solomon Islands, Kiribati, and Papua New Guinea. According to Sadovy (2004) ciguatera is only a problem in certain areas in the western Pacific.* |
| In Fiji, domestic sales declined from 22.5 tonnes in 1994-1996 to 3.5 tonnes in 2003. Villages in some parts of Fiji report that they have not recorded a catch of *Cheilinus undulatus* in the last 10-15 years. | *According to Chan (2004), the countries supplying live reef food fish to Hong Kong and China include: Philippines, Malaysia (Sabah), Vietnam, Indonesia, Australia, India (Andaman Islands), Maldives, Cambodia and Thailand. Of these, Indonesia is the major exporter of Humphead Wrasse and a small quantity is exported from Sabah and Philippines. He believes that the quantity exported from Indonesia, Philippines and Sabah has been small and was about 25 tonnes in 2002.* |
| In Australia, historical information shows this species was more common in the 1950s and 1960s, and that declines have coincided with increased fishing activity. In Queensland, catch rates remained stable at 20 kg/day/boat between 1993 and 1998, but there is strong evidence of decline reported by several dive operators who report seeing fewer, and smaller, individuals. | *In Sabah, marked declines in catches over a ten-year period were evident and were associated with a business collecting wild juveiles for "grow- out" purposes* |
| In Indonesia, traders indicate that catch rates of Humphead Wrasse declined from 50-70 kg per month in the early 1990s to 10-50 kg by 2000, with serial depletions. Many fishers note that the species is scarcer now compared with five years ago, that smaller individuals are being caught, and that fishers have to | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| travel further from local ports to catch this species.<br><br>In Palau, market landings increased to 3 000-3 500 kg per year in the 1980s and then declined by the early 1990s to a few hundred kg annually.<br><br>Similar declines to those described above have also been noted in the Maldives, Society Islands, and Philippines. In addition, the regular spawning aggregations for which this species was known have declined or disappeared in a number of areas.<br><br>The species is traded on the live reef food fish market, which serves expensive restaurants in Hong Kong, China, Singapore and others. As a rare species, it commanded prices from USD 90 to USD 175 per kg (1997 retail prices in Hong Kong).<br><br>From 1997 to 2002, minimum annual imports of the species into Hong Kong, the single largest importer, ranged from 37 to 189 tonnes. A study in Hong Kong in 1997 indicated that the voluntarily reported imports under-estimated actual trade levels by at least one third. During that year, Customs statistics indicated that Hong Kong imported 21 000 tonnes of live reef fish, whilst interviews with traders etc. suggested the real figure to be nearer 32 000 tonnes. | *(Manica, 2004). Adults are only found in any numbers in protected areas (TRACC, 2004).*<br><br>*Data from the Fisheries Agency of Japan indicate the following catches of the species in Okinawa: 1998 – 7 040 kg; 1999 – 10 950 kg; 2000 – 9 810kg; 2001 – 8 270 kg; 2002 – 930kg (TRAFFIC East Asia, 2004).* |

**Other information**

**Threats**

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| Threats include (1) intensive and species-specific removal for the LRFFT; (2) spear-fishing at night with SCUBA gear; (3) lack of co-ordinated, consistent national and regional management; and (4) illegal, unregulated, or unreported (IUU) fisheries. In addition, the species' essential coral reef habitat is seriously threatened by human activity throughout the Indo-Pacific region. Given the shallow depth range of the species and the wide-ranging movements of live reef fishing boats in the Indo-Pacific, actual or potential refuges for the species are unlikely to remain if trade continues. | *According to Erdmann (2000), the threat posed by LRFFT cannot be over-estimated. A single three kilo fish can fetch a fisherman over a month's average salary, suggesting that economic extinction in this fishery will not occur before the risk of biological extinction is serious (the contrary is often argued for other fish species) (Erdmann, 2002). Between 1995 and 1999, the average price for live* C. undulatus *paid to Indonesian fishers rose from USD 22.2 per kilo to USD 40 per kilo. During this time, the average salary in Indonesia was less than USD 40 per month.* |
| Demand for *Cheilinus undulatus* is projected to grow with expansion of the LRFFT and wealth in Asia. Large vessels that transport live fish have access to remote and significant refugia for this species, which will probably disappear if the species' value continues to increase. | *Humphead Wrasse aggregate to spawn and are extremely vulnerable to collection at this time. Discussions with fishers in Indonesia indicate that they have often completely 'cleaned out' spawning aggregation sites during full moon periods (Erdmann, 2002). The fish's habit of sleeping in caves or crevices makes it extremely vulnerable to night spear-fishing and night cyanide fishing. LRFFT divers understand the habits of this species well and exploit this to the fullest (Sadovy, 2001). However, recent information on spawning aggregations in Palau (Colin, 2004) indicates the species aggregates throughout the lunar month and possibly the year and may therefore be less vulnerable to target fishing.* |
| Collection of juveniles to raise in aquaculture is likely to contribute to recruitment over-fishing and may pose a threat to wild populations. There is also a developing export market for juvenile specimens for the marine aquarium trade. The species is a sequential hermaphrodite, and as such, the consequences of removing juveniles from the population are poorly understood. | *Destruction of essential coral reef habitat is an important threat. In addition to destruction by humans, the coral bleaching event of 1997/8 was significant, particularly in the Indian Ocean, where > 80% bleaching and coral mortality occurred in eastern Africa, particularly in Kenya, northern Tanzania and the Seychelles (Linden* et al., *2002, Wilkinson 2002).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **Conservation, management and legislation** | |
| The are no regional, and few national, efforts to manage the LRFFT. Significant importers (e.g., Hong Kong) do not require landing reports by locally licensed vessels (of which there are 4 000). This results in serious under-estimation of Hong Kong's import volumes. However, the trade is increasingly coming through airports, where it would be much easier to monitor.<br><br>Due to over-fishing, export of *Cheilinus undulatus* is banned in many areas of the Indo-Pacific: Maldives, Palau, Palawan Islands (Philippines), Western Australia and Niue. Nevertheless, specimens from these areas still appear in Hong Kong markets and traders acknowledge that smuggling is common.<br><br>The species is prohibited from harvest in Western Australia because the stocks were not large and were highly susceptible to over-fishing. Fisheries in other parts of Australia ended in December 2003 because *Cheilinus undulatus* have been implicated in ciguatera poisoning in Hong Kong.<br><br>The Maldives banned export in 1995, based on concerns about loss of the fish from recreational diving sites. However, in 1998, Hong Kong imported 100 965 kg of *Cheilinus undulatus* from the Maldives, worth USD 635 000.<br><br>In Palau, the export of the species was suspended in 1998 due to fears of over-fishing. National laws also prohibit trade in specimens <25 inches (56 cm).<br><br>Papua New Guinea prohibits exports of fish smaller than 64 cm.<br><br>In the Philippines, the province of Palawan banned the export of Humphead Wrasse in 1994 because of over-fishing and associated concerns. However, small fish could still be caught if used for grow-out. It is unclear whether other provinces have followed suit, or whether the Palawan ban is still in effect. | *FAO has no programmes to assist with the management of this species at the national or regional level.*<br><br>*Chan (2004) reports that Indonesia does not allow Humphead Wrasse of over five kg in size to be exported from the country. However Sadovy (2004) notes that regulation allows fish of one to three kg to be exported, but that fish of less than one kg must first be used in grow-out culture. Regulation also requires that provincial fisheries services should monitor these activities, but monitoring data is not available.*<br><br>*Erdmann (2002) notes that, in Bunaken National Park (North Sulawesi, Indonesia), Humphead Wrasse are recorded on manta tow surveys of the park's reefs. A survey in July 2002 showed a strong effect of no-take zones in protecting this species. However, only 5% of the species' habitat in Indonesia is found in Marine Protected Areas.*<br><br>*Chan (2004) reports that although the Philippines authorities have prohibited the export of the fish, fish are exported to Hong Kong through special arrangements between the two countries.*<br><br>*Monitoring programmes, which will include Humphead Wrasse, are being established by PROCFish (implemented by the Secretariat of the Pacific Community) for 12 countries over the next five years (Kulbicki, 2002).* |
| **Similar species** | |
| In international trade, Humphead Wrasse are traded almost exclusively as live specimens for the luxury food market. Given the species' unique appearance at all stages of its life history, it is unlikely to be mistaken for other species. | *This species is well defined and presents no geographical variations, even though it ranges from East Africa to French Polynesia. The species is easily recognized. Juveniles under 10 cm may be harder to distinguish and may be confused with* C. trilobatus *or* C. chlorurus*, however even young fish have distinctive features (Kulbicki, 2002).* |
| **Captive Breeding** | |
| Closed cycle aquaculture is currently not possible, and further research is needed. Culturing of this species currently consists of "growing out" wild-caught juveniles until they reach marketable or legal size for export. The majority of individuals of this species sold in Hong Kong are close to or below the size of sexual maturation for the species and many of these fish have been produced by "grow-out" of wild caught fish. | *Concern has been expressed at the capture and ranching of juveniles, which are thereby removed from the natural breeding population (Manica, 2004).* |
| **Other comments** | |
| Comments were received from a number of range | *The FAO* ad hoc *Expert Advisory Panel concluded that* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| States, some in support and others against the listing. | *the available evidence supports the inclusion of Humphead Wrasse in CITES Appendix II based on Resolution Conf. 9.24 Annex 2a, Criterion B, due to the high vulnerability and low productivity of the species and evidence of widespread and serious impacts of exploitation throughout most of the its range (FAO, 2004).*<br><br>*Sadovy* et al., *2003 provides a review of known information on the species to inform management decisions.*<br><br>*Chan (2004) reports that the Hong Kong Chamber of Sea Food Merchants Ltd. is opposed to the proposal and is concerned that the objective of the proposal is to put restrictions on trading and transport of the Humphead Wrasse.* |

**Reviewers:** P. Chan, T. Donaldson, N.K. Dulvy, A. Manica, M. Samoilys, TRAFFIC East Asia.

## Deletion of the annotation "*sensu* D'Abrera" in relation to *Ornithoptera* spp., *Trogonoptera* spp. and *Troides* spp. in Appendix II. Proponent: Switzerland as Depositary Government.

**Summary**: The birdwing butterfly genera *Ornithoptera*, *Trogonoptera* and *Troides* have been included in Appendix II since 1979. The listings themselves include the words *sensu* D'Abrera referring to the authority intended at the time to be the standard nomenclatural reference for these genera (the volume in question being D'Abrera, B., *Birdwing butterflies of the World*, published in 1975). These are the only taxa included in the Appendices for which such a reference is included as part of the listing. This situation is anomalous, and means that a change to the standard nomenclature can only take place through an amendment proposal, rather than through a Resolution, as is the case with all other taxa. Furthermore, this annotation is now ambiguous, as a revised taxonomy has been produced recently by the same author, so that it is unclear which is referred to.

**Analysis**: This is essentially a procedural proposal to remove an anomaly in listing. It will have no impact on the species involved.

## Inclusion of the Date Mussel *Lithophaga lithophaga* in Appendix II. Proponents: Slovenia and Italy (on behalf of the Member States of the European Community).

**Summary**: The Date Mussel *Lithophaga lithophaga* resembles fruit of the date palm, and is a boring bivalve that inhabits limestone rocks. It occurs in the Mediterranean area, along the north West African coast to Senegal and along the northern coast of Angola. It is a pioneer species and its 10-20 cm long burrows provide habitat for many other organisms. A slow-growing species, individuals take 15-20 years to reach a size of five to six cm, when they are suitable for human consumption. Maximum sizes of 12 cm have been recorded. The species is thought to reach sexual maturity before it reaches a commercially viable size. Data on population trends and on the extent of exploitation are only available from restricted localities. In these areas, habitat damage from harvest is extensive, and ecosystems may take decades to recover. Over-exploitation resulting in habitat loss has been documented in areas of the Italian, Croatian, Serbia-Montenegrian and Spanish coasts. As a culinary delicacy, the species is in demand nationally and internationally, reportedly fetching prices of EUR 35-60 per kg in the illegal market in Italy. The species is subject to various levels of regulation in a number of range States: harvesting and export are prohibited in at least 12, and the species is protected in a further two, and listed as threatened in one. It is also listed as strictly protected under the Bern Convention, the Geneva/Barcelona Protocol, under the Barcelona Convention and the European Union (EU) Habitats Directive. Despite these regulations, enforcement is clearly a problem as indicated by the reported seizures of illegal shipments. Much of the illegal trade occurs among south-east European countries (Croatia, Serbia-Montenegro, Albania), and between these countries and Member States of the European Union (France, Germany, Italy, Slovenia, Spain); illegal trade from Morocco to Spain has also been reported.

The FAO *ad hoc* Expert Advisory Panel considered that the proposal identified a real and important problem, but believed that Date Mussels were probably not over-exploited as a result of international trade in a significant portion of their range.

**Analysis**: According to the available evidence *Lithophaga lithophaga* is in international trade and is subject to national collection for human consumption in a number of range States. Harvest is prohibited in a number of these States and the majority of use and trade is considered illegal. However, information on the status of the species throughout its range is sparse and it is therefore difficult to assess the overall impact of harvest. The species is very slow growing and restricted to a specialised habitat and there is evidence of localised depletion resulting from over-exploitation. Collection practices are clearly very destructive and the species cannot re-colonise such areas for many decades. However, there is also evidence that in some areas, the species does not grow sufficiently large to make exploitation commercially worthwhile, which may ultimately protect it from extinction. Overall it is uncertain whether or not harvest for international trade exceeds levels that can be continued in perpetuity. In cases of uncertainty, the precautionary measures of Resolution Conf. 9.24 Annex 4 recommend that Parties act in the best conservation interest of the species. An Appendix II-listing is likely to strengthen trade controls, in particular by Member States of the EU.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| | |
| **Range** | |
| Albania, Algeria, Angola, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Gambia, Greece, Israel, Italy, Lebanon, Libya, Malta, Mauritania, Monaco, Morocco, Portugal, Senegal, Serbia and Montenegro, Slovenia, Spain, Syria, Tunisia, Turkey, Western Sahara. | *The species has also been reported from the Red Sea (Gonzales* et al*., 2000).* |
| **IUCN Global Category** | |
| | *The species has not been assessed by IUCN (IUCN 2003; Seddon, 2004).*<br>*The Natural History Museum in France indicates that the species is Vulnerable at the national level (Anon, 2004a).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **Biological and trade criteria for inclusion in Appendix II** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population**<br>**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| The bivalves bore 10-20 cm long holes in limestone rock. They favour areas with strong currents and generally occur from sea level to a depth of 8 m, although smaller aggregations have been found to a depth of 20 m. The species is slow growing, taking 15-20 years to reach the size of 5-6 cm when it is suitable for human consumption (maximum length can be up to 12 cm). Collection, using explosives and pneumatic hammers, involves extensive habitat damage and prevents re-colonisation. Data on population trends are sparse, but over-exploitation has reportedly caused habitat loss in areas of the Italian, Croatian and Serbia-Montenegrian coasts.<br><br>Fishing for shellfish in general in the Mediterranean is estimated to have increased 12% in the past decade.<br><br>In general, the species cannot be traded legally and so is not covered by Customs statistics. According to government authorities, Serbia and Montenegro exported an estimated 30 000 kg of *L. lithophaga* to neighbouring countries every year until 2003. The Slovenian authorities also reported in 2002 receiving requests for the import of 8 000 kg from Serbia to supply the Italian market, and confiscated more than 850 kg between 2000 and 2004. In Croatia, about 700 kg of *L. lithophaga* were seized annually between 2001 and 2002. In addition, *L. lithophaga* traded in Bosnia-Herzegovina is reputed to come mainly from Albania, and Serbia-Montenegro. Although no data were presented, illegal trade in the species cannot be ruled out in Morocco, according to government authorities.<br><br>Within the last five years, cases of illegal trade have been reported from Croatia, Slovenia, Spain, and Italy. Reportedly international trade mainly occurs among south-east European countries (Croatia, Serbia-Montenegro, Albania), and between these countries and the Member States of the European Union (Italy, Slovenia, Spain). In addition illegal trade from north West Africa has also been reported. | *According to Gonzales* et al., *(2000) the males reach sexual maturity during their second year (shell length approximately 1 cm) while the females take longer (shell length app. 2.7 cm). Extrapolations from a study in Capri, Italy by Russo and Cicogna (1992) indicate that between 6.8 and 10.8 million individuals were collected each year, resulting in habitat destruction between the surface and a depth of 15 m along three to five km of coastline. The authors conclude that this harvest intensity would completely destroy the area within 30 years. Extreme damage in some localities has been reported in Italy and the former Yugoslavia, and it is postulated that unless harvest is brought under control such damage will also affect populations of Greece, Albania and Spain (Gonzales* et al., *2000). Boljesic (2004) notes that limestone formations are scarce in some Mediterranean countries and consequently the species could be threatened by trade in these countries.*<br><br>*In some countries (e.g, Israel), the species is not used for human consumption as it grows too slowly and does not generally reach an economically harvestable size (Ortal, 2004).*<br><br>*An FAO study in 1999 indicated that the species was collected on the Moroccan coast and sold to Spanish wholesale fish merchants, despite being protected by law in Morocco (Shafee, 1999). The species is also included in an identification guide prepared for fisheries purposes, suggesting that it might be an important fishery resource (Fishcer* et al., *1987). According to Gonzales et al., (2000), illegal trade from Morocco to Spain has been reported although figures are not available.*<br><br>*The species is uncommon in Tunisia and occurs only in some isolated areas; it is only occasionally collected in the country (Romdhane, 2004).*<br><br>*The species has been offered for sale to shell collectors via the internet at EUR 4 per specimen (Anon., 2004b).*<br><br>*According to TRAFFIC Europe (2004), the main countries of concern for illegal trade are: Albania, Bosnia, Croatia, Greece, Italy, Morocco, Spain, Serbia and Montenegro. Shipments have been seized in southern Italy; within Italy there is a high demand for Croatian and Albanian specimens.* |
| **Inclusion in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| | |
| **Other information** | |
| **Threats** | |
| | |
| **Conservation, management and legislation** | |
| Of the states for which information is available, harvesting | *Harvesting and export of the species is prohibited in at least 12 of the 27 range States (Croatia, Cyprus, France,* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| and export of this species are prohibited in four range States, the species is protected in a further six States, listed as threatened in one, and not considered to be threatened in one.<br><br>The species is listed as strictly protected under the Bern Convention, The Barcelona/Geneva protocols and the EU Habitat Directive. The Bern Convention Bureau considered that the species required special attention by all range States to prevent trade.<br><br>Population monitoring does not appear to be widespread and no information on harvest management is presented. | *Greece, Italy, Malta, Morocco, Portugal, Serbia and Montenegro, Slovenia, Spain and Tunisia). Information is missing from Algeria, Angola, Bosnia and Herzegovina, Egypt, Gambia, Lebanon, Libya, Mauritania, Senegal and Western Sahara.*<br><br>*Due to its inclusion in the European Union Habitats Directive, the species is prohibited from keeping, transport, sale or exchange, and offering for sale or exchange in all Member States of the EU.* |
| **Similar species** | |
| *L. lithophaga* has a distinctive appearance (auburn to chestnut coloured valves with a white-yellow to grey mantle) and is believed unlikely to be confused with related species. Although several species within the genus are morphologically similar, they are geographically separated. *L. aristata* is similar in appearance to *L. lithophaga*, but the adult specimen does not exceed 5 cm and one of its valves has an appendix posteriorly. | *Although the maximum size of* L. lithophaga *is 12 cm, it is reputedly suitable for human consumption at 5-6cm, the same length as adult* L. aristata*. However,* L. aristata *is apparently restricted in distribution to the Caribbean region so there are unlikely to be enforcement difficulties.* |
| **Captive breeding** | |
| There is no evidence of captive breeding, due to the particular substrate requirements of the species. | |
| **Other comments** | |
| Responses were received from 13 range States and from FAO. | *Destruction of rocks in search of date mussels also reduces sites available for spiny lobsters to settle (Diaz* et al., *2001).*<br><br>*The FAO* ad hoc *Expert Advisory Panel considered that the proposal identified a real and important problem, but that the species was probably not over-exploited as a result of international trade in a significant portion of its range (FAO, 2004).*<br><br>*If* Lithophaga lithophaga *is included in CITES Appendix II, it would be expected to be included in Annex A of* Council Regulation (EC) No 338/97 *that implements CITES in the EU, because of its listing in the Habitats Directive (all species protected by the Habitats Directive have to be included in Annex A of the EU Wildlife Trade Regulations). This would reinforce the existing EU policy, banning harvest and sale etc.* |

**Reviewers:** P. Abello, Italian CITES Management Authority, R. Ortal, M. Seddon, TRAFFIC Europe.

**Amendment of the annotation for Helioporidae spp., Tubiporidae spp., Scleractinia spp., Milleporidae spp. and Stylasteridae spp. to read:**

**Fossils, namely all categories of coral rock, except live rock (meaning pieces of coral rock to which are attached live specimens of invertebrate species and coralline algae not included in the Appendices and which are transported moist, but not in water, in crates) are not subject to the provisions of the Convention.**
**Proponent: Switzerland.**

**Summary**: A range of corals, that is various invertebrates within the phylum Cnidaria (the jellyfishes, sea-anemones and corals), is included in Appendix II. These are, in the class Anthozoa, the families Helioporidae (blue corals) and Tubiporidae (organ-pipe corals) and the orders Antipatharia (black corals) and Scleractinia (stony corals), and, in the class Hydrozoa, the families Milleporidae (fire corals) and Stylasteridae (lace corals). All except the Antipatharia are annotated to the effect that fossils are not subject to the provisions of the Convention. Implementing the listing and the annotation has proven challenging, not least because of the difficulty in defining in the context of hard corals what exactly is meant by a fossil. CoP11 adopted a Resolution (Conf. 11.10, revised at CoP12) on trade in stony corals (i.e., all those above except the Antipatharia). This noted that stony corals were traded internationally as intact specimens for aquaria and as curios but also as coral rock, fragments, sand and other coral products. It further noted that coral rock may act as an important substrate for the attachment of live corals and that the removal of coral rock may have a detrimental impact on reef ecosystems. This implied that coral rock should not necessarily be considered as fossil and thereby exempted from the provisions of the Convention. It recommended that Parties give much greater emphasis to implementation of Article IV (i.e., non-detriment findings) when allowing export of corals and that they adopt the principles and practice of the ecosystem approach. The Resolution also adopted a series of definitions, including those following:

*Coral rock (also live rock and substrate)* – hard consolidated material, >3 cm in diameter, formed of fragments of dead coral and which may also contain cemented sand, coralline algae and other sedimentary rocks. *'Live rock'* is the term given to pieces of coral rock to which are attached live specimens of invertebrate species and coralline algae not included in the CITES Appendices and which are transported moist, but not in water, in crates. '*Substrate'* is the term given to pieces of coral rock to which are attached invertebrates (of species not included in the CITES Appendices) and which are transported in water like live corals. Coral rock is not identifiable to the level of genus but is identifiable to the level or order. The definition excludes specimens defined as dead coral.

*Dead coral* – pieces of coral that are dead when exported, but that may have been alive when collected, and in which the structure of corallites (the skeleton of the individual polyp) is still intact.

*Coral sand* – material consisting entirely or in part of finely crushed fragments of dead coral no larger than 2 mm in diameter and which may also contain, amongst other things, the remains of foraminifera, mollusc and crustacean shell, and coralline algae.

*Coral fragments (including gravel and rubble)* – unconsolidated fragments of broken finger-like dead coral and other material between 2 and 30 mm in diameter.

This Resolution did not, however, define a fossil in the context of stony corals and therefore left the question of interpretation and implementation of the annotated listing for these species unresolved. As noted in the supporting statement to the proposal, CoP12, in Decision 12.62, asked the Animals Committee to '*consider and recommend a practical means of distinguishing fossilized corals from non-fossilized corals in international trade, and provide a report at CoP13'.* This proposal is the result of the deliberations of the Animals Committee, and of an intersessional working group established by the Committee.

Under the proposal, all forms of coral rock, as defined above, including substrate but not live rock are to be excluded from the terms of the Convention. Coral sand and coral fragments are already excluded (see analysis below). Dead coral as defined above is not considered fossil and is therefore not to be excluded from the terms of the Convention. Under the definition, the differences between live rock and substrate are: coralline algae are specified for the former (live rock) and not for the latter (substrate); attached non-CITES-listed invertebrates are specified as alive in the former (live rock) and not necessarily so in the latter (substrate); and live rock is transported moist, in crates, while substrate is transported in water like

live corals.

The rationale for this appears to be that live rock is a major component of most marine aquaria and therefore traded in considerable amounts. Removal of such amounts from reefs may have an adverse impact on the reef and therefore its harvest should be subject to non-detriment findings, taking into account the ecosystem approach as recommended in Resolution Conf. 11.10. Substrate, on the other hand, is generally traded as the base to which are attached soft corals and other fragile, sessile non-CITES marine invertebrates that must be transported immersed in water and that form special features of marine aquaria in a similar way to live corals. These are expensive to transport and are traded in much lesser quantities than live rock. It is argued therefore that this trade overall has a much smaller impact on coral reefs and need not be subject to non-detriment findings, so that hard coral of this kind can be safely excluded from the provisions of the Convention.

There are indications that substantial amounts of “live rock” in some countries are collected and then exported dry, rather than moist. In addition, various forms of coral rock are now transported in bags rather than crates (TRAFFIC Oceania, 2004).

The FAO ad hoc Expert Advisory Panel for the Assessment of CITES Proposals recognized the complexity of defining coral parts and derivatives to support the control of international trade and the considerable work that had been done within CITES on the issue over the years, but was unable to evaluate the effectiveness of the proposed annotation.

**Analysis**: Under Article I of the Convention (Definitions) specimen, for animals, means: any animal, whether alive or dead; and for species included in Appendices I and II, any readily recognisable part or derivative thereof.

Under Resolution Conf. 9.6 Rev., the Parties agreed that coral sand and coral fragments, as defined in Resolution Conf. 11.10 (Rev. CoP12) were not readily recognizable, and were not therefore covered by the provisions of the Convention.

There is, however, no provision in the Convention to exclude from its provisions any readily recognisable part or derivative of any animal included in Appendices I and II. In the case of corals, exemption of fossils must therefore be considered an interpretation of ‘readily recognisable part or derivative’ – that is, the Parties have decided that fossils in the case of the groups listed above are not readily recognisable. In the proposed annotation, fossils of these corals will be defined as coral rock, excluding live rock but including substrate. In Resolution Conf. 11.10 (Rev. CoP12) the Parties have decided that coral rock is recognizable to the level of order. In the case of the Scleractinia, which is included as an order in the Appendices (and which includes the majority of stony coral species), it is difficult to see how these two decisions can be reconciled.

Assuming this can be overcome (presumably through further revision of Resolution Conf. 11.10 (Rev. CoP12)), there would still appear to be considerable implementation difficulties; the only realistic way of distinguishing live rock from substrate is the method of transportation (moist rather than in water). Deciding how moist a consignment must be before it is considered “in water” is likely to be challenging. Similarly, distinguishing a “dry” consignment of coral rock (exempt) from a “moist” one (subject to the provisions of the Convention) is likely to prove problematic.

It could also be argued that the removal for trade of soft corals and other invertebrates to which pieces of coral rock are attached as substrate may have a similar impact on reefs as removal for trade of live corals. Taking into account the ecosystem approach, they should arguably therefore be subject to non-detriment findings under Article IV. The Parties would need to consider the burden in regulating this latter trade and compare it with the difficulties created in enforcement in distinguishing substrate (excluded from the Appendices) from live rock (included in the Appendices), were the annotation to be approved in its current form.

**Reviewers:** TRAFFIC Europe, TRAFFIC North America.

## Inclusion of *Hoodia* spp. in Appendix II, designating all parts and derivatives except those bearing the label 'Produced from *Hoodia* spp. material obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of Botswana, Namibia and South Africa under agreement no. BW/NA/ZA xxxx'. Proponents: Botswana, Namibia and South Africa.

**Summary**: *Hoodia* spp. are slow-growing, perennial, spiny succulent plants. They occur in a wide range of arid habitats in southern Africa, typically on arid gravel or shale plains. The genus is generally considered to consist of 14 species and four infraspecific taxa. A broader taxonomic interpretation of the genus recognises 26 species. Detailed information on the distribution and population status of individual taxa is limited. The proposal states that ten of the 16 taxa assessed have been classified as threatened according to the IUCN Red List Categories and Criteria, with four taxa classified as Vulnerable in 2002. Strong commercial interest in the genus results from the isolation and patenting of an active ingredient (P57) which acts as an appetite suppressant. The active ingredient has been isolated from *H. gordonii,* which is abundant and widespread in Namibia and South Africa. It is thought likely that the active ingredient may also be present in a number of other species, some of which have more limited and patchy distributions. These may be vulnerable to over-collection. *Hoodia* spp. are legally protected in most countries of occurrence, and the trade is regulated by national legislation in Botswana, Namibia and South Africa, but there is evidence of illegal trade, which seems to be a growing problem. The proponents seek inclusion of the genus in Appendix II to establish a standardized international trading framework and monitoring regime. The proposed annotation if adopted would imply that only the certified sustainable trade from three range States would be exempt from the provisions of the Convention. Trade from Zimbabwe or any non-certified trade from Botswana, Namibia and South Africa would be subject to the provisions of the Convention as would imports into Parties from Angola (a non-Party). Trade in specimens of *Hoodia* grown in countries outside the region, and their parts and derivatives, would also be subject to CITES controls.

Details of how the proposed controlled harvesting and production operations to be developed in collaboration with the CITES Management Authorities of Botswana, Namibia and South Africa might operate are not given in the proposal. Parties are therefore asked to consider a new form of listing on the basis of limited information about how this would work.

**Analysis**: *Hoodia* spp.*,* are at risk in the wild because of their perceived value on the international market as a source of appetite suppressants. The species from which the active pharmaceutical ingredient has been identified, *H. gordonii* remains widespread and abundant but there is evidence of damage to wild populations from collectors. Although not currently considered to be threatened, this species may meet Resolution Conf. 9.24 Annex 2a, criterion B i) in that harvesting of specimens from the wild for international trade may have a detrimental impact on the species by exceeding, over an extended period, the level that can be continued in perpetuity. Other species of *Hoodia* have much more restricted ranges and some are considered threatened in the wild. Several of these may be vulnerable to over-harvesting. In view of the similarity of all species, the remaining species are likely to meet the criteria in Annex 2b of Resolution Conf. 9.24 for inclusion in Appendix II.

Three of the range States for this species wish to use CITES Appendix II to help manage wild populations harvested for international trade in a novel way. From the information provided in the listing proposal it is difficult to understand how the proposed annotation would work in practice. No indication is given in the proposal regarding how the proponents intend the label to be applied or which agencies would be responsible for granting authorisation to use it. Furthermore, the label implies that there will be a mutually binding agreement on "controlled harvesting and production" for *Hoodia* among the three proponent countries. Information on how this would operate within the context of CITES would be beneficial for the Parties in considering this proposal.

| Information provided and statements made by proponents in the Supporting Statement | Information provided and statements made by proponents in the Supporting Statement |
|---|---|
| | **Taxonomy** |
| The family for this genus is given as Apocynaceae.<br><br>The proposal does not include a full list of taxa considered to be included in the genus. | Hoodia *has previously been included in the family Asclepiadaceae. The two sub-families of the Asclepiadaceae were transferred to the Apocynaceae in 2000 (Endress and Bryuns, 2000), because there are a few bridging genera which possess features from each of these families (Plowes, 2004). There is ongoing taxonomic debate about this decision. Müller and Albers, 2002, whilst noting the formal transfer, continue to use the family name Asclepiadaceae. They consider that the genus* Hoodia *consists of 14 species and four infraspecific taxa.*<br><br>*According to Plowes (2004), there may be 26 species in the genus* Hoodia*, including the so-called "spiny* |

| Information provided and statements made by proponents in the Supporting Statement | Information provided and statements made by proponents in the Supporting Statement |
|---|---|
| | Trichocaulons*".*<br><br>*Hybrids are known with* Orbea *and* Tromotriche *(Müller & Albers, 2002).* |
| | **Range** |
| Angola, Botswana, Namibia and South Africa. | *Zimbabwe is an additional range State for the genus.*<br><br>H. gordonii *occurs in Botswana, Namibia and South Africa. It does not occur in Angola (Golding, 2004).*<br><br>*There is uncertainty about the presence of* H. gordonii *in Botswana. According to Hargreaves (2004) there is no evidence of the species occurring within the country and the record is based on a mislabelled specimen.* |
| | **IUCN Global Category** |
| Ten of the 16 taxa assessed have been classified as threatened in the latest Red List assessments. The threatened taxa listed are:<br><br>*H. dregei, H. juttae, H. officinalis* subsp. *Delaetiana, H. pilifera* subsp. *annulata, H. pilifera* subsp. *Pillansii, H. pilifera* subsp. *pilifera, H. ruschii* and *H. triebneri.* | *The 1997 status information given to in the proposal appears to be based on the 1997 IUCN Red List of Threatened Plants (Walter and Gillett, 1998).*<br><br>*The 2002 status information appears to be based on the information given in the Southern African Plant Red Data Lists (Golding, 2002).* |

## Biological and trade criteria for inclusion in Appendix II

**B) Harvesting for international trade has, or may have, detrimental impact on population**

**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level**

| | |
|---|---|
| Little is known about population trends, although declines have taken place at various sites. There are reports that *Hoodia* spp. have disappeared from parts of their range due to mining, infrastructure development and agriculture.<br><br>In addition all species have been subject to collecting by succulent collectors. Harvesting for medicinal purposes has traditionally occurred. Since the isolation of the active ingredient in *H. gordonii* and the extensive press coverage projecting the financial value of this, commercial harvesting has become a large potential threat. Although *H. gordoniii* is abundant and widespread, collectors cannot always tell the species apart and wild collection is thought likely to impact a number of *Hoodia* spp. Harvesting requires cutting off the above ground parts of the plants, and it is relatively easy to decimate small populations.<br><br>To date, levels of trade from Botswana, Namibia and South Africa have been very limited. No information is presented from Angola. There is evidence of illegal trade from the three proponent countries.<br><br>The potential impact of illegal trade is thought to be very high after the patenting of P57 in South Africa.<br><br>Several species, such as *H. gordoniii*, occur in very large populations with extensive distributions of over 10 000 $km^2$. Others occur in small, isolated patches with a total distribution of less than 1000 $km^2$. No subpopulation of *H. pilifera* subsp. *pillansii* is thought to exceed 250 individuals. | *Although* Hoodia gordonii *is widespread, plants are usually in small scattered population pockets, often with only a few dozen plants in each, or less. They can be easily seen from a distance because of their size, being higher than the surrounding low karroid shrubs and therefore all individuals are likely to be taken by harvesters, leaving only hidden seedlings to regenerate the population (Plowes, 2004).*<br><br>*Recent observations in the Central Namib, Namibia indicate the removal of larger individuals of* H. gordonii *by collectors – usually when the plants are in flower and easy to spot (Strohbach, 2004).*<br><br>*There is no evidence of harvesting of Hoodia* spp*., in Botswana (Hargreaves, 2004).*<br><br>*Ethnobotanical records suggest that several species in addition to* H. gordonii *are of interest for appetite suppressing properties namely:* Hoodia currorii, Hoodia flava, Hoodia lugardii, Hoodia (Trichocaulon) piliferum, *and* Hoodia (Trichocaulon) officinale *(Wynberg, 2004a).*<br><br>*The active ingredient known as P57 has been patented, the patent covering six species:* H. currorii, H. gordonii, H. lugardii, H. (Trichocaulon) piliferum, *and* H. (Trichocaulon) officinale (*Wynberg, 2004a). However, the natural product cannot be patented entirely. There is therefore no copyright infringement by manufacturing and selling any natural products derived from* H. gordonii *or other species that should prove to contain P57, even though such products would also naturally contain P57.*<br><br>*Medications that are reputed to contain* Hoodia *material are currently sold widely, particularly in the USA and the UK. Prices vary between USD 39 and USD 70 (90 capsules, 400 mg per capsule).* |

| Information provided and statements made by proponents in the Supporting Statement | Information provided and statements made by proponents in the Supporting Statement |
|---|---|

**Other information**

**Threats**

The extent of illegal trade is unknown, but illegal exports have been reported in all three countries. It is alleged that foreign pharmaceutical companies may have been obtaining significant amounts of *Hoodia* through illegal collection.

Populations have also been declining due to habitat loss or degradation caused by mining, development of infrastructure, collecting and overgrazing. Several localities of *H. currorrii* subsp. *lugardi* have been lost to the combined effects of diamond mining and attack by a snout beetle.

*Very few localities are known where diamond or other mineral deposits coincide with* Hoodia *populations, a small part of the range of* H. currorrii *at Rossing uranium mine near Swakopmund, Namibia being a notable exception. Overgrazing does not directly impact* Hoodia species *because most, if not all, species are not normally grazed by livestock, but loss of grazeable shrubs could eliminate the 'nurse' plants that are necessary for successful germination and growth of* Hoodia *spp. The arid habitats required by* Hoodia species *generally prevent their conversion to arable lands (Plowes, 2004).*

*Poor regeneration in natural populations has been reported. During the years 1996 to 2004, small populations of* H. gordonii *in the Spitskoppe, Brandberg and Namib Naukluft Park (Central Namib, Namibia) have been visited on various occasions. Juveniles were rarely found and there was evidence of the soft juvenile plants being browsed by game (Strohbach, 2004).*

*Various species have been impacted by local use for food and medicines.* Hoodia rustica *(sometimes considered a synonym of* H.officinalis*) is known only from a few localities on rocky hills in South Africa. The last plant at the Vosberg site was found and eaten in 1985.* H. flava *and* H. pilifera *are also utilised locally (Plowes, 2004). As early as 1937 it was reported from South Africa that* H. (Trichocaulon) pillansi *had been "almost exterminated through the zeal of collectors and because of its edible and supposedly medicinal properties". Formerly, the plant is said to have been fairly frequent, sufficiently so to give its name to one of the hills in the Witteberge, Ngaap Kop (Trichocaulon Hill) (Wynberg, 2004b).*

*Collecting appears to be the main potential threat. For example, the Northern Cape's Department of Agriculture, Land Reform, Environment and Conservation (DALEC) has reliably learned of* Hoodia *material being supplied to the international pharmaceutical market without permits. The illegal collection of* Hoodia *has escalated to such an extent that its future existence may well be 'under greater threat than ever before (Anon., 2004).*

**Conservation, management and legislation**

**South Africa:** *Hoodia* spp. are protected in the Northern Cape (Environmental Conservation Ordinance No. 19 of 1974). Permits are required for collecting, cultivation, transport or export. Similar regulations are applied in the Western Cape and Free State provinces.

Western Cape Nature Conservation has permitted developing companies to use a limited amount of wild harvested *Hoodia*.

Permits have been issued to the Council for Scientific and Industrial Research, which has set up a benefit sharing agreement with the local San communities.

**Botswana:** Harvesting is controlled by the *Agricultural Resources Conservation Act* [CAP. 35:06] in which *Hoodia* is listed as a veld product. Regulations for harvesting of veld products were published on 26 March 2004. Harvest permits are required and harvest areas are inspected by officers

***South Africa****:* The National Biodiversity Act (10 of 2004) *has recently been promulgated. Enforcement, however, will only be possible once regulations are in place. This legislation will provide national (including access and benefit sharing agreements) protection and international (including CITES) protection and other requirements for use of plant species such as* Hoodia spp. *(TRAFFIC East/Southern Africa, 2004).*

***Zimbabwe****:* H. lugardii *is a specially protected plant in terms of the* Zimbabwean Parks and Wildlife Act of 1975.

| Information provided and statements made by proponents in the Supporting Statement | Information provided and statements made by proponents in the Supporting Statement |
|---|---|
| from the Agricultural Resources Board. *Hoodia currorii* has been presented to the Board to become legally protected.<br><br>**Namibia**: All *Hoodia* species are legally protected requiring prior authorization for harvesting and trade. Harvesting is not currently authorized. The country intends to establish a controlled harvesting system. The status of *Hoodia* spp. has been assessed since 2001 and monitoring as part of a long-term plant conservation programme has been expanded, but funding is limited.<br><br>**Angola:** No information.<br><br>***In situ* protection:** *H. gordonii* occurs in the central Kalahari and Makgadikgadi National Parks (Botswana), the Ai-Ais/Richtersveld Transfrontier Park (South Africa), the Skeleton Coast Park and a new national park in southern Namibia (the former Sperrgebiet) as well as in several Conservancies. | |
| **Similar species** | |
| *Hoodia* species resemble one another and have been confused with certain cacti species, such as *Trichocerus spachianus.* | *There are superficially similar species within the family Apocynaceae (Asclepiadaceae) that occur in the same region as* Hoodia *spp. Large, flat dish-like flowers are generally a distinguishing feature of* Hoodia *spp.* |
| **Artificial Propagation** | |
| *Hoodia s*pp., are relatively difficult to cultivate, but are nevertheless used for horticultural purposes.<br><br>Cultivation trials have been set up in South Africa and Namibia, but the plants are not suitable for harvest yet. *Hoodia* is reported to have been cultivated in Chile and cloned from cell cultures. | Hoodia *spp. are grown by succulent plant enthusiasts around the world and are available from specialist nurseries.* H. gordonii *is considered one of the least difficult species to grow (Hewitt, 1993).* |
| **Other comments** | |
| | *Very little work has been conducted on identification of harvest sites and on assessment of damage after harvesting for trade. It is proposed that permission to export will only be given after a full Non-Detriment Finding (NDF) has been concluded. In return for following certain harvest criteria to ensure sustainability, the traders will be allowed to trade without CITES permits. However, legal trade volumes will only be known by the producer country. Ongoing monitoring and periodic re-examination of the NDF seem necessary to control the trade. It will be difficult to track the various purveyors of the plant material, since their identity and their actual involvement are not always clear. The proposed annotation may also create problems in enforcement in importing countries (TRAFFIC East/Southern Africa, 2004).*<br><br>*Wynberg (2004a) notes that a standardised international trading framework and monitoring regime for* Hoodia *needs to be put in place, and needs to ensure that range States capture the economic benefits that accrue from its commercialisation. However, she believes that the implications of the proposal need to be considered more thoroughly before it is approved.* |

**Reviewers:** P. Downs, J. Golding, B. Hargreaves, B. Huntley, D. Plowes, T. Ron, M. Strohbach, TRAFFIC East/Southern Africa, R. Wynberg.

**To annotate the listing of Euphorbiaceae in Appendix II to read:**
**"Artificially propagated specimens of *Euphorbia lactea* are not subject to the provisions of the Convention when they are:**
**(a) grafted on rootstocks of *Euphorbia neriifolia* L.;**
**(b) colour mutants; or**
**(c) crested-branch forming or fan-shaped.**
**Proponent: Thailand.**

**Summary**: Although somewhat ambiguously worded, it seems as if this proposal aims to exempt colour mutants or crest-forming (cristate) or fan-shaped individuals of the succulent euphorbia *Euphorbia lactea* from the provisions of the Convention when they are grafted onto rootstocks of the succulent euphorbia *E. neriifolia.* The proposal could also be read to mean that grafted forms should be exempt whether they were or were not colour mutants, or crested-branch forming or fan-shaped plants. If the proposal is accepted, *E. neriifolia* would become exempt from the provisions of the Convention only when serving as rootstock for the above forms of *E. lactea.*

*Euphorbia lactea* is a fairly large growing succulent euphorbia native to arid parts of India. The species is not listed by IUCN as threatened, nor is it included in the Indian Plant Red Data Book (1984-1990). It is widely grown as an ornamental plant, both in its wild form and as cristate or colour forms. Very large numbers of specimens are recorded in trade in CITES trade data (some 2.6 million specimens in the period 1993-2002). None of these is recorded as originating in the range State. It is unclear how many of these are grafted colour mutants or cristate individuals, although Thailand reports a substantial and evidently growing trade in these (220 000 specimens in 2002). The cristate and colour forms are traded as grafts on euphorbia rootstocks, notably *Euphorbia neriifolia.* The latter, which is also included in Appendix II under the general listing for succulent euphorbias, is also a native of India, where it is not considered threatened and is widely grown elsewhere. It is used in Ayurvedic medicine. Limited trade in this species is recorded in CITES trade data; none is recorded as originating in the range State or as wild-collected plants.

**Analysis**: The proposal is to exempt certain plants of two Appendix-II listed species from the provisions of the Convention. Although not stated in the proposal, the supporting statement notes that the rootstocks of *E. neriifolia* used (at least in Thailand) are artificially propagated. The proposed annotation could be amended to make it clear that only artificially propagated rootstocks are intended to be included. Under these conditions, the proposal would have no direct impact in itself on wild populations of either species. The question to be considered, therefore, is whether the proposal might have an adverse indirect impact on wild populations of these or other species through creating problems of enforcement. Neither species is currently considered threatened and there is very little likelihood that plants of wild origin of *E. neriifolia* will be used as rootstocks. Although there is lack of clarity in the proposal and its supporting statement as to what exactly constitutes a colour mutant, the grafted forms included in the proposal are unlikely to be confused with wild plants of any kind, nor with other euphorbias in trade. Grafted cristate forms could conceivably be confused with some artificially propagated grafted cristate cacti.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | **Taxonomy** |
| | **Range** |
| India. | Euphorbia neriifolia *also originates in India, but is widely cultivated and naturalised in the tropics, including Southeast Asia (Esser, 2004).* |
| | **IUCN Global Category** |
| | *Neither* E. lactea *nor* E. neriifolia *is included on the IUCN Red List.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Biological and trade criteria for retention in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| Proposed exemption only concerns artificially propagated plants. | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| Proposed exemption only concerns artificially propagated plants. | |
| **Retention in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| | *Cristate or fan-shaped forms and most colour mutants are unlikely to be confused with wild specimens of this or other euphorbia species, although cristate growth aberration may occasionally occur in nature.*<br>*Grafted plants are clearly artificially propagated.*<br>*Cristate forms may resemble some cristate cacti.* |
| **Other information** | |
| **Threats** | |
| | *Neither* Euphorbia lactea *nor* E. neriifolia *is currently known to be threatened.* |
| **Conservation, management and legislation** | |
| | |
| **Artificial propagation** | |
| Thailand reports exports of some 24 000 artificially propagated crested, fan-shaped or colour mutant *Euphorbia lactea* in 2001 and some 220 000 in 2002. | *CITES trade data record some 2.6 million specimens of* E. lactea *in trade in the period 1993-2002. None of these was reported from the country of origin (India). Limited trade in* E. neriifolia *was also recorded in the same period; again none was reported from the country of origin (India).* |
| **Other comments** | |
| | *Although the type specimen of* E. neriifolia *is from the Moluccas, Indonesia, the species is believed to be introduced there and to originate in the dry tropics of southern India (Esser, 2004).*<br>*Wording and intent of the proposal are somewhat ambiguous as it is unclear whether the proposed exemption is intended to apply to grafted specimens or colour mutants or cristate or fan-shaped forms, or whether it is intended to apply to specimens that are both grafted and either colour mutants or cristate or fan-shaped forms. It seems likely that the intent is the latter.*<br>*No specification is provided in the supporting statement as to exactly what colour forms would be exempted.*<br>*Under this annotation,* E. neriifolia *would implicitly become exempt from the provisions of the Convention, although only when serving as rootstock for grafted cristate or colour forms of* E. lactea*. This situation is analogous to that already prevailing with certain cactus species, namely* Harrisia '*Jusbertii*', Hylocereus trigonus *or* Hylocereus undatus*, which are implicitly exempt from* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | *the provisions of the Convention only when serving as rootstocks for grafted cacti lacking chlorophyll.*<br><br>*The issue of grafted plants is addressed in the working document submitted by the USA as Chair of the working group of the Plants Committee on Resolutions pertaining to plants, regarding review of Resolutions on Plants and Plant Trade and on definition of 'Artificially Propagated'.* |

**Reviewers:** TRAFFIC East/Southern Africa.

**To annotate the listing of Euphorbiaceae in Appendix II to read:**
**"The artificially propagated specimens of cultivars of *Euphorbia milii* are not subject to the provisions of the Convention when they are:**
**(a) traded in shipments of 100 or more plants;**
**(b) readily recognizable as artificially propagated specimens.**
**Proponent: Thailand.**

**Summary:** The proposal refers to artificially propagated plants of *Euphorbia milii* or Crown of Thorns, an ornamental succulent euphorbia which occurs in the wild only in Madagascar. The species is included in Appendix II of the Convention under the general listing for succulent euphorbias (which excludes artificially propagated specimens of cultivars of *Euphorbia trigona*). However, from the supporting statement, the intent of the proposal is principally to exempt from the provisions of the Convention, artificially propagated plants known as "poysean" euphorbias, grown in Thailand. These plants are complex hybrids of *E. milii* and *E. lophogona,* and should be referred to as *Euphorbia x lomi. E. lophogona* is itself also an ornamental succulent euphorbia which occurs in the wild state only in Madagascar, also included in Appendix II under the general listing of succulent euphorbias. The hybrid *E. x lomi* has been reported as occurring in the wild in Madagascar. The conservation status of the species *E. milii* and *E. lophogona* as a whole is unclear, although a number of wild forms (varieties and subspecies) of the former have recently been assessed for the IUCN Red List, eight as Vulnerable on the basis of having small and restricted populations and two as Endangered on the basis of very small and declining extents of occurrence. Both species and the hybrid form *E. x lomi* are very widely grown as ornamental plants, both in Madagascar and elsewhere, and are easy to propagate, by cuttings, through grafting or from seed. Many cultivars of *E. x lomi* have been developed, particularly in Thailand. These are traded as young rooted cuttings with or without flowers. Thailand records exports of nearly 800 000 such plants in 2002. Madagascar has reported exports of some 18 500 specimens of *E. milii* and over half a million specimens of *E. lophogona* in the period 1993-2002; of these some 5% of the former and 10% of the latter were reported as wild-collected although it is likely that a significant proportion (though not all) of these were artificially propagated. Named wild forms (subspecies or varieties) of *E. milii* from Madagascar are in cultivation and offered for sale in Europe although are likely to be traded in small quantities.

**Analysis**: The proposal concerns artificially propagated specimens and can therefore have no direct impact on wild populations. However, the taxonomy used in the proposal is incorrect, as the plants that, from the supporting statement, are intended to be excluded are in fact hybrids, *Euphorbia x lomi*. Amending the proposal to this effect could be interpreted as extending its scope as the other parent taxon of the hybrid, *Euphorbia lophogona,* is also currently included in Appendix II. The hybrid and both parents are native to Madagascar, and both parents are exported from that country in some quantity, sometimes as reportedly wild-collected plants. It is unclear how such specimens would be easily distinguished from artificially propagated plants in all cases.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | **Taxonomy** |
| Synonym: *Euphorbia bojeri.* | *The majority of plants in cultivation, including those with large floral bracts grown in Thailand, traded as Crown of Thorns are hybrids between* E. milii *and* E. lophogona. *They should be referred to as* Euphorbia x lomi *Rauh (Jankalski, 2000, Kimnach, 2000, Rauh, 1979).*<br><br>*Many of the plants in international trade are reportedly grafted (Smoley, 2000), although it is not clear if this is onto unimproved forms of* E. milii *or* E. lophogona, *or some other* Euphorbia *species.* |
| | **Range** |
| Madagascar. | Euphorbia lophogona *also occurs in Madagascar. The hybrid* E. x lomi (E. lophogona x E. milii) *has been reported as occurring in the wild in Madagascar (Rauh, 1979).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **IUCN Global Category** | |
| | *Insufficiently Known (K) (pre-1994 categories).* E. lophogona *is also classified as Insufficiently Known (K) (pre-1994 categories; Walter and Gillett 1998).*<br><br>*Ten* E. milii *varieties have been assessed for the 2004 IUCN Red List. Eight are classified as Vulnerable on the basis of having small and restricted populations, and two as Endangered on the basis of very small and declining extents of occurrence (2004 Red List, in prep.).* |
| **Biological and trade criteria for retention in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| Proposed exemption concerns artificially propagated specimens only. | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(I) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| Proposed exemption concerns artificially propagated specimens only. | |
| **Retention in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| | *It is unclear how artificially propagated specimens will be in all cases readily distinguished from wild-collected specimens.*<br><br>*Exports of some 18 500 specimens of* Euphorbia milii *from Madagascar in the period 1993-2002 are reported in CITES trade data; of these some 8 700 were reported as wild-collected although it is likely that a significant proportion (though not all) of these were artificially propagated (Jenkins, 1995).*<br><br>*Exports of over 500,000 specimens of* Euphorbia lophogona *from Madagascar in the period 1993-2002 are reported in CITES trade data; around 10% of these were reported as wild-collected although it is likely that a significant proportion of these were in fact artificially propagated (Jenkins, 1995).*<br><br>*Wild forms e.g.* E. m. tulearensis *(proposed for classification as Vulnerable by IUCN) and* E. m. vulcanii *(proposed for classification as Endangered by IUCN) are offered for sale in at least some European nurseries.*<br><br>*The hybrid form* E. x lomi (E. lophogona x E. milii) *has been reported from southern Madagascar in the area where the distributions of the two species overlap (Rauh, 1979).* |
| **Other information** | |
| **Threats** | |
| | |
| **Conservation, management and legislation** | |
| | *There is no specific legislation protecting wild plant species in Madagascar (Jenkins, 1995).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Artificial propagation** | |
| 'Poysean' euphorbias are artificially propagated in large numbers in Thailand, which reported exports of nearly 260 000 plants in 2001 and nearly 800 000 plants to 36 different countries in 2002. | *Both* E. lophogona *and* E. milii are *artificially propagated in Madagascar.*<br><br>*Most forms in commercial cultivation appear to be hybrids of* E. lophogona *and* E. milii, *referred to as* E. x lomi. *Three main groups are recognised:* E. x lomi *California Group;* E x lomi *Heidelberg Group; and* E. x lomi *Poysean Group. In addition, what appears to be a cultivar of* E. milii, E. milii *var.* hislopii *'Breon', originating at Tsimbazaza Botanical Gardens in Madagascar is widely cultivated (Jankalski, 2000).* |

**Reviewers:** TRAFFIC East/Southern Africa.

## Annotation of Orchidaceae in Appendix II to read as follows:

**Artificially propagated specimens of Orchidaceae hybrids are excluded from the provisions of the Convention when:**
**a) they are readily recognisable as artificially propagated specimens;**
**b) they do not exhibit characteristics of wild-collected specimens;**
**c) shipments are accompanied by documentation such as an invoice that indicates clearly the vernacular name of the orchid hybrids and is signed by the shipper.**

## Proponent: Thailand.

**Note:** Specimens that do not clearly meet the criteria for the exemption must be accompanied by appropriate CITES documents.

**Summary**: The proposed annotation aims to exclude from the provisions of the Convention, artificially propagated hybrids of all Appendix-II listed orchids if they can be readily recognised as artificially propagated specimens.

**Analysis**: Under the proposed annotation the specimens to be excluded from the provisions of the Convention are all artificially-propagated hybrids. Their removal from the Appendices should have no direct impact on wild populations of orchid species. However, it is unclear how the proposed annotation can be applied in practice, for a variety of reasons, and it appears therefore that adopting it may affect the control of trade in other taxa listed in the Appendices – that is all other members of the family Orchidaceae (with the existing exemptions noted above).

From the point of view of implementation of the proposed annotation, the following should be considered:

The annotation specifically refers to interspecific hybrids and therefore excludes species and their varieties and improved forms, which will continue to be subject to the provisions of the Convention whether they are artificially propagated or not. Several of the latter feature extensively in trade and cannot easily be distinguished from hybrids either when in flower or not.

Some trade in wild-collected orchids has been recorded in annual reports to CITES during the period 1991-2001. In a small number of cases this trade has been in a relatively large number of plants, although in all cases the volume of recorded trade is extremely small compared with that in artificially propagated plants. Some, though not all, of this trade may have been reported in error in CITES annual reports. Among species reportedly traded in some quantity as wild-collected plants are a number of species of *Cymbidium*. Because of their growth-form, plants in this genus may lose the characteristics of wild-collected plants if grown on for one or two seasons before export. They would then be extremely difficult to distinguish from hybrid Cymbidiums, particularly when not in flower. In other words, they would look very like forms regarded under the proposed annotation as exempt (under the given conditions) from the provisions of the Convention. Similarly, in the case of deciduous forms of *Dendrobium* it may not be possible to distinguish wild-collected specimens of species from artificially-propagated specimens of species and hybrids.

Currently eight species and two genera of Orchidaceae are included in Appendix I. Hybrids within the two genera (*Paphiopedilum* and *Phragmipedium)* are widely traded as artificially propagated plants and at least some of the other species have been hybridised with Appendix II listed species, these hybrids featuring in international trade. Resolution Conf. 11.11, on regulation of trade in plants, states that artificially propagated hybrids derived from one or more unannotated Appendix I species or other taxa shall be regarded as being included in Appendix II and entitled therefore to all exemptions applicable to artificially propagated specimens of species listed in Appendix II. This means that they can be traded with a certificate of artificial propagation. All the Appendix-I orchids remain unannotated in this regard. It seems therefore that the annotation in the current proposal would have the effect of excluding artificially propagated hybrids of Appendix-I listed orchids from the provisions of the Convention. Distinguishing wild-collected from artificially propagated plants of *Paphiopedilum* and *Phragmipedium* is not always easy and this could therefore create enforcement difficulties.

Article VII, paragraph 5 of the Convention allows for the use of a certificate of artificial propagation issued by the Management Authority to be used as an import or export permit. In Resolution Conf. 4.16, now replaced by Resolution Conf. 12.3, the Parties recognized that if certain conditions were met, phytosanitary certificates could serve as such certificates. At least some orchid exporting countries make use of this to expedite procedures in trade in artificially propagated orchids.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| **Range** | |
| | *The family Orchidaceae has a virtually worldwide distribution, occurring on all continents except Antarctica and on most islands.* |
| **IUCN Global Category** | |
| | *Not relevant to hybrids of domestic origin. Species of Orchidaceae range in status from Extinct to Not Threatened. The great majority of species remain unassessed using current IUCN threatened species categories.* |

**Biological and trade criteria for retention in Appendix II**

Not relevant as plants in question are all artificially-propagated hybrids without natural wild populations.

**Retention in Appendix II to improve control of other listed species**

**Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed**

**Other information**

**Similar species**

*See above.*

**Other comments**

*At least one country indicated that it made use of plant phytosanitary certificates as certificates of artificial propagation (as allowed under Article VII of the Convention) to expedite trade in orchid hybrids (TRAFFIC International, 2004).*

*Ritterhausen (2004) points out that the vast majority of orchids in international trade are hybrids, and believes that such hybrids should not require CITES permits.*

**Reviewers:** IUCN Orchid Specialist Group, B. Ritterhausen, TRAFFIC East/Southern Africa, TRAFFIC International.

## Annotation of Orchidaceae in Appendix II — Proponent: Switzerland

**Annotation of Orchidaceae in Appendix II to exclude artificially propagated hybrids of the following taxa, exclusively under the condition that specimens are flowering, potted and labelled, professionally processed for commercial retail sale and that they allow easy identification:**

***Cymbidium*** Interspecific hybrids within the genus and intergeneric hybrids
***Dendrobium*** Interspecific hybrids within the genus known in horticulture as "*nobile*-types" and "*phalaenopsis*-types," both of which are clearly recognizable by commercial growers and hobbyists
***Miltonia*** Interspecific hybrids within the genus and intergeneric hybrids
***Odontoglossum*** Interspecific hybrids within the genus and intergeneric hybrids
***Oncidium*** Interspecific hybrids within the genus and intergeneric hybrids
***Phalaenopsis*** Interspecific hybrids within the genus and intergeneric hybrids
***Vanda*** Interspecific hybrids within the genus and intergeneric hybrids

**The annotation to specifically read as follows:**
"Artificially propagated specimens of hybrids are not subject to the provisions of the Convention when:
a) they are traded in flowering state, i.e. with at least one open flower per specimen, with reflexed petals;
b) they are professionally processed for commercial retail sale, e.g. labelled with printed labels and packaged with printed packages;
c) they can be readily recognized as artificially propagated specimens by exhibiting a high degree of cleanliness, undamaged inflorescences, intact root systems and general absence of damage or injury that could be attributable to plants originating in the wild;
d) plants do not exhibit characteristics of wild origin, such as damage by insects or other animals, fungi or algae adhering to leaves, or mechanical damage to inflorescences, roots, leaves or other parts resulting from collection, and;
e) labels or packages indicate the trade name of the specimen, the country of artificial propagation or, in case of international trade during the production process, the country where the specimen was labelled and packaged; and labels or packages show a photograph of the flower, or demonstrate by other means the appropriate use of labels and packages in an easily verifiable way.
Plants not clearly qualifying for the exemption must be accompanied by appropriate CITES documents."

**Summary**: The proposed annotation aims to exclude from the provisions of the Convention artificially-propagated orchid hybrids that have some contribution from one or more of seven genera (in the case of *Dendrobium* of only two species within the genus) and that are shipped under a series of conditions. The annotation is intended to create an incentive for trade in artificially-propagated specimens by eliminating the need for CITES permits. Such trade is seen as a preferred alternative to trade in wild-collected specimens for which trade impacts are not precisely known. It is believed that removing at least some artificially-propagated specimens from CITES controls should also significantly reduce the workload of permit-issuing authorities, although the supporting statement also acknowledges that the annotation will place a burden of responsibility on inspection officials to ensure that specimens qualify for the exemption.

A somewhat similar proposal was put forward for consideration at CoP12, concerning the genera *Cattleya, Cymbidium, Dendrobium (phalaenopsis* and *nobile* types only), *Oncidium, Phalaenopsis* and *Vanda.* It was subsequently narrowed to apply only to the genus *Phalaenopsis* and in this form was adopted (see proposal Prop. 13.42 for further discussion). That proposal did not specify that shipments should be of flowering plants.

**Analysis**: Under the proposed annotation the specimens to be excluded from the provisions of the Convention are all artificially-propagated hybrids. Their removal from the Appendices should have no direct impact on wild populations of orchid species. However, it is unclear how the proposed annotation can be applied in practice and it appears therefore that adopting it may affect the control of trade in other taxa listed in the Appendices – that is all other members of the family Orchidaceae (with the existing exemptions noted above) and in particular species and naturally occurring hybrids within the genera *Cymbidium, Dendrobium, Miltonia, Odontoglossum, Oncidium, Phalaenopsis* and *Vanda.*

From the point of view of implementation of the proposed annotation, the following points should be considered:

The proposed annotation includes ca 55 000 hybrid gregi (ie. those with genetic contribution from at least one of the genera) but excludes a further ca 55 000 or more (ie. those that do not have genetic

contribution from one of the genera). As an example, under the annotation, an *Ada* x *Brassia* x *Oncidium* cross will be exempt from the provisions of the Convention (under the specific conditions set out), but an *Ada* x *Brassia* cross will not. Distinguishing between these will be difficult even for experts and even when plants are in flower. The number of registered hybrid *gregi* increases by around 1 000 each year. Distinguishing integeneric hybrid gregi that qualify for exemption from those that do not will not be possible on the basis of their names alone as the names of more recent intergeneric hybrids are not based on the names of the parent genera.

The annotation specifically refers to interspecific hybrids and therefore excludes species and their varieties and improved forms, which will continue to be subject to the provisions of the Convention. Several of the latter in the specified genera feature extensively in trade and cannot easily be distinguished from hybrids either when in flower or not.

The proposed annotation asserts that both "*nobile*-type" and "*phalaenopsis*-type" *Dendrobium* hybrids are clearly recognizable by commercial growers and hobbyists. However, no clear definition of these hybrids is contained within the annotation. Both *D. nobile* and *D. phalaenopsis* have been extensively used in the production of a wide range of hybrids. The annotation could be interpreted to mean that any hybrid with parentage from either species is exempt from the provisions of the Convention, or only those that closely resemble the parent species. In addition, it is not evident that inspection officials will be able to clearly recognize these hybrids or, for example, distinguish them from artificially propagated plants of the parent species.

Some trade in wild-collected plants in all six genera has been recorded in annual reports to CITES during the period 1991-2001 (in the case of *Dendrobium* in *D. nobile* itself, as well as in a range of other species). In a small number of cases this trade has been in a relatively large number of plants, although in all cases the volume of recorded trade is extremely small compared with that in artificially propagated plants. Some, though not all, of this trade may have been reported in error in CITES annual reports. Among species reportedly traded in some quantity as wild-collected plants are a number of species of *Cymbidium*. Because of their growth-form, wild plants in this genus may lose the characteristics of wild-collected plants if grown on in nurseries for one or two seasons before export. It may be difficult for non-experts to distinguish these from some hybrid *Cymbidium* even when in flower.
Article VII, paragraph 5 of the Convention allows for the use of a certificate of artificial propagation issued by the Management Authority to be used as an import or export permit. In Resolution Conf. 4.16, now replaced by Resolution Conf. 12.3, the Parties recognized that if certain conditions were met, phytosanitary certificates could serve as such certificates. At least some orchid exporting countries make use of this to expedite procedures in trade in artificially propagated orchids.

| **Information provided and statements made by proponents in the Supporting Statement** | **Comments, observations and additional information provided in the review process** |
|---|---|
| | **Taxonomy** |
| As of early 2004 there are around 55 000 registered hybrids involving the seven natural genera of *Cymbidium, Dendrobium, Miltonia, Odontoglossum, Oncidium, Phalaenopsis* and *Vanda*. | |
| | **Range** |
| | *Hybrids are produced worldwide.* Cymbidium, Dendrobium, Phalaenopsis *and* Vanda *occur in the wild in the Asia-Pacific region,* Miltonia, Odontoglossum *and* Oncidium *in Latin America.* |
| | **IUCN Global Category** |
| | *Not relevant to hybrids of domestic origin. Species in these genera range in status from Extinct to Not Threatened. The great majority of species remain unassessed using current IUCN threatened species categories.* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|

**Biological and trade criteria for retention in Appendix II**

Not relevant as plants in question are all artificially-propagated hybrids without natural wild populations.

**Retention in Appendix II to improve control of other listed species**

**Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed**

*The CITES Orchid checklist (vols 1-3) accepts 67 names for* Cymbidium *with 230 synonyms, 692 names for* Dendrobium *with 1225 synonyms (part of the genus only), 14 names for* Miltonia *with 38 synonyms, 81 names for* Phalaenopsis *with 194 synonyms, and 59 names for* Vanda *with 98 synonyms.* Oncidium *and* Odontoglossum *have yet to be covered in the checklist. Two wild species in the genera under consideration are currently included in Appendix I:* Dendrobium cruentum *and* Vanda coerulea*. The latter is the subject of a proposal (Prop. 44) presented to the current CoP for transfer to Appendix II.*

*Four taxa of* Cymbidium *have been recorded in CITES annual reports as traded as wild-collected plants in significant quantities (over 5000 plants) during the period 1991-2001 (*Cymbidium aloifolium, C. ensifolium spp. haematodes, C. sinense *and* C. tracyanum*). When grown on in nurseries for one or more seasons, these may lose the characteristics of wild-collected plants (Anon. 2002*). *A wide range of* Dendrobium *spp. (ca. 220, plus a number traded as "*Dendrobium *spp.*") *has been recorded in CITES annual reports as traded as wild-collected plants during the period 1991-2001, some (including* D. nobile*) in significant numbers.*

**Other information**

**Similar species**

*See above.*

**Other comments**

*At least one country indicated that it made use of plant phytosanitary certificates as certificates of artificial propagation (as allowed under Article VII of the Convention) to expedite trade in orchid hybrids (TRAFFIC International, 2004). The following comments have been made (Ritterhausen, 2004):*

- *requiring plants to be in pots will contravene plant health regulations in many countries that require roots of imported plants to be trimmed and free of all growing medium;*
- *it is impractical to require plants to be in flower as the optimum time to ship orchids is when they are dormant, not in bloom;*
- *many shipments made by commercial growers are mixed, comprising plants of different ages (seedlings or near-adult size) or of different hybrids;*
- *having some hybrids requiring certification and some not will confuse officials such as customs officers, and cause harmful delays.*

**Reviewers:** IUCN Orchid Specialists Group, B. Ritterhausen, TRAFFIC International, TRAFFIC East/Southern Africa.

## Amendment of the annotation of Orchidaceae in Appendix II regarding *Phalaenopsis* to read as follows:

**Artificially propagated specimens of hybrids within the genus *Phalaenopsis* are not subject to the provisions of the Convention when:**
**a) specimens are traded in shipments consisting of individual containers (i.e. cartons, boxes, or crates) containing 20 or more plants each;**
**b) all plants within a container are of the same hybrid, with no mixing of different hybrids within a container;**
**c) plants within a container can be readily recognized as artificially propagated specimens by exhibiting a high degree of uniformity in size and stage of growth, cleanliness, intact root systems, and general absence of damage or injury that could be attributable to plants originating in the wild;**
**d) plants do not exhibit characteristics of wild origin, such as damage by insects or other animals, fungi or algae adhering to leaves, or mechanical damage to roots, leaves, or other parts resulting from collection; and**
**e) shipments are accompanied by documentation, such as an invoice, which clearly states the number of plants and is signed by the shipper.**

**Plants not clearly qualifying for the exemption must be accompanied by appropriate CITES documents.**

## Proponent: Switzerland.

**Summary**: The proposal is for a small modification of an annotation regarding an exemption for orchids in the genus *Phalaenopsis* accepted at CoP 12. The modification proposed would reduce the minimum number of specimens in each container in a shipment qualifying for exemption from 100 to 20.

The Plants Committee, at its 14th meeting (Windhoek, February 2004) discussed implementation of this annotation. It was reported at the meeting that an informal survey of selected orchid-exporting and importing countries and consultations with US CITES enforcement officials had found no shipments of *Phalaenopsis* hybrids without CITES export certificates, indicating that the exemption allowed for under this annotation had not been taken up. Three reported reasons were given for the failure to use this exemption: (1) some exporters were not aware of its existence; (2) some exporters were aware of it, but feared that importing countries would not recognize it and would detain shipments that lacked CITES documents; and (3) the current minimum number of plants per container (100) was too high because most shipments involved containers with far fewer plants.

**Analysis**: This proposed amendment attempts to overcome one of the reported reasons for the apparent failure to date of uptake of this exemption, agreed at CoP12. It does not address the other reported reasons for failure of uptake. It also does not address the overall problems of implementing this annotation, discussed in the analysis by IUCN and TRAFFIC of the (wider) proposal made at CoP12 that led to this annotation and in the present analyses to proposals Prop. 13.40 and 13.41 concerning artificially propagated orchid hybrids. It is unclear what impact its adoption would have. The imposition of a minimum number of 100 specimens in a container made in the original annotation was a precautionary measure to provide assurance that specimens were artificially propagated, it being reasoned that wild-collected specimens would be more likely to be shipped in smaller quantities. Reduction of the number of specimens as proposed here might be interpreted as weakening this precautionary measure.

Article VII, paragraph 5 of the Convention allows for the use of a certificate of artificial propagation issued by the Management Authority to be used as an import or export permit. In Resolution Conf. 4.16, now replaced by Resolution Conf. 12.3 on permits and certificates, the Parties recognized that if certain conditions were met, phytosanitary certificates could serve as such certificates. At least some orchid exporting countries make use of this to expedite procedures for trade in artificially propagated orchids.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| | *The CITES Orchid Checklist recognises 81 names for* Phalaenopsis *with 194 synonyms.* |
| **Range** | |
| **IUCN Global Category** | |
| **Biological and trade criteria for retention in Appendix II** | |
| Not relevant as plants in question are all artificially-propagated hybrids without natural wild populations. | |
| **Retention in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| **Other information** | |
| **Similar species** | |
| | *See above.* |
| **Other comments** | |
| | *At least one country indicated that it made use of plant phytosanitary certificates as certificates of artificial propagation (as allowed under Article VII of the Convention) to expedite trade in orchid hybrids (TRAFFIC International 2004).*<br>*Ritterhausen (2004) believes that exemptions that cover some hybrid orchids but exclude others create considerable enforcement problems and would be likely to lead to potentially harmful delays.* |

**Reviewers:** IUCN Orchid Specialist Group, B. Ritterhausen, TRAFFIC East/Southern Africa, TRAFFIC International.

## Transfer of the Christmas Orchid C*attleya trianaei* from Appendix I to Appendix II. Proponent: Colombia.

**Summary**: *Cattleya trianaei* is a very attractive orchid species with large, variable flowers, confined in the wild to the upper part of the Rio Magdalena basin in the Andean region of Colombia. Historically some 16 subpopulations have been recorded, although one has reportedly disappeared. The species grows mainly on trees but sometimes also on rocks; it is said to be adaptable, capable of growing in disturbed habitats and reaching flowering size fairly rapidly. The species is popular in cultivation and, historically, large numbers of plants were collected from the wild to fuel international trade. Demand for the species has reportedly diminished recently. The species has been listed in Appendix I since 1975. As with other Appendix-I listed orchids, seedling or tissue cultures obtained *in vitro*, in solid or liquid media, transported in sterile containers are not subject to the provisions of the Convention. Around 4 000 plants were recorded in trade in CITES trade data from 1990-2002. One consignment of four plants from Ecuador (not a range State) in 1991 was recorded as of wild origin.

**Analysis**: From information provided in the supporting statement, *C. trianaei* may still meet the criteria for inclusion in Appendix I (Resolution Conf. 9.24, Annex I, Criteria A and B). Known populations are small and fragmented, with a restricted area of distribution. The species is also known to be in international trade, although it is evident that this is entirely or almost entirely as improved forms or as hybrids. It appears unlikely that transfer to Appendix II will stimulate demand for wild collected plants of the species, nor is transfer to Appendix II likely to cause problems in enforcing the Convention for other Appendix-I listed species. Precautionary measures as called for in Annex 4 B2b of Resolution Conf. 9.24 are not well set out in the supporting statement to the proposal. However, controls of registered nurseries propagating this species in Colombia are reportedly good.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | **Taxonomy** |
| | **Range** |
| Colombia. | |
| | **IUCN Global Category** |
| | *Indeterminate (pre-1994 categories; Walter and Gillett 1998).* |

### Biological criteria for inclusion in Appendix I

**A) Small wild population**

**(i) Population or habitat decline; (ii) small subpopulations; (iii) one subpopulation; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour**

| | |
|---|---|
| Three (out of 15 known) subpopulations were surveyed in 2002. These had a total of some 145 individuals, of which 118 were recognised as adults and 27 as juveniles. | |

**B) Restricted area of distribution**

**(i) Fragmented or localised population; (ii) large fluctuations in distribution or subpopulations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential**

| | |
|---|---|
| This species is confined to the upper part of the Rio Magdalena basin in the Andean region of Colombia. There is information historically on 16 subpopulations. As of 2002, one of these had reportedly disappeared. | |
| Maps indicate that surviving natural ecosystems within the potential area of distribution of the species | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| are small and fragmented. | |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| Historically the species was heavily collected for the export trade. Such pressure has reportedly diminished greatly in the past 40 years with the advent of extensive artificial propagation. Two of three subpopulations surveyed in 2002 had a high proportion of juveniles, indicating a healthy population structure. | |
| **D) Status suggests inclusion in Appendix I within 5 years** | |
| | |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| The species is widely cultivated and is in trade, though with no evidence of trade in wild-collected plants in the past ten years. | *Some 4 000 plants have been recorded in trade in CITES trade data for the period 1990-2002. Four plants exported from Ecuador to the USA in 1991 were recorded as wild origin; Ecuador is not a range State.* |
| **Precautionary Measures** | |
| **B2a: CoP satisfied that its transfer to Appendix II will not cause enforcement problems for other species included in Appendix I** | |
| | *No other species of* Cattleya *is included in Appendix I. The vast majority of orchids are included in Appendix II.* |
| **B2b: CoP satisfied with appropriate enforcement controls and compliance with the requirements of the Convention** | |
| | *Precautionary measures are not set out in the proposal. However, a review of the nursery system in Colombia carried out by TRAFFIC South America indicated that controls were good (TRAFFIC South America, 2004).* |
| **Other information** | |
| **Threats** | |
| Conversion of its habitat for agriculture, livestock grazing and harvesting of wood; local exploitation. | |
| **Conservation, management and legislation** | |
| The species is not specifically protected in Colombian legislation. In 2002 a pilot project was implemented to develop an action plan for the conservation of orchids of the genus *Cattleya* in Colombia. However, there is currently no overall management plan for the species, although, being Colombia's national flower, it is the subject of a number of different conservation efforts. The national network of botanical gardens has established micropropagation of this species as a priority. Two local reserves protect populations of the species in the departments of Huila and Cundinamarca. It may occur in two national parks. | *Security problems in the area where the species occurs hampers conservation efforts on the ground (TRAFFIC South America, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Similar species** | |
| The species reportedly hybridises in the wild with *Cattleya warsewiczii* (App. II). The species may be easily confused with other *Cattleya* species and hybrids when not in flower. | |
| **Artificial propagation** | |
| The species has been artificially propagated in Colombia since 1950. There are currently five registered commercial nurseries artificially propagating the species in the country. The species is also widely propagated elsewhere.<br><br>There are also specimens in at least five botanic gardens in Colombia; in four of these, specimens come from wild populations. | *Nurseries in Colombia grow large numbers of artificially propagated plants of this species (TRAFFIC South America, 2004).* |
| **Other comments** | |
| | *TRAFFIC South America (2004) notes that demand for this species has diminished in recent years. With the ready supply of artificially propagated plants, there is little incentive to collect plants from the wild for national or international trade.* |

**Reviewers:** IUCN Orchid Specialist Group, TRAFFIC South America.

## Transfer of the Blue Vanda *Vanda coerulea* from Appendix I to Appendix II. Proponent: Thailand.

**Summary**: *Vanda coerulea* is an attractive orchid with blue flowers that occurs in eastern Asia in north-east India, south-west China, Myanmar and Thailand. Its status in the wild is currently unclear, although it has a relatively wide distribution. The species has been in cultivation since the 19th century and is widely grown as an ornamental. It has been included in CITES Appendix I since 1979. There has historically been substantial trade in wild-collected plants; however, plants currently grown and traded appear to be almost entirely improved forms and hybrids. There is at present no evidence of international trade in wild-collected plants of this species.

**Analysis**: There is insufficient information to determine whether *Vanda coerulea* still meets the criteria for inclusion in Appendix I (Resolution Conf. 9.24 Annex I Criteria A, B, C and D). Its area of distribution is evidently quite wide, although fragmented. There are no recent reliable population data so it is impossible to determine whether the wild population is small or not. The proponent states that there is a large population in China and in Shan State, Myanmar, although the species is still regarded as threatened in China and there are some indications of population decline in Myanmar. Overall population trends are also unclear although habitat loss and degradation is undoubtedly occurring within its range. The species is in international trade, although apparently almost entirely as improved forms or as hybrids. It appears unlikely that transfer to Appendix II will stimulate major international demand for wild-collected plants of the species, nor is such a transfer likely to create problems in enforcing the Convention for other Appendix-I listed species. However, transfer from Appendix I to Appendix II also requires that the precautionary measures of Resolution Conf. 9.24 Annex 4 B2b are satisfied. The information provided in the supporting statement on implementation of precautionary measures appears to be insufficient.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| | Vanda coerulescens *Lindl. given as synonym;* Vanda coerulescens *Griff. is recognized as a separate species (Orchid Checklist, Vol 3, 2001).* |
| **Range** | |
| China, India, Myanmar, Thailand. | |
| **IUCN Global Category** | |
| | *No overall classification. Classified as Rare (pre-1994 categories) in the following Indian States: Arunachal Pradesh; Assam; Manipur; Meghalaya; Mizoram; Nagaland. Classified as Indeterminate (pre-1994 categories) in Myanmar and Thailand.* |
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| A large population exists in undisturbed forests of Yunnan and Guizhou provinces, China, and in various forests of Shan State, Myanmar. | *The species is reported still to be threatened in China (TRAFFIC East Asia, 2004).*<br><br>*Reported in 1981 as very sparse even in remote forest areas in the Jaintia Hills in Meghalaya, Assam, where it had been abundant – and heavily collected – in the 19th century (Balakrishnan, 1981).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| Reported to be widely distributed in Assam (India), widespread in Myanmar and with scattered distribution over 500 km in western and northern Thailand. | *Restricted to an altitudinal range of between 800 and 1 700 m (Singchi* et al*., 1999).* |
| **C) Decline in number of wild individuals** | |
| **(i) Ongoing or historic decline; (ii) inferred or projected decline** | |
| Indications of a population decline in Myanmar through collection of plants.<br>Historic declines in India and Thailand from over-collection have halted, and populations in these countries are reportedly recovering. | |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| The species is in trade, although apparently almost entirely as artificially propagated plants. | |
| **Precautionary Measures** | |
| **B2a: CoP satisfied that its transfer to Appendix II will not cause enforcement problems for other species included in Appendix I** | |
| | *No other species of* Vanda *is included in Appendix I. The vast majority of orchids are included in Appendix II.* |
| **B2b: CoP satisfied with appropriate enforcement controls and compliance with the requirements of the Convention** | |
| | *No precautionary measures are specified in the proposal.* |
| **Other information** | |
| **Threats** | |
| Collected reportedly for local use in Myanmar. | *Declines in forest cover are reported from the countries where the species occurs (FAO, 2000). This is likely to have an adverse effect on populations of the species.*<br>*Reportedly used locally in Arunachal Pradesh, India by Wanchu tribes of Tirap district for decoration during festival dances (Anon. 2004)* |
| **Conservation, management and legislation** | |
| Export of wild-collected specimens reportedly prohibited in all range States.<br>Reintroduction has taken place in Thailand. | |
| **Similar species** | |
| | |
| **Artificial propagation** | |
| Artificially propagated by a very few nurseries in Malaysia and the USA. | *Widely available as improved forms and hybrids in North America, Europe, Asia and Australia.* |

**Reviewers:** IUCN Orchid Specialist Group, TRAFFIC Southeast Asia.

**Addition of annotation # 1 to the listing of the Desert-living Cistance *Cistanche deserticola* (Appendix II):**
**"Designates all parts and derivatives, except:**
**a) seeds, spores and pollen (including pollinia)**
**b) seedlings or tissue cultures contained *in vitro,* in solid or liquid media, transported in sterile containers; and**
**c) cut flowers of artificially propagated plants."**
**Proponent: China.**

**Summary**: *Cistanche deserticola* is a parasitic herb that grows on the roots of *Haloxylon ammodendron,* found in China and Mongolia and possibly one or more Central Asian republics. The dried stem is used to treat a variety of conditions including kidney problems, impotence and infertility. It is referred to as Herba Cistanches although is more often traded under the name of 'rou cong rong'. *C. deserticola* was included in Appendix II in 2000, with an annotation that specified whole and sliced roots and parts of roots, excluding manufactured parts or derivatives. It was subsequently noted that the species is a parasitic plant and therefore does not possess roots. As noted in the supporting statement, the annotation was deleted in 2002 under a misapprehension that this would mean that all readily recognizable parts and derivatives would be included in Appendix II. The current listing for the species is not annotated at all. Article I of the Convention (Definitions), indicates that a "specimen" of an Appendix-II listed plant species (i.e., an entity covered by the Convention) means any plant, whether alive or dead, and any readily recognizable part or derivative thereof specified in Appendix II in relation to that species. As no parts or derivatives are currently specified for *Cistanche deserticola* then none is currently covered by the listing. The listing therefore currently only covers whole plants. In line with the intent of both the original proposal and the change made at CoP12, this proposal aims to extend the listing to cover all parts and derivatives except seeds and pollen, seedlings and tissue cultures *in vitro* and cut flowers of artificially propagated plants. Under the Convention "all parts and derivatives" must mean all readily recognizable parts and derivatives. In Resolution Conf. 9.6 the Parties agreed that the term 'readily recognizable part or derivative', as used in the Convention, shall be interpreted to include any specimen which appears from an accompanying document, the packaging or a mark or label, or from any other circumstances, to be a part or derivative of an animal or plant of a species included in the Appendices, unless such part or derivative is specifically exempted from the provisions of the Convention.

A number of *Cistanche* species are important medicinal plants in traditional Chinese medicine. The dried stem of *C. deserticola* is very similar to those of *C. ambigua, C. tubulosa, C. salsa* and *C. sinenesis,* which are also traded. *C. deserticola* is advertised for sale both as a single ingredient and as mixed formulations in the UK, US, China and Hong Kong. In Hong Kong alone, at least 42 different brands of proprietary Chinese medicinal products containing parts or derivatives of this species are available.

**Analysis**: The current, unannotated listing only covers whole plants, which are not significantly in trade. It therefore serves no practical purpose. The proposed annotation effectively covers all readily recognizable parts and derivatives, including labelled manufactured products, which was the intent of both the original proposal and the change made at CoP12. Manufactured products containing *Cistanche deserticola* are generally marked or described as containing *Cistanche*, although it is unclear what proportion is identified to species level. Only those that are would be considered readily recognisable under the provisions of Resolution Conf. 9.6. It should be noted that the problem of distinguishing specimens of *Cistanche deserticola* from specimens of *Cistanche* not included in the Appendices also appears to apply to the stems.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Discussion** | |
| The main part of the *Cistanche deserticola* plant is comprised of subterranean or above ground stems, and it is mainly these stems that are used for medicinal purposes.<br>The current proposal seeks to annotate the listing of | Cistanche deserticola *is found in China and Mongolia. It is parasitic and primarily found on the roots of* Haloxylon ammodendron. *The species is important in traditional Chinese medicine where the dried stem is referred to as Herba Cistanches and is used to treat a* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| *C. deserticola*, so that all parts and derivatives that feature in trade are included in Appendix II, in line with the original intent of the proponent. | *variety of conditions, including kidney problems, impotence and infertility.*<br><br>*The dried stem is very similar to those of* C. ambigua, C. tubulosa, C. salsa *and* C. sinensis, *which are also traded (IUCN/SSC and TRAFFIC, 2000).*<br><br>*The species is in demand for trade nationally and internationally and supplies are becoming depleted through over-exploitation. National demand within China was estimated at 450–550 tonnes in 1995 with 120 tonnes produced for international trade. According to traders about 80 mt per year were imported to Hong Kong before CoP11, but this then decreased to about 10 mt per year. Consequently, the wholesale price increased eight-fold (Lee, 2001).*<br><br>*The Republic of Korea reports substantial imports of "*cistanchis herba*" which includes both* Cistanche deserticola *and* C. salsa: *ca. 40 tonnes in 2000; ca 80 tonnes in 2001; ca 110 tonnes in 2002; and ca 50 tonnes in 2003. Imports in the first part of 2004 (ca 45 tonnes) have all been reported under* C. salsa (Republic of Korea CITES MA, 2004).<br><br>*Harvest of* C. deserticola *has been prohibited in China since 2000. However, enforcement of this ban is weak and it is still reportedly traded in raw and processed forms including pharmaceutical products and medicated wine for use as food tonics (TRAFFIC East Asia, 2002).*<br><br>*It is not clear what proportion of the trade is likely to be in stem pieces and what proportion is in ready manufactured medical powders, tonics, pills etc. (TRAFFIC East Asia, 2002). However, much of the trade in this species could be in ready-made tonics and medicines. In Hong Kong alone, at least 42 different brands of proprietary Chinese medicinal products containing parts or derivatives of this species are available (Anon., 2002). It is not clear what proportion of medicines labelled as containing* Cistanche *identify the species concerned.*<br><br>*China reported the export of 4 200 kg of* Cistanche *derivatives of wild origin to Japan in 2000.* |

**Reviewer:** TRAFFIC East Asia.

## Transfer of *Chrysalidocarpus decipiens* from Appendix II to Appendix I. Proponent: Madagascar.

**Summary**: *Chrysalidocarpus (Dypsis) decipiens* is a palm with a distinctive "bottle" trunk confined in the wild to central Madagascar where the population was estimated in 1997 at around 100 individuals in forest fragments in rocky sites or along streams. It is not specifically protected in Madagascar. It has been included in Appendix II since 1977. The species is in cultivation in Madagascar and elsewhere, and is exported from Madagascar in the form of seeds and possibly as young plants (although exports of plants from Madagascar recorded in CITES trade data are at a very low level, with none at all recorded since 1995). CITES trade data report substantial trade in artificially propagated plants in the early 1990s, almost all between member States of the European Union. Eight other species of Malagasy palm are currently included in Appendix II.

**Analysis**: The species appears to meet the criteria for inclusion in Appendix I following Resolution Conf. 9.24, Annex I Criterion A. It has an extremely small, fragmented population susceptible to a range of adverse impacts, and is known to be in international trade. However, most or all export from the range State is believed to be in the form of seed, which is difficult to distinguish from that of other Malagasy palms. Enforcement of an Appendix-I listing is likely to be challenging.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| **Taxonomy** | |
| *Dypsis decipiens* (Dransfield and Beentje, 1995). | *CITES taxonomy refers to the species as* Chrysalidocarpus decipiens. |
| **Range** | |
| Madagascar. | |
| **IUCN Global Category** | |
| | *Endangered (EN D). Assessed 1997* (IUCN Red List 2003). |
| **Biological criteria for inclusion in Appendix I** | |
| **A) Small wild population** | |
| **(i) Population or habitat decline; (ii) small sub-populations; (iii) one sub-population; (iv) large population fluctuations; (v) high vulnerability due to biology or behaviour** | |
| Some 200 individuals were counted in the field in 1995. | *Population in 1997 estimated as perhaps 100 individuals (IUCN Red List 2003).* |
| **B) Restricted area of distribution** | |
| **(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability due to biology or behaviour; (iv) decrease in distribution, population, habitat or reproductive potential** | |
| Plants are known from a few sites scattered through the central plateau of Madagascar, where they are vulnerable to fire, forest clearance and destructive local use. | |
| **Trade criteria for inclusion in Appendix I** | |
| **The species is or may be affected by trade** | |
| The species is exported from Madagascar as seeds and plantlets. Seeds are collected from wild plants; because they are not covered by CITES there are no data on quantities exported. | *Large-scale international trade was reported in CITES trade data for the early 1990s, comprising artificially propagated plants exported from Denmark, Germany, and the Netherlands, chiefly to Austria, Finland and Sweden (ca. 240 000 plants* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
|---|---|
| | *reported in total). Little trade reported in CITES trade data since then and none since 1998. Negligible reported export trade in plants from Madagascar. Reported export of 141 wild specimens from Tanzania to USA in 1996 is undoubtedly an error.*<br>*Seeds of Madagascar origin on sale in Australia were advertised on the Internet in 2004.* |

**Other information**

**Threats**

| | |
|---|---|
| Threatened by burning, habitat clearance, and local use. | |

**Conservation, management and legislation**

| | |
|---|---|
| The species is not known to occur in any protected areas. | *There is no legislation protecting individual plant species in Madagascar (Jenkins, 1995). Madagascar has been the subject of the first country-based Significant Trade Review. Under this process, an Action Plan for the Reform of Madagascar's Wildlife Export Trade, addressing CITES-listed as well as non-CITES species, has been agreed by the Malagasy authorities and presented to the Animals and Plants Committees. Recommendations for implementation of the plan have been made by these Committees and mechanisms for implementation are currently being explored*. |

**Similar species**

| | |
|---|---|
| | *Seeds and young plants are likely to be difficult to distinguish from those of other palms of which Dransfield and Beentje (1995) recognise 176 species in Madagascar, including 140 species included in the genus* Dypsis*.* |

**Artificial propagation**

| | |
|---|---|
| . | *The species is widely grown outside Madagascar.* |

**Reviewer:** TRAFFIC East/ Southern Africa.

## Annotation of the Himalayan Yew *Taxus wallichiana* in Appendix II.

**Amend the annotation for *Taxus wallichiana* (currently Annotation # 2, which excludes chemical derivatives and finished pharmaceutical products) to read:**

**Designates all parts and derivatives, except:**

**a) seeds and pollen; and**

**b) finished pharmaceutical products**

## Proponents: China and United States of America.

**Summary**: *Taxus wallichiana* was included in Appendix II in 1994 with an annotation to exclude a) seeds and pollen; b) seedling or tissue cultures obtained *in vitro* etc.; c) cut flowers of artificially propagated plants; and d) chemical derivatives and finished pharmaceutical products. The current proposal aims to ensure that chemical derivatives are now included in the listing and CITES trade controls required, whilst still excluding finished pharmaceutical products. The proposal is supported by the Plants Committee.

The original listing of Himalayan Yew *Taxus wallichiana* was stimulated by concern that populations of the species had declined as a result of over-exploitation for production of taxanes. The species has been assessed as threatened in China, Bhutan and northern India. The bark and leaves of *T. wallichiana* and other species within the genus *Taxus* contain taxanes, particularly paclitaxel, which is traded as Taxol®. This has been widely used to produce drugs for cancer treatment. Although paclitaxel can be artificially synthesised this cannot yet be done on a viable commercial scale. The bulk of international trade continues to be in chemical extracts such as paclitaxel produced from harvested *Taxus* and exported by large pharmaceutical suppliers. However, as chemical derivatives from this species are currently exempt from the provisions of the Convention, most international trade is outside CITES trade controls and unreported and the listing is therefore not effective in ensuring that harvest for trade remains within sustainable limits. By extending the listing to include chemical derivatives of *T. wallichiana* it is hoped to bring trade in this species under more effective control.

**Analysis**: The proposal to change the annotation reflects the current situation regarding the commodities derived from *Taxus wallichiana* that are actually in international trade. If accepted, the proposed annotation, which is supported by the Plants Committee, will enhance implementation of the listing of this medicinal plant species in CITES Appendix II.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| When *T. wallichiana* was listed in Appendix II at CoP9, the Parties agreed not to regulate the trade in chemical derivatives. However, the extract (e.g., crude, semi-purified and active pharmaceutical ingredient) is the commodity actually exported, rather than plant biomass. Since the listing, the bulk of international trade has consisted of chemical extracts (e.g., paclitaxel) exported by large pharmaceutical suppliers.<br><br>To regulate the commodities in trade and allow range States to better monitor and control the export and import of this species, and to prevent unsustainable harvest, the proponent seeks to include all parts (except seeds and pollen), and all chemical derivatives, but not finished pharmaceutical products.<br><br>China fully supports this proposal, other range States have not responded.<br><br>*Taxus* spp. are taxonomically complicated. The original listing of the species includes one taxonomic synonym, | T. wallichiana *was proposed for inclusion in Appendix II to regulate the large-scale trade in parts and derivatives for the pharmaceutical industry. However, the listing was annotated to exclude chemical derivatives from trade control.*<br><br>*Surprisingly, for a species apparently in high demand, CITES trade data from 1995-1998 did not record any trade in* T. wallichiana *(Schippmann, 2001). However, according to later CITES trade records, between 1999 and 2002, China reported the export of extracts and derivatives. This trade peaked in 1999 when 2 000 kg of derivatives were reported as exported to both India and Indonesia.*<br><br>*There is evidence of a significant domestic demand in India and China. In India,* T wallichiana *has been found on offer in several major markets and there are at least three extraction companies. These extracts are thought to be exported, but there are no CITES records of such trade (Schippmann, 2001). The only reported CITES trade in* Taxus wallichiana *from India is the export of 100 kg of leaves in 2001, with the source given as artificially propagated.* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| *T. baccata* subsp. *Wallichiana*. At CoP12, the *World Checklist and Bibliography of Conifers* (Farjon, 2001), was adopted as the CITES standard checklist for conifer species. According to this reference there are six synonyms of *Taxus wallichiana* to be added, *T. nucifera, T. wallichiana* var. *yunnanenis, T. chinensis* var. *yunnanensis, T. yunnanensis, T. contorta* and *T. orientalis*. Only the latter three are currently in use and are included in the CITES identification sheet.<br><br>Species from southwest China described in 1978 as *T. wallichiana* and *T. yunnanensis* are now recognized as respectively *T. fuana*, a new species, and *T. wallichiana*.<br><br>The Plants Committee reviewed the current listing during its Tenth Meeting (Shepherdstown, 2000) and at the Eleventh Meeting (Langkawi, 2001) and decided that exclusion of chemical derivatives in the listing was ineffective. Agreement on the proposal to annotate the current listing was reached at the Twelfth Meeting (Leiden, 2002), but time was too limited to submit a proposal to CoP12. | |

**Reviewer:** U. Schippmann, TRAFFIC International.

## Inclusion of Asian yews *Taxus chinensis, Taxus cuspidata, Taxus fuana, Taxus sumatrana* and all infraspecific taxa of these species in Appendix II with annotation:

## Designates all parts and derivatives excluding: a) seeds and pollen; and b) finished pharmaceutical products. Proponents: China and the United States of America.

**Summary**: Yew species (*Taxus*) are slow growing and long-lived evergreen trees and shrubs. There has been considerable taxonomic uncertainty regarding the genus, as species are more geographically than morphologically distinct. It is currently thought to consist of ten species and several infraspecific taxa. Yews are shade tolerant and occur in temperate and subtropical old-growth forests, often as scattered individuals amidst other trees. The four species under consideration in this proposal occur in a wide area from Indonesia and the Philippines through Vietnam and China to the Russian Far East, with China as the major range State for three of them. Most parts of the plant contain small amounts of paclitaxel, a chemical compound used to treat certain cancers, which is exported as an extract. Paclitaxel is a taxane and better known as Taxol®, the registered trade name. Estimates suggest that the bark from 3 000 trees is required to produce one kilogramme of paclitaxel. Since the early 1990s, the extraction industry has grown both nationally and internationally, reportedly resulting in severe overexploitation of Asian *Taxus* spp.. Due to continued demand and the difficulty of cultivation for the pharmaceutical trade, trade in natural extract is expected to expand over the next two decades, with major markets including the USA and Europe. In China, harvest permits are required, but illegal harvesting has been repeatedly reported. Other threats to the genus are deforestation and land conversion. Only one species is listed by IUCN, as Vulnerable. All species are considered Endangered in the China Plant Red Data Book and *Taxus chinensis* is included in the Red Data Book of Vietnam.

*Taxus wallichiana*, or Himalayan Yew (distributed in Afghanistan, Bhutan, China, India, Malaysia, Myanmar, Nepal, Pakistan and Vietnam) has been included in Appendix II since 1994, but the original annotation excluded chemical derivatives and finished pharmaceutical products. However, as the bulk of international trade is thought to have consisted of chemical extracts, little CITES trade has been reported. The annotation for *Taxus wallichiana* is the subject of proposal Prop. 47 at the present CoP.

The proposal seeks inclusion of the four Asian yews, and all infraspecific taxa of these species, in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a, Criterion B i) that it is known, inferred or projected that the harvesting of specimens from the wild for international trade has, or may have, a detrimental impact on the species by exceeding, over an extended period, the level that can be continued in perpetuity. The proposal also includes the annotation: designates all parts and derivatives, excluding seeds and pollen and finished pharmaceutical products.

**Analysis**: The Asian species of *Taxus* have been heavily exploited for the medicinally valuable chemical, paclitaxel, which is used to treat certain cancers. China is the major source of the product, which is extracted from wild populations of three yew species referred to in the proposal, all of which are considered to be nationally Endangered. Available information suggests that these species meet the criteria for listing in CITES Appendix II in accordance with Resolution Conf. 9.24, Annex 2a, Criterion B i). Inclusion of these three species in Appendix II of CITES would mean that all native Chinese species of *Taxus* are covered by the provisions of the Convention. Based on the information available, it is more difficult to assess whether the fourth species proposed, *T. sumatrana,* meets this criterion. Given the increasing demand for paclitaxel, however, and the declining forest resource in the Philippines and Indonesia (Sulawesi and Sumatra) it may be inferred or projected that harvesting for international trade could have a detrimental impact on this species. Given the similarity between different *Taxus* species, and particularly in the parts that are most frequently traded, this species would appear to meet the criteria for inclusion in Appendix II set out in Annex 2b of Resolution Conf. 9.24.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| **Taxonomy** | |
| Taxa proposed are:<br>*T. chinensis*<br>*T. chinensis* var. *chinensis*<br>*T. chinensis* var. *mairei*<br>*T. cuspidata*<br>*T. cuspidata* var. *cuspidata*<br>*T. fuana*<br>*T. sumatrana* | *Farjon (2001), provides a checklist of conifer species which has been accepted as a standard nomenclatural reference by CITES. The taxonomy of the Asian species remains uncertain, however, as pointed out in the supporting statement.*<br>*There is uncertainty about the taxonomy of the* Taxus *species found in Afghanistan, Pakistan, India, Nepal and Bhutan (formerly considered* T. wallichiana*). Some of the plants native to these countries might now be considered* T. baccata *or be included under* T. chinensis *or one of its varieties (Nicholson, 2004).*<br>*The taxonomy and distribution of this genus in Vietnam is unclear. Farjon (2001) cites* T. chinensis *var.* mairei *as the only representative. Other works record two species:* T. wallichiana *from the Dalat plateau of southern Vietnam and* T. chinensis *from the karst limestone areas in northern and north western Vietnam (Hiep and Vidal, 1996; Vat, 1996; Vu, 1996; Luu and Thomas, 2004). The correct identification of the southern populations remains uncertain.* |
| **Range** | |
| *T. chinensis, T. chinensis* .var. *chinensis* and *T. fuana*: China<br>*T. chinensis* var. *mairei*: China and Vietnam<br>*T. cuspidata* and *T..cuspidata* var. *cuspidata*: China, Korea, Japan and (far east) Russia<br>*T. sumatrana*: Philippines and Indonesia | *See above for information about* Taxus *in Vietnam.* |
| **IUCN Global Category** | |
| *T. fuana* is listed as VU D2 in the 2003 IUCN Red List | *Recent IUCN evaluations for Chinese taxa provided by Qiaoping Xiang (2004):*<br>T. fuana – *EN A1c*<br>T. cuspidata – *CR A1c+A1d*<br>*These are evaluations of the populations in China only; the IUCN Red List Authority for conifers (the Conifer Specialist Group) has so far not dealt with regional assessments.*<br>T. chinensis *and* T. wallichiana *are both listed in the most recent Red Data Book of Vietnam (Vat, 1996).* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
|---|---|
| **Biological and trade criteria for inclusion in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| Recent surveys indicate that most if not all populations of *Taxus* spp. are in decline due to over-harvesting. The medicinal taxane compound paclitaxel has recently become the biggest-selling cancer drug in the world. In 1996 the global demand for paclitaxel was estimated at 700 kg a year. One kg of paclitaxel has been estimated to require between 7 270 and 10 000 kg of *Taxus* bark, or some 3 000 medium-sized trees.<br><br>All *Taxus* species, in particular *T. cuspidata* are greatly threatened in China due to over-exploitation, and have disappeared from some regions (e.g., Yunnan). There are several extraction facilities in China and it was estimated that 5 000 to 10 000 tonnes of bark and 2 000 tonnes of branches and leaves of *T. chinensis, T. cuspidata* and *T. fuana* have been harvested in recent years for the facility in Yunnan.<br><br>Illegally harvested *Taxus* destined for export is routinely confiscated by the Chinese authorities, who then make it available to domestic extraction facilities. Illegal harvest is thought to have been the main cause for the dramatic population declines in China. Attempts have been made to falsely declare *Taxus* species in international trade.<br><br>The commercial use of *T. cuspidata* has been in great decline over the past decades due to over-exploitation. | *China, the USA and India are reported as the three largest producers of paclitaxel from* Taxus *trees. China produces about 50 kg, equivalent to roughly 10% of world production in recent years. During the four-year period 2000-2003, China exported 143 kg of paclitaxel (99.9% pure) to western countries (mainly the USA), as follows: 2000 - 39 kg; 2001 - 48 kg; 2002 – 21 kg; 2003 - 35 kg. The decline in exports in 2002 corresponded with strengthened management within China. Following China's ban on* Taxus *harvests,* Taxus *used to extract paclitaxel was imported from other countries. In 2003, the production of paclitaxel increased as more factories were established and imports increased. Prior to the ban, more than 80% of the* Taxus *resources in Yunnan Province were destroyed within just three years (Zhang* et al*., 2004).*<br><br>Schippman (2001) identified Italy as a major export market for *T. wallichiana* plant materials, this country therefore is also likely to be a market for products other *Taxus* species.<br><br>*Although it is possible to fully synthesize Taxol® this is not yet possible on a commercial scale. Production continues to be semi-synthetical and relies on crude botanical materials (Schippmann, 2001). Some of the figures given in the proposal suggest that demand already equates to over two million trees.*<br><br>*There are no extraction facilities for pharmaceutical products derived from* Taxus *in Vietnam. Population sizes are too small for any viable international or national trade. There is a strong interest in southern Vietnam in the establishment of plantations in order to establish a trade for the pharmaceutical industry.*<br><br>*In northern Vietnam* Taxus *occurs as scattered individuals or in small clumps. Large trees are very rare, mainly due to selective felling. Total population sizes are difficult to estimate due to the inaccessibility of its limited habitat. The northern populations are regarded as Vulnerable. In southern Vietnam populations are small and highly fragmented due to extensive clearance resulting from changes in landuse; these populations are regarded as Endangered (Thomas and Luu, 2004).*<br><br>*No information has been found on the harvesting of -* T. sumatrana*.* |
| **Inclusion in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| *T wallichiana* is the only CITES-listed species (Appendix II). However, all *Taxus* spp. closely resemble one another, in particular the leaves and bark. | |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Criteria for inclusion in Appendix I** | |
| **Trade** | |
| **Biological Criteria** | |
| **Other information**<br>Yew species regenerate poorly and are very slow growing. Since *Taxus* is dioecious, the loss of individuals and fragmentation of populations may cause genetic erosion in species and potentially affect their long-term survival. | |
| **Threats** | |
| Localized land conversion and deforestation are likely to be affecting the species in China, Indonesia and the Philippines. | *In northern Vietnam the main identified threat comes from selective felling of the larger sized trees and the effects that this may have on genetic variability and regeneration. In southern Vietnam the principal threat comes from fragmentation, changes in land use and illegal logging. The pharmaceutical value of the trees has been known for some time but the small population sizes have limited their exploitation. Illegal logging for the valuable timber is still a problem despite protective measures. The known populations in southern Vietnam face a high probability of extinction over the next 20 years (Thomas and Luu, 2004).*<br><br>T. sumatrana*: based on surveys of two Philippine populations 100 miles apart it occurs in low frequency and in very remote areas. Effective exploitation is unlikely; local deforestation for opening up new farmland is a greater problem (Nicholson, 2004).* |
| **Conservation, management and legislation** | |
| All species of *Taxus* are listed as Endangered in the China Plant Red Data Book and have obtained the 'National First Category Protection' by the Chinese Government (1999). Permits to collect *Taxus* are required by the Chinese National Forest Bureau. The *Native Flora Protection Act* outlines the rules regarding native flora protection and management. However, there are no detailed regulations concerning minimum diameter or for stumps of a specific height to be left for regeneration in this country. | *In Vietnam a decree listing 'Rare and Precious Flora and Fauna' (Decree No. 18-HDBT, 17/1/1992) includes two species groups. Group 1 lists species that are of particular significance, with special scientific or economic value, occurring in small numbers in small reserves, or that are in danger of extinction. Exploitation and utilisation of such species is prohibited.* T. chinensis *was listed in Group 1. The List of Rare and Precious Flora and Fauna has recently been updated by Decree 48/2002/ND-CP on 22/4/2002. In the updated decree* T. wallichiana *is listed in Group 1.* T. chinensis *was not listed in any groups in the update (Thomas and Luu, 2004).*<br><br>*The Forest Protection Department is responsible for the protection of Rare and Precious Flora and Fauna species. In southern Vietnam all populations of* Taxus *are located within various Special-use Forests. Some northern Vietnam populations of* T. chinensis *are in nature reserves (Thomas* et al.*, 2003).* |
| **Similar species** | |
| *T. wallichiana* which was listed in Appendix II in 1994. | *Paclitaxel is produced by all species of the genus, which has an extensive range in Europe, Asia, North and Central America. A major source of paclitaxel has been* T. brevifolia*, which occurs in the Pacific Northwest of North America.*<br><br>*Other genera such as* Cephalotaxus *yield similar* |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| | *compounds with medicinal promise (Farjon and Page, 1999).*<br><br>*The proposal covers all species of* Taxus *which have a similar range. The only other species which overlaps is the very widespread* T. baccata*.* |
| **Artificial Propagation** | |
| Several *Taxus* species and numerous cultivars are artificially propagated for the commercial horticultural industry. Artificial propagation from vegetative cuttings and by air-layering is easy, but the species is too slow growing to cultivate wild specimens for the pharmaceutical industry. | *As mentioned above production of paclitaxel continues to be semi-synthetical and relies on crude botanical materials.* Taxus *has very long generation times and is therefore not amenable to large-scale artificial propagation for production of paclitaxel. Cultivation trials are reported for various* Taxus *species including* T. cuspidata *and* T. chinensis *to supply the pharmaceutical industry (Schippmann, 2001).*<br><br>*In southern Vietnam, there is a strong interest in the establishment of plantations to provide taxanes for the pharmaceutical industry. Field gene banks derived from locally sourced material have been established by the Western Highland Forest Enterprise around Dalat as part of a conservation/utilization programme. No attempts have been made to domesticate* Taxus *in northern Vietnam on any significant scale. Some research into propagation methods has been carried out by the Forest Science Institute of Vietnam (Nghia, 2000).* |
| **Other comments** | |
| This proposal was sent as a draft to all range States that are Parties to CITES. China fully supports the proposal, whilst Japan, the only other respondent, indicates that they do not support the proposal generally because of the lack of specific scientific and trade data. They are specifically opposed against the listing of *T. cuspidata* because they state it is not endangered and there is no clear evidence that trade is detrimental to the survival of the species.<br><br>During the tenth and eleventh meetings of the CITES Plants Committee, recommendations were made for: a) a thorough review of the genus, and b) a review of the listing and annotation of *T. wallichiana* in which commodities in trade (chemical derivatives and extracts) are exempted from CITES regulations.<br><br>NB: The four North American *Taxus* species are not recommended for further investigation, based on trade and status information on the species. This was decided in 2002 after consultation with the range States by the US Scientific Authority. | |

**Reviewers:** A. Farjon, R. Nicholson, U. Schippmann, P. Thomas, N.D.T. Luu, Qiaoping Xiang, TRAFFIC East Asia, TRAFFIC North America.

## Inclusion of Agarwood producing species *Aquilaria* spp. and *Gyrinops* spp. in Appendix II. Proponent: The Republic of Indonesia.

**Summary:** Agarwood, also known by various other names including gaharu and eaglewood is renowned as a fragrant resinous wood used in the production of incense, perfume and traditional medicine. The main source of agarwood is *Aquilaria* spp. However, it is also produced by species in the genus *Gyrinops* and by other genera of the family Thymeleaceae including *Aetoxylon*, *Gonystylus*, *Phaleria* and possibly *Enkleia* and *Wikstroemia*. Agarwood-producing tree species in the genera *Aquilaria* and *Gyrinops* grow naturally in countries of South and Southeast Asia from India eastwards to Papua New Guinea. They are evergreen understorey trees that occur in various types of mixed forest up to 1000 m above sea level. Agarwood is only found in a proportion of the trees of the appropriate species, with the resinous deposits being produced in response to attack by pathogenic wounding and fungal infection of the trees. International trade in agarwood has taken place for centuries and historically harvesting for trade has moved progressively eastwards from India and continental Southeast Asia as far as the island of New Guinea. Indonesia and Malaysia are currently the main countries of export. Of the genera that produce Agarwood, the proposal includes all species of *Aquilaria* not yet included in Appendix II and all species of *Gyrinops*. *Aquilaria malaccensis* was listed in CITES Appendix II with effect from 1995. The IUCN Red List currently lists eight species of *Aquilaria* as threatened species and one species as Data Deficient. Evaluation of the conservation status of all the Agarwood-producing species has been recommended by the CITES Plants Committee. The international trade demand is generally considered to be a major threat to species, particularly as availability of the resource is declining due to the conversion and loss of the lowland forest habitats of these genera. Reports suggest that Agarwood-producing species have been locally depleted and in some areas possibly extirpated. Agarwood is mostly exported to market centres in East Asia and the Middle East. Different species can only be reliably identified when in flower, and as agarwood is traded at product level (e.g., wood chips, powder, oil) under a largely subjective grading structure, the species within agarwood-producing genera can be traded interchangeably. The number of small-scale plantations for *Aquilaria* and *Gyrinops* is increasing, but quantities produced are very small compared to wild-harvested Agarwood.

The proponent seeks inclusion of the genera *Aquilaria* and *Gyrinops* in Appendix II in accordance with Resolution Conf. 9.24, Annex 2a Criteria A and Bi, and additionally, the criteria listed in annex 2b paragraph A and B, on the grounds that 'the specimens resemble specimens of *A. malaccensis*, a species included in Appendix II .. 'such that a non-expert, with reasonable effort, is unlikely to be able to distinguish them'…and species 'must be included to bring trade in specimens of the others under effective control'.

**Note:** In the case of plants, Article I of the Convention requires that, for Appendix-II listed species, readily recognizable parts and derivatives to be controlled by CITES should be specified in the Appendix. In the present case the proposal itself does not specify any parts or derivatives, so that in theory only whole plants would be covered. It has been argued that amending the proposal to cover parts and derivatives (as is clearly intended from the information provided in the supporting statement) would be expanding its scope, and that under the current Rules of Procedure such an expansion is not permitted once the deadline for submission of a proposal for consideration at a CoP has passed. However, this does not reflect recent practice: Parties have frequently accepted proposals for inclusion of plant species in Appendix II that were submitted with no annotation specified and that were subsequently listed with an annotation decided at the meeting of the Conference of the Parties. Examples include: *Aquilaria malaccensis* and *Taxus wallichiana* at CoP 9; *Picrorhiza kurrooa* and *Nardostachys grandiflora* at CoP10; and *Adonis vernalis* and *Cistanche deserticola* at CoP11. In these cases information provided in the supporting statement was used to decide the most appropriate annotation. No decision has been made by the Parties that such a procedure should no longer be followed. The agarwood products typically traded are pieces of wood, wood chips, powder and oils.

**Analysis**: Based on the information presented in the supporting statement and additional information gathered through the review process, it would appear that *Aquilaria* spp. and *Gyrinops spp.* meet criterion Bi) of Resolution Conf. 9.24, Annex 2a for listing in Appendix II of CITES. Harvesting for international trade in *Aquilaria* spp., has taken place for centuries and there are indications that it is no longer sustainable in significant parts of the range of the genus. Unprecedented levels of harvesting of *Gyrinops* spp. in New Guinea for international trade have taken place over the past ten years and are considered unsustainable. Certain species of agarwood such as *Aquilaria crassna* also meet criterion Bi) and iv) of Resolution Conf. 9.24, Annex 1 for listing in Appendix I of CITES and other species such as *Gyrinops ledermannii* are likely to do so in the near future. *Aquilaria* spp. and *Gyrinops* spp., also meet criterion A and B of Resolution Conf. 9.24, Annex 2b, because of the difficulty of distinguishing between

the currently listed *Aquilaria malaccensis* and other species in the two genera and also generally between the proposed species.

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **Taxonomy** | |
| The proponent seeks to include all species of the genus *Aquilaria* (except for *A. malaccensis,* which is already listed) and refers to 24 species*: A. audate*, *A. beccariana, A. hirta, A. microcarpa, A. cumingiana, A. filaria, A. brachyantha, A. urdanetensis, A. citrinaecarpa, A. apiculata, A. parvifolia, A. rostrata, A. crassna, A. banaense, A. khasiana, A. subintegra, A. grandiflora, A. secundana, A. moszkowskii, A. tomentosa, A. baillonii*, *A. sinensis, A. apiculata, A. acuminata* and *A. yunnanensis* and seven species of the genus *Gyrinops*: *G. versteegii, G. moluccana, G. decipiens, G. ledermannii, G. salicifolia, G audate*, and *G. podocarpus*. | *Taxonomically the two genera* Aquilaria *and* Gyrinops *can only be consistently distinguished on the basis of a single floral character. The systematic relationship between the two genera requires further study and it is likely that a new generic and species level taxonomic treatment will need to be developed (Zich and Compton, 2001).*<br><br>*Various references refer to there being 15 species of* Aquilaria*, (Anon., 2004a; Mabberley, 1997; Zich and Compton, 2001).*<br><br>*The nomenclature of some species occurring in trade is subject to debate.* A. agollocha*, for example, a utilised species in Bangladesh and Myanmar, is sometimes considered a synonym of* A. malaccensis*.* |
| **Range** | |
| Agarwood-producing species are found throughout South and Southeast Asia from India eastward to Papua New Guinea, including Southeast China.<br><br>Range States for the species covered by this proposal include: Brunei Darussalem, Cambodia, China, India, Indonesia, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand and Vietnam. | *One species of* Gyrinops *not referred to in this proposal,* G. walla *is recorded from Sri Lanka (Ding Hou, 1966).* |
| **IUCN Global Category** | |
| Species considered to be globally at risk from over-exploitation for Agarwood include: *A. beccariana* (VU A1d)*, A. hirta* (VU A1d) and *A. microcarpa* (VU A1d).<br><br>*A. malaccensis*, currently listed in CITES Appendix II is classified in the IUCN Red List as VU (A1cd). | *Other species included in the IUCN Red List are:* A. crassna *(CR A1cd );* A. banaensae *(VU D2);* A. cumingiana *(VU A1d);* A. sinensis *(VU B1+2cde) and* A. rostrata *(DD).*<br><br>CITES Decision 12.69 states that IUCN should be invited to re-evaluate the threatened status of all agarwood-producing taxa.<br><br>*It is likely that other species will be added to the IUCN Red List as evaluations are undertaken.* Gyrinops ledermannii *for example appears to be under significant threat from felling. Further data, such as range and distribution of the species, is required to enable confident determination of an IUCN Red List conservation category (Zich and Compton, 2001). This species was* first *described and published from a single specimen in 1932 and subsequently very few botanical collections were made until the past three years (Gunn* et al.*, 2004).* |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| **Biological and trade criteria for inclusion in Appendix II** | |
| **A) Trade regulation needed to prevent future inclusion in Appendix I** | |
| **B) Harvesting for international trade has, or may have, detrimental impact on population** | |
| **(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level** | |
| International demand for agarwood is increasing and virtually all species of *Aquilaria* and *Gyrinops* are threatened by trade (Soehartono and Mardiastuti, 2002). Loss of lowland forest habitats also threatens populations of these species. Agarwood trees are becoming more difficult to find, as reported by collectors, non-infected trees are increasingly being felled and collection is taking place within protected areas.<br><br>Agarwood is used at a national level, but is mainly exported to Taiwan P.O.C., the United Arab Emirates, Saudi Arabia and Japan. Indonesia is the largest exporter of Agarwood. From 1997-2000 Indonesian exports averaged 300 tonnes annually. However, export from Indonesia has decreased from 2001 to 125 tonnes, due to implementation of a quota of 125 tonnes. Singapore is known to be the country re-exporting the largest quantities of agarwood from Indonesia.<br><br>In Sabah the activity of collectors is reportedly a major threat and most trees have either been felled or "notched". Traders in the Mandor area have confirmed the loss of *Aquilaria* trees.<br><br>Illegal trade has reputedly been reported from various parts of Indonesia and Brunei Darussalam. A number of National Parks in Kalimantan have reportedly lost the majority of their agarwood trees due to illegal logging and gold-mining activities. | *Global demand for agarwood currently exceeds the available supply due to the nature of its formation (Zich and Compton, 2001).*<br><br>*Evidence for the decline in availability of agarwood in Indonesia is provided by reports from collectors that it is becoming more difficult to find and regional trade data indicating a decline in the mass of gaharu exported from Kalimantan with a shift to supply from Maluku and Irian Jaya (Soehartono and Newton, 2002).*<br><br>*The island of New Guinea is at the eastern extreme of the distribution range of agarwood-producing species, and could also be the world's last frontier for substantial wild stocks. Even here unprecedented levels of harvest and trade have taken place since 1997 as a result of external trade interest.* Gyrinops ledermannii *appears to be under significant threat at the population level from indiscriminate felling (Compton and Zich, 2001).*<br><br>*In various other countries information suggests that harvesting for international trade has had a detrimental impact on wild populations. Much of the published information refers to* A. malaccensis.<br><br>*In Vietnam, exploitation of* A. crassna *has resulted in recent population declines of over 80% and there are indications that similar losses are occurring in other range States – Cambodia, Lao PDR and Thailand. In Lao PDR there is little control of the harvesting of agarwood (Barden* et al. *2001). The threat posed to wild populations of this species from international trade appear to be even more significant than that to* A. malaccensis *(Anon., 2004a).*<br><br>*There are concerns about the rates of exploitation of* A. sinensis *in China and the damage to trees during harvesting.* |
| **Inclusion in Appendix II to improve control of other listed species** | |
| **Specimens resemble other species and are difficult to distinguish, or most of taxon is already listed** | |
| The species proposed for inclusion in Appendix II resemble *A. malaccensis*, already listed in Appendix II, and can only be distinguished by their flowers or DNA analysis. DNA techniques are being developed in order to identify species from wood samples, but are complicated and expensive, which makes large-scale application unrealistic.<br><br>Indonesian traders differentiate Agarwood into eight grades but in India and Dubai the grading systems are different. These systems do not correlate with species differences. | |

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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**Criteria for inclusion in Appendix I**

**Trade**

**Biological Criteria**

**Other information**

**Threats**

Recovery of Agarwood producing species, which form part of the understorey of the forest, is difficult. Seed dispersal is limited to the area immediately around the adult tree, thus recovery of tree populations after harvest is only possible where mother trees are left.

The increase in levels of trade in Agarwood over the past decade has resulted in over-exploitation. High numbers of trees are cut down annually, many uninfected, to harvest just a few kilograms of the diseased wood.

Other threats are: habitat degradation due to forest fires, mining and clearance for agricultural purposes.

*Indiscriminate and illegal felling are generally considered the major threats. Relatively few people (for example the Dayaks of Indonesia) can identify whether an individual tree contains Agarwood by interpreting external characteristics of the tree (Barden* et al *2000) and there is therefore a risk of indiscriminate felling when the value of agarwood becomes known.*

*There are reports of illegal Agarwood harvest and/or trade in Bhutan, India, Indonesia, Lao PDR, Malaysia, Myanmar, Papua New Guinea, Thailand and Vietnam. Illegal harvests from protected areas have been reported in Indonesia, for example, and from government agarwood plantations in India, where most processing facilities operate illegally since the CITES listing of* A. malaccensis*, in 1995. In Bhutan,* A. malaccensis *and* A. khasiana *are strictly protected, but are both illegally harvested (Barden* et al*., 2000). Illegal trade in agarwood from Papua New Guinea is estimated to be much larger than the legal trade (Gunn* et al. *2004).*

**Conservation, management and legislation**

Agarwood species occur in protected areas in various countries. However the species is not protected in many range States. Some species only occur in national parks, such as *A. rostrata*, where they are protected.

In Indonesia trade is strictly regulated. Indonesia is the only range State that has been setting harvest quotas for *A. malaccensis* and all Agarwood producing species are treated as *A. malaccensis*. Permits are obtained from State Forest offices to harvest Agarwood. Simultaneously, local forest authorities issue permits for local activities based on local quotas. Transport permits are also required.

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*In India, harvest and trade in agarwood is controlled by national legislation and various measures at the State level.*

*The harvest of agarwood from all* Aquilaria *spp. is prohibited by national legislation in Myanmar.*

*The harvesting and trade of* A. crassna *is banned in Vietnam, by Decree No. 18 (HDBT) Vietnam Wildlife Protection, 1992.*

A. sinensis *has been listed as a Wild Plant Under State Protection (Category II) in China owing to the decline in its distribution. In Hong Kong, one of the major consumers, it is said to be common and currently not under any threat (Anon. 2004b)*

*In Peninsular Malaysia, a permit is required to harvest any* Aquilaria *species. In Sarawak felling of* A. malaccensis *is regulated under the Wildlife Protection Ordinance 1998 and the Forests Ordinance, 1958. In Sabah, felling of* A. malaccensis *is subject to the Forest Enactment, 1968 and harvesting from State Land is forbidden under the Parks Enactment Act, 1984. Harvesting of agarwood from national parks or wildlife sanctuaries is prohibited in all Malaysian States.*

*The basis for harvest quotas, export quotas and non-detriment findings for* A. malaccensis *exports, and the extent to which export controls are being applied to agarwood exports in general, as opposed to* A. malaccensis *specifically, are unclear (Barden* et al. *2000)*

| Information provided and statements made by proponents in the Supporting Statement | Comments, observations and additional information provided in the review process |
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| | *The scientific basis for the quotas in Indonesia remains unclear (Anon, 2004a).*<br><br>*In Papua New Guinea companies wishing to trade in agarwood are required to register with the government and obtain an annual licence; there are no other regulations governing exploitation of agarwood. A project towards sustainable management of* G. ledermannii *has been set up by the PNG Forest Authority, WWF and other institutions. The programme, aiming at sustainable harvest, also includes population monitoring, the development of guidelines and education of local people (Gunn* et al., *2004).* |
| **Similar species** | |
| *A malaccensis* (listed in Appendix II).<br><br>Within the *Thymelaeaceae* there are five agarwood-producing genera, *Aetoxylon, Phaleria, Gonystylus, Aquilaria* and *Gyrinops*. Most species resemble each other and can only be distinguished by their flowers or DNA. In trade, Agarwood is not differentiated by species. | *Two additional genera in the family Thymeleaceae that may produce agarwood are* Enkleia *and* Wikstroemia*. Agarwood derived from species other than those found in the genera* Aquilaria *and* Gryinops *is likely to be in less significant volumes, and of lesser quality (e.g., both* Aetoxylon *and* Phaleria *are referred to in Indonesia/PNG as 'gaharu buaya/puk-puk gaharu' which translates as 'untrustworthy or false gaharu (agarwood) (TRAFFIC Southeast Asia, 2004).*<br><br>*The use of other species such as* Gonystylus bancanus *and* Cinnamosma fragrans *as a source of agarwood is referred to in the CITES Identification Sheet for* Aquilaria malaccensis. |
| **Artificial Propagation** | |
| Successful small-scale artificial propagation has been reported from various countries: Bangladesh, Bhutan, India, Indonesia, Malaysia, Myanmar and Thailand. Trials are underway to link artificial propagation with the inoculation or treatment of trees to stimulate Agarwood formation.<br><br>The results reported from artificial inoculation to produce Agarwood are limited. | *Cost-effective fungal inoculation techniques adapted to PNG conditions are being developed (Anon., 2003).*<br><br>*In Vietnam plantations exist in Ha Tinh, Kon Tum and Phu Quoc Island (Barden* et al., *2000). During a pilot project by The Rainforest Project Foundation, agarwood was induced in plantation-grown trees in Vietnam. During this process generous amounts of resin were produced in young trees after only a few years, many times faster than in the wild (Anon, 2004c).* |

**Reviewers:** H. van Beek, B. Bolier, L. Chua, B. Gunn, T. Soehartono, TRAFFIC Southeast Asia.

## Inclusion of Ramin, *Gonystylus* spp. in Appendix II including all parts and derivatives, except: a) seeds, spore and pollen (including pollinia); and b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers (annotation # 1). Proponent: the Republic of Indonesia.

**Summary**: The genus *Gonystylus* consists of around 30 species, which are distributed throughout most of the Malesian area, with the greatest species diversity in Borneo. The major commercial species is *Gonstylus bancanus,* which occurs in Malaysia (Peninsular Malaysia, Sabah, Sarawak), Indonesia (Sumatra, Bangka, Kalimantan) and Brunei Darussalam. Indonesia and Malaysia are the main producer countries for this valuable timber species. Timber of *G. bancanus* and other species of the genus is traded under the general trade name of Ramin. This name is not known to be used for the timber of any other genera. *G. bancanus* grows mainly in coastal peat swamp forests, where it dominates the vegetation and can be locally common. Declines in peat swamp vegetation and logging have led to concerns about the conservation status of this species. Other species of *Gonystylus* are found mainly in primary rainforests up to 1 500 m. Various species are exploited for timber and some also as a source of incense and medicinal products. IUCN has listed 15 species of *Gonystylus* on the Red List as Vulnerable, generally on the basis of population declines resulting from habitat alteration or loss and, in some cases, levels of exploitation. Various measures have been taken at a national level to protect *Gonystylus* species and to manage the forests where they occur for timber production. Levels of illegal logging and illegal trade in Ramin have, however, caused national and international concern. Indonesia introduced a logging and export ban for Ramin in April 2001, and listed the genus *Gonystylus* in CITES Appendix III. The listing includes all parts and derivatives with exemptions only for specified propagules (CITES Annotation #1). An annual export quota has been set by Indonesia to allow the export of Ramin products produced from timber harvested at one concession in Riau, Sumatra. Only one company, associated with this concession, is allowed to export Ramin. In August 2001, Malaysia entered a CITES reservation on all Ramin parts and derivatives except for sawn timber and logs. Since 2001, illegally logged Indonesian Ramin has continued to be exported from Indonesia, and via Malaysia and Singapore. In 2004, the Governments of these three countries agreed to form a task force to increase co-operation in law enforcement on the Ramin trade and effective implementation of CITES. Ramin is exported to a large number of countries, including China including Hong Kong, Japan, Taiwan P.O.C., EU countries, the USA and Canada.

The proposal seeks inclusion of *Gonystylus* spp. in Appendix II, in accordance with Resolution Conf. 9.24 Annex 2a, criterion A on the grounds that 'it is known, inferred or projected that unless trade in the species is subject to strict regulation, it will meet at least one of the criteria listed in Annex 1 in the near future; criterion B i) that the harvesting of specimens from the wild for international trade has, or may have, a detrimental impact on the species by exceeding, over an extended period, the level that can be continued in perpetuity; and in Annex 2b, criterion B 'the species is a member of a taxon of which most of the species are included in Appendix II under the provisions of Article II, paragraph 2 (a), or in Appendix I, and the remaining species must be included to bring trade in specimens of the other species under effective control.

The major part of recorded international trade in Ramin is in the form of sawn timber, semi-finished timber products such as dowels and mouldings and finished products such as furniture, picture frames and billiard cues. The proposed Annotation #1 reflects the nature of this trade in that all readily recognisable timber products would be covered by the CITES listing.

**Analysis**: Based on the available information, it would appear that *Gonystylus bancanus* meets criterion Bi) of Resolution Conf. 9.24, Annex 2a for listing in Appendix II of CITES. Harvesting for international trade in the main areas of occurrence of the species, in parts of Indonesia and Malaysia, has declined significantly with general agreement that this has been caused by depletion of the timber as a resource. Harvesting on a relatively small scale may support sustainable levels of trade as from the independently certified forest area in Sumatra, but the high level of international demand coupled with illegal logging and illegal trade generally undermine the policies and practices for the sustainable management of the species. There is insufficient information to assess whether other species of the genus meet the criteria for inclusion in CITES Appendix II on the basis of unsustainable harvest. However, these species meet criterion A of Resolution Conf. 9.24, Annex 2b, (NOT criterion B which is referred to in the proposal) if the proposal for Appendix II listing is accepted for *G. bancanus* because of the difficulty of distinguishing between species.

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| **Taxonomy** | |
| The genus *Gonystylus* consists of about 30 species. Table 1 of the supporting statement lists 29 species and gives two synonyms. | *New species of* Gonystylus *continue to be described, for example* G. othmanii *Tawan which occurs in Sarawak. Additional species not included in Table 1 of the proposal include* G. nervosus *Airy Shaw and* G. nobilis *Airy Shaw.* |
| **Range** | |
| *Gonystylus* spp., are distributed almost throughout the Malesian area with the exception of Central and East Java and the Lesser Sunda Islands. Eastward, the distribution area extends to the Solomon Islands, Nicobar and Fiji. The majority of species are found in Borneo (27 species), especially in Sarawak. Seven species occur in Peninsular Malaysia, seven in Sumatra, and two species in the Philippines.<br>The known distribution of the six commercially utilised species is:<br>*G. affinis*: Peninsular Malaysia, Borneo.<br>*G. bancanus*: Peninsular Malaysia, Sumatra, Bangka, Borneo.<br>*G. forbesii*: Borneo.<br>*G. macrophyllus*: throughout the Malesian area.<br>*G. maingayi*: Peninsular Malaysia, Sumatra, Northern Borneo.<br>*G. velutinus*: Sumatra, Bangka, Belitung. | G. areolatus, *which occurs in Borneo, is also commercially traded (TRAFFIC Europe, 2004), as are* G. micranthus *and* G. xylocarpus *(TRAFFIC Southeast Asia, 2004).* |
| **IUCN Global Category** | |
| Many species in the genus *Gonystylus* have been categorized as Vulnerable according to the 2000 IUCN Red List of Threatened Species. | *15 species are included in the IUCN Red List 2003, including two important timber species:*<br>**G bancanus: VU A1cd**<br>G. calophylloides: VU A1c+2c<br>G. consanguineus: VU A1cd+2cd<br>G. costalis: VU A1c+2c<br>G. decipiens: VU A1c+2c<br>G. glaucescens: VU A1c+2c<br>G. keithii: VU A1cd+2cd<br>G. lucidulus: VU A1c+2c<br>**G. macrophyllus: VU A1cd**<br>G. nervosus: VU A1c+2c<br>G. nobilis: VU A1c+2c<br>G. pendulus: VU A1c+2c<br>G. spectabilis: VU A1c+2c<br>G. stenosepalus: VU A1c+2c<br>G. xylocarpus: VU A1cd+2cd |

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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**Biological and trade criteria for inclusion in Appendix II**

**B) Harvesting for international trade has, or may have, detrimental impact on population**

**(i) exceeds sustainable yield; (ii) reduces population to potentially threatened level**

Ramin is one of the major export timbers of South-east Asia. The wide range of uses of the timber makes it valuable on the international market. Harvest is heavily driven by international trade. The species, especially the most valuable *G. bancanus,* have been heavily depleted throughout their geographic ranges especially in Indonesia and Malaysia because of over-exploitation to supply the high international demand.

**Indonesia**: In 1994, Indonesia was reportedly the main exporter of Ramin. From 1994-2003 Indonesia exported Ramin to 28 countries, totalling approximately 165 820 $m^3$ of finished products. The major importers were Japan, Taiwan P.O.C., Italy, Singapore and China.

Based on inventories of standing stock, and annual production figures calculated from production by concession units, it can be seen that the Ramin population throughout Indonesia has declined considerably. The density of the population is now very sparse and the past harvest is considered to have been unsustainable.

Within the country, according to official statistics, annual production has decreased by about 85% in eight years from 900 000 m³ / year in 1991-92 to 130 000 $m^3$/year in 2000. In 2000, the Ministry of Forestry set a total allowable annual cut quota of 24 000 m³ per year but production reportedly exceeded this level by over 400% and a logging ban was instituted in 2001. Thereafter in 2002 and 2003 annual harvest quotas of 8 000 $m^3$ were established by the CITES Management Authority.

Twenty years ago, the total area of the peat swamp habitat for *G. bancanus* in Indonesia was estimated to be about 13 million ha, with 5.5 million ha in Central Kalimantan, 3.7 million ha in West Kalimantan and 2.2 million ha in Riau.

The actual rate of deforestation is not known, but is estimated between 700 000 and 1.2 million ha annually.

**Malaysia:** Production of Ramin in Peninsular Malaysia has remained reasonably stable over the past ten years, but in Sarawak has declined from a high of 521 000 $m^3$ in 1990 to 67 000 $m^3$ in 2000. Data for harvest production in Sabah are very low in 1999 and 2000, and it is not clear if there was any production in preceding years.

In 1994, 460 000 ha of swamp forest was estimated to occur in Peninsular Malaysia, a further 1.2 million ha in Sarawak (of which 760 000 ha is partially protected); and 190 000 ha in Sabah. Half of the peat swamp habitat of Sabah has been cleared over the past decades.

**Brunei Darussalem:** The peat swamp forest is thought to be less disturbed.

*Most of the species inventory information and information on harvesting for international trade relates to* G. bancanus *and there is very limited information on which to assess the impacts on populations of other species in the genus.*

*Indonesia and Malaysia have been logging significant volumes of Ramin for over 70 years with production peaking in the 1970s. Figures suggest that log production has shown a sharp decline in Indonesia and Sarawak in recent years. This appears to be a consequence of the exhaustion of the Ramin stock in peat swamp forest.*

*In 2000, Malaysia overtook Indonesia in the production of Ramin logs, with over half the production from Peninsular Malaysia, predominantly from Southeast Pahang. Over two-thirds of the Ramin produced in Pahang comes from clear-cut logging primarily on land being converted for plantation development (TRAFFIC Southeast Asia, 2004).*

*Indonesia and Malaysia are the only countries of origin recorded for exports of Ramin in CITES trade data for the years 2001-2002. It is not thought that any other range States are significant producers for the export market.*

***Malaysia**: In 2002, Ramin was the fourth most valuable hardwood exported by Peninsular Malaysia (TRAFFIC Europe, 2004). Malaysia is recorded as exporting 62 778 cubic metres of Ramin sawn timber in 2003 with a value of over USD 13.2 million (RM50 million) (Anon 2004a).*

*In the Malaysian Federation, forestry is the responsibility of the state governments. Forest Reserves are areas of land reserved by gazette notification for productive or protective forestry under the various states' forest enactments. Statelands are areas not gazetted or reserved by the states for special purposes. The National Forest Inventory III (1991-1992) indicated that the peat swamps in five states of Peninsular Malaysia, Pahang, Johor, Selangor, Perak and Terengganu had a combined area of 406 873 ha, of which 208 421 ha (51.2%) were in the Permanent Forest Estate (or sometimes known as Permanent Reserved Forest) and the rest of the 198 452 ha (48.8%) are Stateland forest.*

*In 1991 it was noted that in Sarawak, peat swamp forests were the first formations to be logged on a commercial scale and for many years were Sarawak's main source of timber. By 1972, they had all been licensed for timber extraction and by the year 2000 were all due to have been logged (Collins* et al., *1991). The decline in Ramin exports since then would appear to confirm the decline in availability in natural stands. The state of Sarawak now produces about 2 000 $m^3$ of Ramin logs per month from its production forests, which works out to about*
*24 000 $m^3$ per year. Those protected areas in Sarawak that have peat swamp forest were declared after logging for Ramin had taken place (TRAFFIC Southeast Asia, 2004).*

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| | *No inventory specific for Ramin has been carried out in Sabah. Ramin in Sabah is confined to the peat swamp forest in the South West Coast of Sabah, mainly in the Binsuluk Forest Reserve and Klias Forest Reserve, which are both protection forests (Class I) where no logging is allowed. The Binsuluk Forest Reserve has already been destroyed by fire and with this the only area where Ramin can be found in Sabah is the Klias Forest Reserve (3 630 ha). The small volume of production is only from state land and alienated land (for agriculture and other development). The volume of Ramin production is insignificant and so is the trade. Production was only 227 m³ in 2003 and there are no records of export (Abdullah, 2004).*<br><br>*Altogether, Malaysia's production of Ramin logs is about 75 000 $m^3$ per year (from 1999–2001: on average just over 50 000 $m^3$ annually) (Malaysian timber council, (Anon 2004b).*<br><br>***Fiji**: There is one species of Ramin that occus in Fiji, the endemic* Gonystylus punctatus *(sometimes considered a synonym of* G. macrophyllus*), which is known only from Viti Levu and is considered a very useful timber tree. This species is exported by Fiji. In 1998, 269 m³ were exported with a value of 225 000 FJD (ca. USD 125 000). In 2003, the volume of exports was 35 m³ with a value of 324 953 FJD (ca. USD 18 500) (Ministry of Fisheries and Forests, Fiji, 2004).* |

**Other information**

**Threats**

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| For Indonesia, illegal logging is reportedly a major problem, encroaching into protected areas such as Tanjung Puting National Park, Central Kalimantan. Illegal trade has also been recorded. Between 2002 and March 2004, Malaysia reported 34 confiscations of Ramin that was shipped illegally from Indonesia, involving a total of almost 4 000 $m^3$ logs and sawn timber. | *The Environmental Investigation Agency (EIA) and Telapak Indonesia contend that over 70 per cent of Indonesia's log production is derived from illegal sources. Illegally logged Indonesian Ramin is exported from Indonesia and is "laundered" by Malaysia and Singapore (EIA and Telapak Indonesia, 2000; 2003; 2004).* |
| Habitat destruction in the form of forest fires and agricultural clearances also threaten Ramin habitat. Rates of deforestation have been estimated at 700 000 to 1.2 million ha per year. In 1997, large areas of peat swamp-forest were burnt in Sumatra and Kalimantan.<br><br>In Peninsular Malaysia large areas of peat-swamp forest have been cleared for agricultural plantations. | *Due to enforcement efforts, there have subsequently been an increasing number of seizures of an increasing volume of illegal logs seized by Malaysian Authorities. Following the log trade ban, the trade shifted to sawn timber. There have been increasing numbers of seizures of Indonesian Ramin sawn timber in Peninsular Malaysia (TRAFFIC Southeast Asia, 2004).* |

**Conservation, management and legislation**

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| **Indonesia:** The total Ramin habitat that is protected in Indonesia covers almost one million ha.<br><br>In 2001, *Gonystylus* spp. were listed in Appendix III by Indonesia[1]. In 2001 Indonesia instituted a logging ban for Ramin and undertook an inventory of stockpiles. On completion of the inventory, stockpiles were then | ***Indonesia**: Protected areas where Ramin occurs in Kalimantan include: Tanjung Putting National Park, Lake Sentarum National Park, Gunung Palung Nature Reserve, Mandor Nature Reserve, Muasra Kaman Nature Reserve, Gunung Penrisen/Gunung Nyiut Game Reserve, Pleihari Martapura Wildlife Reserve; and in* |

[1] Designates all parts and derivaties except: a) seeds [note that until 18 January 1990 seeds of Cycadaceae spp. and Zamiaceae spp. were controlled], spores and pollen (including pollinia); b) seedling or tissue cultures obtained *in vitro*, in solid or liquid media transported in sterile containers; and c) cut flowers of artificially propagated plants [added 18 September 1997].

| Information provided and statements made by the proponents in the Supporting Statement | Comments, observations and additional information provided by the review process |
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| exported under strict control until the end of 2001. Since 2002, only certified Sustainable Forest Management projects are allowed to harvest and export, on the basis of the annually set Government harvest quota. In addition, exports of logs and sawn timber are no longer permitted, so that all exports must be of finished products (mouldings, dowels, door leaf, etc.). Since 2003 the following government harvest quotas have been established for 2003, 8 000 $m^3$ and 2004, 8 880 $m^3$ respectively.<br><br>Indonesia has voluntarily made non-detriment findings (since 2001). Under the Indonesian Selective Felling and Planting System felling is limited to trees with a diameter of 35 cm or more and at least 25 healthy trees per ha with a diameter over 15 cm need to be left as core trees. Furthermore, a 35-year cutting cycle has been set. Regeneration is monitored in the logged area and enrichment planting is undertaken, but regeneration can be problematic if shade is lacking. The Ministry of Forestry is also planning to undertake Ramin surveys. Not all of the management and logging plans are fully implemented on site. The Indonesian government has already established a national task force, involving 4 000 forest police and investigators, to enforce the legislation.<br><br>During a workshop in April 2004, representatives of the governments of Malaysia, Indonesia and Singapore agreed to form a taskforce to increase law enforcement co-operation on Ramin trade and effective implementation of CITES. The focus of this effort would be to combat illegal trade as well as framing long-term co-operative action to manage legal trade in Ramin under CITES.<br><br>Malaysia has imposed an import ban on Ramin logs from Indonesia to oppose smuggling operations. As a result of a TRAFFIC workshop held in Malaysia, March 2004, several recommendations were made to implement and enforce CITES more successfully. | *Sumatra: Gian-Siak Kecil Wildlife Reserve, Danau Bawah and Palau Besar Strict Nature Reserve and Berbak Game Reserve (EIA and Telapak Indonesia, 2001).*<br><br>*In 2001, Indonesia declared a general round log export ban. In June 2002 Malaysia announced a ban on imports of Indonesian round logs. This was expanded in June 2003 to include squared logs with a cross sectional area of over 375 cm².*<br><br>*Indonesian Decree No.1613/Kpts-II/2001 of October 2001 details the procedures for exporting Ramin. This specifies a total ban on export of logs, sawn timber and veneer sheets even if originating from the one FSC certified concession or registered stockpiles (TRAFFIC Southeast Asia, 2004).*<br><br>***Malaysia**: Sustainability is a key element of Malaysia's National Forestry Policy 1978 (revised 1992) and of the forest policies of Sabah (1954) and Sarawak (1954). Using the principle of sustained yield, each State is allocated an Annual Allowable Cut by the National Forestry Council on a five yearly basis (TRAFFIC Southeast Asia, 2004).*<br><br>*In Sarawak, Ramin occurs in Maludam National park (43 000 ha); Lambir Hills National Park (6 950 ha); and Loagan Bunut National Park (10 736 ha). Peat swamp forest is also protected in the Samunsam Wildlife Sanctuary, Sarawak (6 092 ha). In Peninsular Malysia, the Sungai Dusun Wildlife Sanctuary (4 330 ha), in Selangor also protects Ramin (Abdullah, 2004).*<br><br>*In 1999, the Malaysian Government initiated the Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems project to conserve peat swamp forest at three sites - Loagan Bunut National Park, the Klias Peninsula, Sabah and southeast Pahang, Peninsular Malaysia. This ongoing project will develop and implement plans for the respective sites. Another ongoing project, Sustainable Management of Peat Swamp Forest of Sarawak with special reference to Ramin, will also strengthen the conservation status of the species (Abdullah, 2004).*<br><br>*In Sarawak, trade in Ramin is regulated under the* Wildlife Protection Ordinance 1998*, where it is listed as a protected species. All trade requires a licence from the Forestry Department. The export of Ramin logs from Sarawak has been banned since 1980 (TRAFFIC Southeast Asia, 2004).*<br><br>***Fiji**: Listed in Schedule 1 of the* Endangered and Protected Species Act (2002) *Export of specimens of this species requires a permit, issued by the Department of Environment, in accordance with Section 9.1 of the Act.* |
| **<u>Similar species</u>** | |
| Rubberwood, *Hevea brasiliensis*, and Jelutong, *Dyera costulata* are known to possess similar qualities to Ramin. However, they have not been able to replace Ramin in international trade, as they are not as smooth and are harder to work with. | *The whitish and light to medium density wood of Ramin is a typical multi-purpose timber. The timber of the 30 species cannot be confidently separated from each other. The timber has similar properties to that of* Terminalia ivorensis *and* T. superba*, both African species (Baas and van Heuven, 2002).*<br><br>*European buyers are considering alternatives to Ramin* |

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| | *such as obeche (*Triplochiton scleroxylon*) and koto (*Pterygota *spp.) from Africa, American Tulipwood (*Liriodendron tulipifera*) and Brazilian Marupa (*Simarouba amara*)(Anon, 2004c).* |
| **Artificial Propagation** | |
| In Sarawak, large areas of logged-over mixed peat swamp forest have been treated to stimulate regeneration and growth of Ramin. | |

**Reviewers:** A.L. Abdullah, L. Chua, S. Ibrahim, T. Soehartono, C. Tawan, TRAFFIC Europe, TRAFFIC Southeast Asia, TRAFFIC International.

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# ANNEXES:

## ANNEX 1. Appendix I and Appendix II Biological Criteria (Resolution Conf. 9.24)

## ANNEX 2.1 Summary of the IUCN RED LIST Categories and Criteria VERSION 2.4 (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)

***Note*: The numbers presented below are meant to serve as guidelines and not as thresholds.**

### CRITERIA FOR INCLUSION OF SPECIES IN APPENDIX I - Use of any of the A-D criteria

**A. Small Wild Population**

| | | |
|---|---|---|
| Small number of individuals and at least one of the following occurs: | | <5 000 |
| i) | decline in number of individuals, area or quality of habitat | 20% in 10 years or three generations |
| ii) | each subpopulation very small | <500 |
| iii) | individuals concentrated in one subpopulation during one life history phase | |
| iv) | large short-term fluctuation in number of individuals | <one order of magnitude over 2 yrs |
| v) | high vulnerability due to species biology or behaviour | |

B. **Restricted Distribution**

| | | |
|---|---|---|
| Restricted area of distribution and at least one of the following occurs: | | <10 000km$^2$ |
| i) | fragmentation/occurrence at very few locations | <500 km$^2$/subpopulation |
| ii) | large fluctuation in area or number of subpopulations | <one order of magnitude |
| iii) | high vulnerability due to species biology | |
| iv) | a decrease in any one of:<br>- area of distribution<br>- number of subpopulations<br>- number of individuals<br>- area or quality of habitat<br>- reproductive potential | |

C. **Declining Wild Population**

| | | |
|---|---|---|
| Decline in the number of individuals in the wild which has been either: | | 50% in five years or two generations |
| i) | observed as ongoing or having occurred in the past; or | |
| ii) | inferred or projected on the basis of:<br>- a decrease in area/quality of habitat<br>- level/patterns of exploitation<br>- threats from extrinsic factors (e.g., pathogens, competitors, parasites, predators, hybridisation, introduced species and the effects of toxins or pollutants)<br>- decreasing reproductive potential | |

D. **Likely to satisfy one or more of the above criteria within five years if not included in Appendix I**

* generation = average age of parents in the population

### 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 either of the following criteria is met**

A. Species will meet at least one of the Appendix I biological criteria in the near future, unless subject to strict regulation.

B. Harvesting of specimens from the wild for trade has, or may have, a detrimental impact on the species by either:

i) exceeding, over an extended period, the level that can be continued in perpetuity; or

ii) reducing it to a population level at which its survival would be threatened by 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 resemble individuals of a species included in Appendix II or Appendix I, such that a non-expert, with reasonable effort, is unlikely to be able to distinguish between them.

B. The species is a member of a taxon of which most of the species are already included in Appendix II or in Appendix I, and the remaining species must be included to bring trade in specimens of the others under effective control.

## Annex 2.1 Summary of the IUCN Red List Categories and Criteria Version 2.4 (IUCN, 1994)

Use any of the A-E criteria

| | **Critically Endangered** | **Endangered** | **Vulnerable** |
|---|---|---|---|
| **A. Population Reduction in 10 years or 3 generations at least:** **Using either 1 or 2** | 80% | 50% | 20% |
| (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 | | | |

| *(B continued)* | **Critically Endangered** | **Endangered** | **Vulnerable** |
|---|---|---|---|
| (3) Extreme fluctuations in any of the following:<br>a) extent of occurrence<br>b) area of occupancy<br>c) number of locations or subpopulations<br>d) number of mature individuals | > 1 order/mag. | > 1 order/mag | > 1 order/mag |
| **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 years or 1 generation | 20% in 5 years or 2 generations | 10% in 10 years or 3 generation |
| (2) A continuing decline observed, projected, or inferred at any rate in numbers of mature individuals AND (a) or (b):<br>a) population severely fragmented or<br>b) # of mature individuals in each subpopulation | <50 | <250 | <1000 |
| **D. Very Small or Restricted population** | | | |
| Either: | | | |
| (1) # of mature individuals | < 50 | < 250 | < 1000 |
| OR | | | |
| (2) population is susceptible | (not applicable) | (not applicable) | area of occupancy < 100km$^2$ or # of locations $\leq$ 5 |
| **E. Quantitative analysis** | | | |
| Indicating the probability of extinction in the wild to be at least | 50% in 10 years or 3 generations | 20% in 20 years or 5 generations | 10% in 100 years |

## 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: | | | |

| *(B continued)* | **Critically Endangered** | **Endangered** | **Vulnerable** |
|---|---|---|---|
| i) extent of occurrence<br>ii) area of occupancy<br>iii) area, extent and/or quality of habitat<br>iv) number of locations or subpopulations<br>v) number of mature individuals | | | |
| (c) Extreme fluctuations in any of:<br>i) extent of occurrence<br>ii) area of occupancy<br>iii) number of locations or subpopulations<br>iv) number of mature individuals | | | |
| **C. Small Population Size and Decline** | | | |
| Number of mature individuals<br>**AND either C1 or C2:** | < 250 | < 2 500 | < 10 000 |
| (1) An estimated continuing decline of at least:<br>(up to a maximum of 100 years) | 25% in 3 years<br>or 1 generation | 20% in 5 years<br>or 2 generations | 10% in 10 years<br>or 3 generation |
| (2) A continuing decline AND (a) and/or (b):<br>(a) i) # of mature individuals in each subpopulation:<br>(a) ii) OR % individuals in one subpopulation at least<br>(b) extreme fluctuations in the # of mature individuals | <br>≤ 50<br>90% | <br>≤ 250<br>95% | <br>≤1000<br>100% |
| **D. Very Small or Restricted population**<br>**Either:** | | | |
| (1) # of mature individuals<br>AND/ OR | < 50 | < 250 | < 1000 |
| (2) Restricted area of occupancy | (not applicable) | (not applicable) | area of occupancy < 20 $km^2$ or # of locations ≤ 5 |
| **E. Quantitative analysis**<br>Indicating the probability of extinction in the wild to be at least | 50% in 10 years<br>or 3 generations<br>(100 years max) | 20% in 20 years<br>or 5 generations<br>(100 years max) | 10% in 100 years |