CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA
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Thirty-third meeting of the Animals Committee
Geneva (Switzerland), 12 – 19 July 2024

Regulation of trade

Materials for the identification of specimens of CITES-listed species

IDENTIFICATION MANUAL OF ANIMALS LISTED IN CITES APPENDIX I

1. This document has been submitted by China as the focal point of the Expert Contact Group on the Identification Manual of Animals Listed in CITES Appendix I.[*]

2. During its thirty-second meeting (AC32; Geneva, June 2023), the Animals Committee considered document AC32 Doc. 19.2 submitted by China and welcomed the initiative entitled *Identification Manual of Animals Listed in Appendix I* (AIA-ID) that is being launched by the Endangered Species Scientific Commission (ESSC) as the CITES Scientific Authority of China. The initiative complements the mandate of the Animals and Plants Committee in Decision 19.142. The results are expected to feed into the joint intersessional working group on materials for the identification of specimens of CITES-listed species.

3. The Animals Committee requested the Secretariat to publish a Notification to the Parties asking Parties and observers to communicate to China their interest in participating in the initiative on *Identification Manual of Animals Listed in Appendix I* (AC32 SR). The Secretariat published Notification to the Parties No. 2023/087 on 18 July 2023, inviting Parties and observers to communicate their interest in participating in the initiative that has the following objectives:

   a) compile existing identification resources of Appendix-I listed animal species and conduct a gap analysis;

   b) based on the results, develop an updated "Identification manual of animals listed in CITES Appendix I".

4. The initiative has established an expert contact group, whose current membership is as follows:

   Membership:

   Co-Chairs: AC representative for Oceania (Mr. Robertson) and executive deputy director of the ESSC (Academician Mr. Wei);

   AC Members: Nomenclature specialist (Mr. van Dijk) and alternate representative (Ms. van Schingen-Khan)

   Focal point: representative of China (Ms. Zeng);

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

<table>
<tr><td>Parties:</td><td>Botswana, China (and TESA programme), Germany, India, Mexico, Peru, South Africa, Spain (Universidad Internacional de Andalucía), Thailand, The United Republic of Tanzania; and</td></tr>
<tr><td>IGOs and NGOs:</td><td>United Nations Environment Programme–World Conservation Monitoring Centre (UNEP-WCMC), AsiaCat, China Wildlife Conservation Association (CWCA), Environmental Investigation Agency (EIA)-UK, Humane Society International (HSI), International Fund for Animal Welfare (IFAW), German Society of Herpetology (DGHT), TRAFFIC, Wildlife Conservation Society (WCS), and World Wide Fund (WWF) for Nature-China.</td></tr>
</table>

Activities and progress

5.   The work will be carried out in two phases:

   a)   The first phase is to complete the collation work to inform the development of the new AIA-ID, and

   b)   the second phase is to move forward with developing the new AIA-ID.

6.   Experts in the contact group worked mainly through electronic means during the first phase. Four subgroups have been established to organise the work of the first phase. Experts volunteered to join the subgroup and served as coordinators under the following mandates:

Group 1 Human Resources

Draft Mandate	• Establish a multilingual, multi-regional, multi-taxonomic specialist database; • At the request of each group, coordinate a group of experts who are qualified to review ID materials and/or to confirm voucher images and a group of persons and institutions who evaluate ID materials; and • Coordinate online meetings at the request of each group.
Coordinators	Mr. Antonio Galilea Jiménez (SPAIN, UNIA Master Programme)
Members	Nomenclature specialist of the CITES Animals Committee, United Republic of Tanzania, AsiaCat, CWCA, WCS, WWF

Group 2 Online Library

Draft Mandate	• Operate an online library collecting multilingual, multi-regional, and multi-taxonomic Appendix I animal species identification materials; • Consider appropriate indexes or a book cataloguing system; and • Develop an Online Library User Guide to facilitate the gap analysis and other evaluations.
Coordinators	Ms. Ling Xu (TRAFFIC, online library operator)
Members	Nomenclature Specialist of the CITES Animals Committee, Tanzania, CWCA

Group 3 Gap Analysis

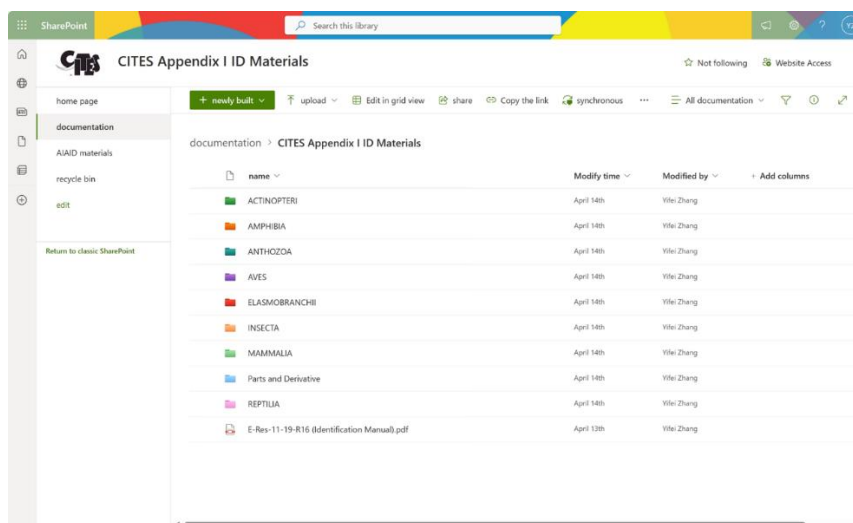| Draft Mandate	• Discuss and draft gap analysis methodology, including identifying scope, evaluation items and tools; and • Draft gap analysis report to provide overall guidance on the development of the AIA-ID.
Coordinators	Ms. Zeng, Yan (China)
Members	Nomenclature Specialist of the CITES Animals Committee, Germany, WCS

Group 4 Voucher image database

Draft Mandate	• Discuss and draft image storage standards and accurate labelling ways;
	• Invite qualified experts to review the image label and approve the voucher image;
	• Advise on the legal context of proprietary image protection, copyright, security, use, etc.; and
	• Provide recommendations on ownership and use of the voucher image database.
Coordinators	Vacancy
Members	Nomenclature Specialist of the CITES Animals Committee, China, AsiaCat, IFAW, WWF

7. On November 7, 2023, 30 representatives from Animals Committee, China, Germany, New Zealand, Peru, South Africa, the United Republic of Tanzania, UNEP-WCMC, AsiaCat, CWCA, EIA-UK, HSI, IFAW, TRAFFIC, and WCS met in Geneva for the kick-off of AIA-ID initiative. The meeting solicited comments and views on the proposed structure of the expert contact group, work stages, milestones, and subgroup plans. The kick-off meeting agreed on the form for ID information on animals listed in CITES Appendix I (Annex 1) for the evaluation and development of identification materials and subgroup plans and mandates for the initiative's first phase.

8. On February 2, 2024, experts met online, shared progress on subgroup activities and the online library, and discussed the work on the gap analysis, obstacles, and the checkpoint before AC33. It was recommended that a *Table of the Inventory and the Checklist of AIA-ID* (Annex 2) provided by UNEP-WCMC be used as a starting point for a gap analysis.

The Online Library

9. TRAFFIC has created an online library for sharing and storing CITES Appendix I ID materials (identification guide) using TRAFFIC"s Sharepoint platform to enable access to experts from around the world. Currently, 28 files are collected in the library. The online library separated them into different folders based on the species order so that it is straightforward for users to look for materials in the library. TRAFFIC is working on a search function in the library to facilitate searching for specific species or content across the files stored in the library.

10. All experts involved in the initiative can view and download files through a shared link to this online library. However, because the library is built upon TRAFFIC"s internal platform, there are restrictions on who can edit and manage the library. A designated staff from TRAFFIC is responsible for uploading new materials to the folders to ensure the library stays updated.

(Image, a screenshot of the online library webpage)

11. During March and April 2024, one fellow of the Talent Exchange Programme for CITES Scientific Authorities (TESA) worked on updating and developing a country-level AIA-ID for Kenya. The project highlighted areas that needed synergies, such as species shared across borders and a good basis of work to ensure the right direction, complementing each other rather than duplicating efforts.

12. The focal point has reached an initial intention with the China Animal Scientific Database (http://www.zoology.csdb.cn) to develop an information system related to the ID manual to improve the efficiency of the second phase, to facilitate the full participation by the CITES community, integrate existing materials and online library resources, and explore digital innovative update mechanism. At present, the two sides are seeking financial support and technical cooperation.

13. The focal point has reached out to the Lynx Nature Book about copyright for species illustrations and to discuss future digital use and publication matters. Due to the large number of mammals and birds listed in Appendix I of CITES, and the diversity of partners who hold the copyrights of illustrations for print and digital uses, the case was presented to Lynx partners, including the Cornell Lab of Ornithology to see any possibility and costs.

Gap analysis and comments

14. As a result of the activities above, experts jointly conduct a gap analysis based on the inventory of ID materials available on the CITES Checklist and Species+ and the CITES listings of Appendix-I animals downloaded in September 2023. Findings and comments are provided on the date of publication, the taxa covered, the language used, and the harmonisation with the current taxonomic status of the identification material in this form, etc. The analysis includes holistic views and some specific to the fauna of their interest.

   a) Overall, CITES ID Manuals from 1986 comprise only a portion of the current Appendix I listed animal species and are outdated and no longer very useful. Species are not included for various reasons, such as the fact that the species is not scientifically described until after or during the preparations of ID guides, or that the species was not described at the species level in the guide, or that the species was subsequently listed in CITES Appendices, or subsequent changes in nomenclature references adopted by CoPs.

   b) While some national guides on CITES-listed species are published in French, such as the national guides for Gabon, there is a significant gap between the ID materials available in the working languages of CITES.

   c) The preparation of identification materials has been a long and drawn-out process. Any differences in nomenclature between an existing guide and the relevant standard reference, as well as how that process of development can be shortened, should be considered. Therefore, the second phase of AIA-ID development should identify priority areas and working mechanisms.

   d) A question raised is whether there is a necessity for detailed ID manuals for all species, especially against the background of the question of whether the species is found in international trade and, if yes, what kind of commodity the species is traded as.

   e) Experts discussed priority taxa listed in CITES Appendix I, such as Sawfish (*Pristis* spp.) and Mollusca from the United States of America and Cuba, that may require the development of identification materials and provided some solutions for other species.

   f) With regards to existing ID materials, **for mammals,** *Handbook of the Mammals of the World* – Volumes 1-9 edited by Don E. Wilson, Russell A. Mittermeier, Thomas E. Lacher and published by Lynx Edicions in association with Conservation International and IUCN illustrate and describe every living species of mammal on Earth. In addition, last year's *fifth Edition of Lemurs of Madagascar* provides detailed information on Madagascar''s lemurs. The 4th edition of the above Lemur Guide has been presented in the App for Lemur Watching. **For bird species**, it is the same.

   g) **For reptiles,** there are more up-to-date ID materials for *Abronia* spp. (Identification guide for dragons (arboreal alligator lizards, *Abronia* spp.) regulated by CITES (EN/ES/FR) 2017) and *Varanus* spp. (Auliya, M. & A. Koch. 2020. Visual Identification Guide to the Monitor Lizard Species of the World (Genus Varanus). - Bundesamt für Naturschutz, BfN-Skripten 552. https://www.bfn.de/publikationen/bfn-schriften/bfn-schriften-552-visual-identification-guide-monitor-lizard-species). For the newly listed Appendix I *Kinosternon* species (*K. cora* and *K. vogti*): the proposal

already included an identification key in the Annex (without any illustrations). Furthermore, species descriptions by Loc-Barragan et al. (2020) and Lopez-Luna et al. (2018) provide useful content for the identification of the two species (https://doi.org/10.11646/zootaxa.4885.4.3 and https://doi.org/10.2744/CCB-1292.1). In the case of reptile species listed at CoP18 and CoP19 (e.g. *Ceratophora* spp., *Cophotis* spp.), there are also detailed species descriptions including photographs in the following publications which were published by BfN in collaboration with DGHT: Langner, C., Pfau, B., Bakowskie, R., Arranz, C. & A. Kwet (2021): Evaluation of the captive breeding potential of selected reptile taxa included in appendices I and II at CITES CoP17 - Bundesamt für Naturschutz, BfN-Skripten 609. (https://www.bfn.de/publikationen/bfn-schriften/bfn-schriften-609-evaluation-captive-breeding-potential-selected); Langner, C., Pfau, B., Bernardes, M., Gerlach, U., Hulbert, F., van Schingen-Khan, M., Schepp, U., Arranz, C., Riedling, M. & A. Kwet (2022): Evaluation of the Captive Breeding Potential of Selected Amphibian and Reptile Taxa Included in Appendices I and II at CITES CoP18. - Bundesamt für Naturschutz, BfN-Skripten 627. (https://www.bfn.de/publikationen/bfn-schriften/bfn-schriften-627-evaluation-captive-breeding-potential-selected). The fellow of the TESA programme is working on a new version of the ID manual for *Malacochersus tornieri* and sea turtles.

h) **For amphibian species**, like Bufonidae in Africa, CITES ID material exists, but in some cases the respective species is included under a different taxonomic name (e.g. *Altiphrynoides osgoodi* is included in CITES Identification Guide on Amphibians from 2006 but as *Sphinophrynoides osgoodi*). However, quite a few species of amphibians have no such CITES ID materials, such as most *Nectophrynoides* spp., *Telmatobius culeus* and *Neurergus kaiseri*. However, some species, like *Telmatobius culeus* and *Neurergus kaiseri* have distinct diagnostic characters and can be rather easily identified by morphology. There are two comprehensive online databases, Amphibian Species of the World (https://amphibiansoftheworld.amnh.org/) and AmphibiaWeb (https://amphibiaweb.org/), which include many valuable references and detailed species descriptions and photographs in many cases. For *Nectophrynoides*, the genus which provides for most Appendix I listed amphibian species, there is also a field guide (Channing, A., and M.-O. Rödel. 2019. Field Guide to the Frogs & Other Amphibians of Africa. Cape Town, South Africa: Struik Nature.). There is virtually no legal international trade, and no illegal use or trade is known to occur (according to IUCN Red List assessments) in the majority of Appendix I listed amphibian species. Also, use and trade cannot be anticipated in the future (e.g. most *Nectophrynoides* spp.). Accordingly, the need for detailed identification material appears to be a relatively low priority in these cases.

i) Annex 3 to this document demonstrates DGHT's gap analysis and recommendations on ID materials for amphibians and reptiles. Specific comments and recommendations on ID materials regarding reptiles and amphibians provided by the German Scientific Authority and DGHT have been included in the *Table of the Inventory and the Checklist of AIA-ID* (Annex 2) as worksheets.

The ambition of the new "Identification manual of animals listed in CITES Appendix I"

15. Given the above analysis and comments, the development of a new ID manual needs to explore innovative ways to provide sustainable access, integration, analysis and update mechanisms for relevant data and resources. The initial intention mentioned in paragraph 11 is to use natural language processing techniques, relevant big data models and database technology to build a CITES species knowledge base, prioritising the animal species listed in CITES Appendix I and gradually expanding to other species.

16. Primary data and information are mainly derived from existing ID materials, CoP proposals, literature, monographs, and species databases. Artificial intelligence will be used to analyse, extract, and store data. A group of experts will oversee the review and validation of this data to form a scientific and credible knowledge base of CITES species ID materials. Reviewed and verified species ID knowledge can be compiled on a regular basis into the CITES Appendix ID manual or handbook, or it can be used by specific Parties and stakeholders to develop specialised species ID materials for publication. The system is expected to provide continuous access to species knowledge through this intelligent and automated model, forming a sustainable CITES ID manual update mechanism.

17. The CITES species knowledge base and the CITES ID Manual have high requirements for the professionalism of users, which may meet the needs of law enforcement or customs for general, rapid and accurate identification. The future of this system aims to improve law enforcement capabilities and efficiency through AI-assisted ID (still AIA-ID) recommendations.

18. The characteristics of data and illustrations of CITES species are unbalanced, especially the difficulty of obtaining photos of some species. Based on the multimodal data of species (including morphology, anatomy,

habitat, etc.) and advanced AI technology in the CITES species knowledge base, the system will develop a large language model that can provide text and image complementation to the knowledge base.

Key steps for the new ID manual

19. In response to the ambition of the new ID manual, the key steps for the new AIA-ID may be the establishment of a knowledge base of CITES ID for Appendix I animal species. Therefore, the expert contact working group shall continue to coordinate its work in four sub-groups, and Group 3 will be modified as follows:

Group 3 Knowledge base

Draft Mandate	• Identify a list of candidate data sources and the criteria for the database; • Participate in the debugging and training of text parsing of large language models and supervise the model to extract data according to the criteria; • Review, revise, supplement and verify CITES ID data for Appendix I animal species; and • Consider and advance the system's multi-language automatic translation function.
Coordinators	China
Members	Nomenclature Specialist of the CITES Animals Committee, Germany, WCS

20. While the development of the knowledge base will focus on the Appendix I fauna, this work will cover a wider area and will urgently need to be coordinated with other processes of the Convention to avoid duplication of work. It is recommended that mechanisms be established to integrate technical cooperation, financial support and computing capacity.

Recommendations:

21. The Animals Committee is invited to:

    a) note of the progress and activities made by the Expert Contact Group on the Identification Manual of Animals Listed in CITES Appendix I;

    b) invite more Parties, especially French speakers and stakeholders, including zoos and aquariums, to contribute to the initiative, as well as to make more ID materials available to experts through the Online Library and the image database;

    c) provide comments and further instructions on the gap analysis and comments set out in paragraph 14 and the ambition of the new ID Manual in paragraphs 15-18, if any;

    d) formulate recommendations on the work and steps planned in paragraphs 19-20.

ID information on animals listed in CITES Appendix I

The development of CITES identification materials should be guided by the need to recognize both animals and parts and derivatives thereof in trade and provide information of sufficient quality and detail, to support implementation and enforcement for CITES Appendix I listing animal species.

The following table has been adapted from the Annex to the Resolution Conf. 19.4 of CITES to remind the need to compile relevant species information.

ID information on animals listed in CITES Appendix I

Order	(Information is available on Species+)
Family	(Information is available on Species+)
Genus	(Information is available on Species+)
Species	(Information is available on Species+)
Synonyms	(Information is available on Species+, supplemented as needed)
Vernacular Names	(Multi languages, as available) (Information is available on Species+, supplemented as needed)
Appendix I	(Describe the split-listing as needed)
Geographic range	(Information is available on Species+, supplemented as needed)
Distribution by country	(Information is available on Species+, supplemented as needed)
Description	
Animals	(Identifying features may include morphological, anatomical, physiological, behavioural, or molecular information)
Parts and derivatives	(Specimens in trade[1])
Trading patterns	(Uses and known trading patterns)
Other information	(Verifiable methods for distinguishing wild from non-wild specimens)
Similar species or commodities	
Images	
Animals	(Line drawings or diagnostic images)

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[1] *It should be noted that all references to 'trade' refer to trade as defined in Article I of the Convention.*

Parts and derivatives in trade	(Colour photos of parts or commodities in trade, or finished products)

Description (as additional information and as appropriate)

Pharmaceutical names	(Multi languages, as available)
Parts and derivatives in trade	(Characteristics like odour, taste etc. for species of plants or animals traded for medicinal purposes)
Other information	(available information on conversion metrics)

References

Author, affiliation, date	

Identification Manual of Animals Listed in CITES Appendix I (AIA-ID)

Gap analysis, comments and recommendations by the German Society of Herpetology (DGHT) with special emphasis on reptiles and amphibians

Gap analysis, based on the Inventory of group specific ID materials which are available in the CITES Virtual College or within the documents section of Species+

In the first step we assessed the ID materials within the CITES Virtual College and in Species+, with a focus on tortoises and freshwater turtles. Based on this we suggest the following:

Retain the following documents within the CITES virtual college:

- Identification Guide to Tortoises and Freshwater Turtles: Parts, Products and Derivatives in Trade (in the CITES Viral College)
- Guidance to Photographing Live Tortoises and Freshwater Turtles for Identification
- Manual for the differentiation of captive-bred and wild-caught turtles and tortoises
- Identification Manual for the Conservation of Turtles in China (even being partly outdated)
- Identification guide for the Anderson's Crocodile Newt (*Echinotriton andersoni*) endemic to Japan, listed in CITES appendix III
- Identification guide for the *Goniurosaurus* eyelid geckos endemic to Japan
- Visual Identification Guide to the Monitor Lizard Species of the World (Genus *Varanus*)

The link to the SANBI IDentifyIt entry in the CITES Virtual college is an appriopriate option for information access.

Retain the following documents within Species+:

- Bushmeat: Information and identification guide
- CITES Identification Guide: Hunting Trophies
- CITES Identification Guide: Turtles and Tortoises
- CITES ID Manual - *Caretta caretta* - Parts and Derivatives
- CITES ID Manual - Cheloniidae
- CITES ID Manual - Testudines - Parts and Derivatives – Turtle skins (even being partly outdated)
- CITES ID Manual - Testudines - Parts and Derivatives – Tortoise products (the links to the English versions are obviously mixed up with Tortoise shell)
- CITES ID Manual - Testudines - Parts and Derivatives – Tortoiseshell (the links to the English versions are obviously mixed up with Tortoise Products)
- Guidance to Photographing Live Tortoises and Freshwater Turtles for Identification
- Guide d'identification: Des espèces du Gabon CITES
- Identification Guide to Tortoises and Freshwater Turtles: Parts, Products and Derivatives in Trade (in the CITES Viral College) (correct broken link or upload document)
- Identification Manual for the Conservation of Turtles in China (even being partly outdated)
- Manual for the differentiation of captive-produced and wild-caught turtles and tortoises
- Picture guide to illegal wildlife parts and products commonly found in Southeast Asia
- Traditional Asian Medicine Identification Guide for Law Enforcers

- Visual Identification Guide to the Monitor Lizard Species of the World (Genus *Varanus*) (link has to be corrected or upload doc.)

The link to the SANBI IDentifyIt has to be renewed!

Outdated materials to be completely removed from Species+

All CITES ID Materials on the above mentioned animal groups, covering mainly genus and species information, have to be considered outdated and do not correspond to current taxonomic/systematic views on the taxa concerned. Considering the work load to update these documents, we recommend to replaced them by links to data collections which are frequently updated.

Gap analysis, based on the Inventory of species-specific ID materials available on Species+

We focused on checking the ID materials for reptile species on the first sheet "Appendix I" (see attached file "DGHT recommendations (reptiles) to the Inventory of ID materials".)

Based on these analyses we recommend:

As a first step would we recommend to link to the IUCN Red List Assessment as these contain photos showing specific characters to identify species, including a species description with references. In the IUCN Red List most CITES Appendix I species have already been assessed, and the major part of the Appendix II species as well. We have added the linking suggestions in the attached EXCEL sheet for the Appendix I reptile species (column L). Updating these links will be easy to realize by an advanced search at the IUCN website, once a new release of the IUCN Red List has been uploaded.

The second step would be to link to the species-specific pages within the comprehensive family or genus identification guide documents in species+ or in the CITES Virtual College. We have shown examples of this linking method in the attached EXCEL sheet for the Appendix I species of *Varanus* (column M).

Additional species-specific ID materials which could be provided

In 2021 and 2022 two reports were compiled for the Federal Agency of Nature Conservation (BfN), commissioned by the CITES Scientific Authority of Germany, and accomplished by DGHT:

LANGNER, C., B. PFAU, R. BAKOWSKIE, C. ARRANZ & A. KWET (2021b): Evaluation of the Captive Breeding Potential of selected Reptile Taxa included in Appendices I and II at CITES CoP17. Bonn (BfN-Skripten 609): 247 pp.

LANGNER, C., B. PFAU, M. BERNARDES, U. GERLACH, F. HULBERT, M. VAN SCHINGEN-KHAN, U. SCHEPP, C. ARRANZ, M. RIEDLING & A. KWET (2022b): Evaluation of the Captive Breeding Potential of Selected Amphibian and Reptile Taxa Included in Appendices I and II at CITES CoP18. Bonn (BfN-Skripten 627): 271 pp.

These reports are available on the BfN web site. It is possible to link to the taxon specific chapters within these documents, see some examples in the attached EXCEL sheet for the Appendix I species (column M).

A third report in this series, on the reptiles and amphibians which have been adopted for inclusion in Appendix I or II at the CITES CoP19, is in preparation and will be available by May 2025.

*data compiled and analyzed by Dr. Beate Pfau, advisor of international project management