

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



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CITES TRADE – A GLOBAL ANALYSIS OF TRADE IN APPENDIX-I LISTED SPECIES

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CITES Trade -

A global analysis of trade in Appendix I-listed species

United Nations Environment Programme

World Conservation Monitoring Centre

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UNEP World Conservation Monitoring Centre
219 Huntingdon Road
Cambridge
CB3 0DL
United Kingdom
Tel: +44 (0) 1223 277314
Fax: +44 (0) 1223 277136
Email: species@unep-wcmc.org
Website: www.unep-wcmc.org

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PREPARED FOR

Bundesamt für Naturschutz, Bonn, Germany

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Executive summary

This report provides an analysis of trade in species included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since the Convention came into force in 1975. It focuses on key trade terms for each taxonomic group, identifies trade important to each CITES region, highlights success stories and potential areas of concern in relation to implementation and reporting.

Trade patterns

- Trade in mammals (which represents almost half of Appendix I species) was dominated by skins (unspecified source), specimens (predominantly of wild origin) and captive bred live mammals. Whilst a high volume of derivatives were also reported, such trade is difficult to equate to number of individuals and therefore determining its impact on wild populations is problematic.
- For several taxonomic groups (notably live birds, reptiles and fish) commercial trade in captive produced specimens has increased over time; however the majority of trade was dominated by a relatively small number of taxa. The five main exporters of live birds (all European) predominantly traded species which were non-native.
- Plant trade was dominated by artificially propagated derivatives and roots, although trade in derivatives has declined substantially since the early 1990s. *Saussurea costus* (Costus root) was the predominant taxon in trade under these terms. Virtually all trade in plant derivatives occurred between countries within the Asian region.
- The CITES region that issued the highest number of export permits in 1975-2010 was North America, but exports by volume were dominated by the Asian region. Plant trade dominated exports by volume from Africa and Oceania (live plants), Asia (derivatives) and Central and South America and the Caribbean (timber). Europe's largest export in terms of volume was mammal meat (whales).

Compliance

- Poor reporting in the earlier years of the Convention precludes a comprehensive analysis of infractions of the Convention relating to trade in Appendix I specimens; however, the commercial use of wild-taken specimens occurred in every year from 1990-2010 demonstrating a continued problem. Infractions mainly involved mammal and reptile taxa.
- Seizure data (recorded as source 'I') was most prevalent for mammals, reptiles and plants. High profile species including elephants and sea turtles featured highly; it is probable that many ivory, carving and leather product seizures represent personal tourist souvenirs, and seizures of mammal and plant derivatives relate to Traditional East Asian Medicines.
- Sustainable use programmes exist for a number of Appendix I species. Whilst CoP-approved quotas for hunting trophies or skins appear to have been generally complied with, they may have been exceeded in some instances.

Successes

- Fifty-seven taxa were transferred from Appendix I to II by the first fifteen meetings of the Conference of the Parties, demonstrating that tight controls on international trade combined with national or regional management can be effective in improving species conservation status.

Reporting

- Overall, reporting of source and purpose codes improved notably between the two 15 year periods, 1981-1995 and 1996-2010.
- Submission of annual reports continues to be variable with many Parties providing reports after the deadline established by the Conference of the Parties. Errors in reporting of Appendix I trade were varied and numerous, and included incorrect use of source codes, incorrect Appendix applied for split-listed species and trade reported at higher taxon levels. Specific guidance on reporting of trade to address these issues is provided.

Recommendations

- Recommendations have been drawn from the analysis for consideration by the Parties and the Conventions technical and political bodies (Animals and Plants Committees and Standing Committee). These aim to improve implementation, compliance with the Convention and its Resolutions, and reporting. A number of technology developments are suggested as a means to further assist implementation of the Convention.
- To improve compliance and reporting, it is recommended that an online integrated information management system for national CITES permitting procedures linked to the CITES trade and Species databases managed by UNEP-WCMC is developed.
- To address apparent high levels of seizures in products that are likely to represent tourist souvenirs, a database established to inform German tourists about CITES species in trade could be expanded to include additional data for wider use.
- Where the level of trade in of Appendix I species subject to reservations is of concern, a review by the Plants and Animals Committee may be appropriate to ensure that robust non-detriment findings are being made.
- To assess the cost-effectiveness of reporting large quantities of trade in derivatives, scientific specimens, feathers and other items, a study similar to that conducted by the Plants Committee on the trade and reporting of artificially propagated plants would be worthwhile.

1 Introduction

This report provides the first analysis of all reported international trade in species included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since the Convention came into force in 1975. CITES is an international agreement between 176 States¹ (Figure 1.1) that aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival in the wild. It affords varying degrees of protection to close to 35 000 species of animals and plants.

Appendix I includes species that are threatened with extinction that are or may be affected by trade. Accordingly, trade in specimens of Appendix I species is subject to particularly strict regulation in order not to further endanger the species survival. Trade is authorized only in exceptional circumstances. Currently, there are 625 species and 44 subspecies of

animals and 301 species and 4 subspecies of plants included in Appendix I.

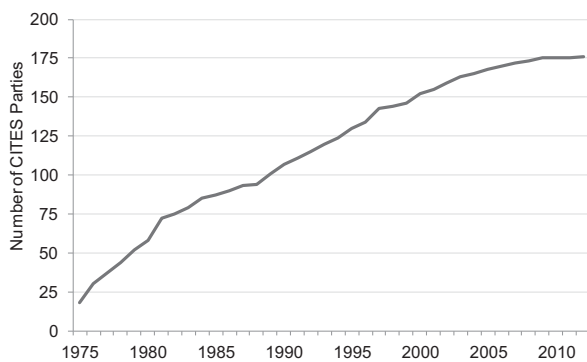


Figure 1.1: Number of CITES Parties over time, 1975-2012

The majority of trade in wild-sourced Appendix I species is for non-commercial purposes, for example, scientific or breeding purposes or hunting trophies. Commercial trade is permitted only where specific exemptions are met, where the trade represents no risk to the wild populations (see Box 1.1). Captive bred and artificially propagated specimens of Appendix I species are deemed to be

specimens of species included in Appendix II (in accordance with Article VII of the Convention).

Parties to CITES are required to submit annual reports detailing their trade in CITES-listed species. These data are entered into the CITES Trade Database, managed for the CITES Secretariat by UNEP-WCMC. The database includes over 13 million records of CITES trade (Figure 1.2). CITES trade data provide the basis for monitoring the implementation of the Convention and are used to inform many key CITES processes, such as making non-detriment findings, reviewing trade levels, quota management and assessment of compliance. Data used

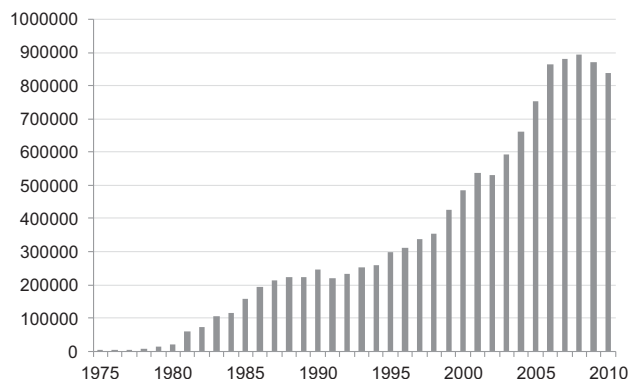


Figure 1.2: Number of trade transactions in the CITES Trade Database, 1975-2010.

¹ Excludes the Maldives, for which CITES will enter into force on 12/03/2013.

in this report cover trade in Appendix I species over the period 1975-2010.

The aim of this report is to enable the CITES community to improve its understanding of the global trends in trade of Appendix I species. It provides an analysis of trends in the major trade terms within each taxonomic group, identifies trade important to each CITES region, and highlights success stories and potential areas of concern. A number of recommendations to support both improved implementation of CITES Appendix-I listings and national reporting of this trade are provided.

Box 1.1: Under what circumstances can trade in Appendix I species occur?

In accordance with Article III of the Convention, the Management Authority of the State of import must be satisfied that the import of an Appendix I specimen will be for purposes non-detrimental to the survival of the species, and that the specimen is not to be used for primarily commercial purposes. The Management Authority of the State of export must also ensure the export is non-detrimental to the species survival and that the specimens were legally acquired, and must be satisfied that an import permit has been granted.

Article VII provides a number of exemptions relating to trade in Appendix I specimens, whereby Article III does not apply, including where specimens are personal and household effects (reported in trade under purpose codes P or H), where specimens have been bred in captivity or were artificially propagated (source codes C, D or A), or where they were acquired prior to the provisions of the Convention becoming applicable to the specimens (i.e. they are pre-Convention and reported in trade under source code O).

The Convention has provided Parties with general principles to define 'primarily commercial purposes' within Conf. Res. 5.10 (Rev. CoP15.). Activities whereby economic benefit in any form is the primary purpose are described as 'commercial'; as is any transaction that is not wholly 'non-commercial'. The Convention has agreed that any use where the non-commercial aspects do not clearly predominate shall be considered to be primarily commercial in nature. The Resolution provides examples of situations where an import of specimens of Appendix I species could be considered not to be for primarily commercial purposes (e.g. purely private use, scientific purposes, education or training).

2 Methodology

This analysis considers trade in Appendix I species over the period 1975-2010. The data used were taken from the CITES Trade Database on 31 August 2012. Any annual reports not included in the database at that time were not included in the analysis. Trade figures used are based on both country of export-reported and country of import-reported data (hereafter referred to as exporter-reported and importer-reported respectively).

2.1 Data included

Trade in all terms (or descriptions of specimens), from live plants and animals to parts and derivatives, was included in the analysis. A list of accepted terms is provided in Notification No. 2011/019 'Guidelines for the preparation and submission of CITES annual reports' and is provided for reference in Annex A. A number of non-standard units of measure, including 'shipments' and 'flasks' were excluded; all other units were standardised (e.g. grams to kilograms).

The analysis covers three main reporting periods: 1975-1980; 1981-1995 and 1996-2010. The main focus covers the latter two fifteen year periods which allow for comparisons of trade and reporting over time. In the first few years following the Convention's entry into force (1975-1980), there were substantially fewer Parties (62), a lower number of reported transactions and poorer quality data due to incomplete reporting at that time.

2.1.1 Purpose and source

Trade in all purposes (Table 2.1) and sources (Table 2.2), as outlined in Notification No. 2011/019, were included in the analysis; however, items reported under source code I (confiscated/seized) were analysed separately.

Table 2.1: Purpose codes

Purpose code	Description
T	Commercial
Z	Zoo
G	Botanical garden
Q	Circus or travelling exhibition
S	Scientific
H	Hunting trophy
P	Personal
M	Medical (including biomedical research)
E	Educational
N	Reintroduction or introduction into the wild
B	Breeding in captivity or artificial propagation
L	Law enforcement / judicial / forensic

Table 2.2: Source codes

Source Code	Description
W	Specimens taken from the wild
R	Ranched specimens: specimens of animals reared in a controlled environment, taken as eggs or juveniles from the wild, where they would otherwise have had a very low probability of surviving to adulthood
D	Appendix-I animals bred in captivity for commercial purposes in operations included in the Secretariat's Register, in accordance with Resolution Conf. 12.10 (Rev. CoP15), and Appendix-I plants artificially propagated for commercial purposes, as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 4, of the Convention
A	Plants that are artificially propagated in accordance with Resolution Conf. 11.11 (Rev. CoP15), as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 5 (specimens of species included in Appendix I that have been propagated artificially for non-commercial purposes and specimens of species included in Appendices II and III)
C	Animals bred in captivity in accordance with Resolution Conf. 10.16 (Rev.), as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 5
F	Animals born in captivity (F1 or subsequent generations) that do not fulfil the definition of 'bred in captivity' in Resolution Conf. 10.16 (Rev.), as well as parts and derivatives thereof
U	Source unknown (must be justified)
I	Confiscated or seized specimens (may be used with another code)
O	Pre-Convention specimens

2.1.2 Regional analysis

A regional analysis was conducted according to the six CITES Regions (Africa, Asia, Central and South America and the Caribbean Europe, North America and Oceania². Overseas territories and dependencies of CITES Parties were considered part of the region of the Party. Non-Parties were allocated regions according to geographic location, where applicable. Data were excluded where a CITES Region could not be allocated, for instance where the origin or exporter was reported as 'unknown' or 'various'.

2.1.3 Reservations and suspensions

To assess compliance with CITES measures introduced to suspend trade 2012, all suspensions (historic and current) were extracted from the UNEP-WCMC Species Database in September 2012. Valid reservations and withdrawals were also extracted (on 17th October 2012).

2.1.4 Conference of the Party (CoP) proposal documents

Proposals to amend the Appendices submitted to meetings 1-15 of the CITES Conference of the Parties (CoPs) were collated by UNEP-WCMC. Data for each proposal included the proponent, proposal type (inclusion in, or deletion from Appendix I, and transfers between Appendices I and II), status (accepted/rejected/withdrawn), and whether the proponent was a range States for the taxa concerned. Countries were considered range States if populations were breeding or vagrants. A total of 1129 proposals affecting Appendix I were considered.

² <http://www.cites.org/eng/disc/parties/index.php>

Cumulative species listings by CoP were calculated by taxonomic group. For proposals relating to higher taxa, standard references adopted by the CoP at that time were used to reconcile the number of species affected by the proposal. Where no standard references had been accepted (notably for pre-1983 proposals), the UNEP-WCMC database was used to determine the number of species recognised. Subsequent changes to CITES standard nomenclature which can result in species being lumped or split, were not considered. The graphs included therefore show comparative trends in the listings of Appendix I species, rather than absolute figures. The current number of listings for each taxonomic group, as shown on the CITES website, is provided for reference.

Where proposals addressed only a population of a species, the species was added to the cumulative list where it represented the first listed population. Subsequent additions of populations of the same species were not included. Similarly, deletions of populations of species affected the total Appendix I species count only where the population concerned was the last remaining in Appendix I.

2.1.5 IUCN status assessments

The status of the species according to the IUCN Red List of Threatened Species³ was included in summary tables of taxa in trade. Red list assessments were downloaded from the IUCN website in December 2012 and added to the CITES trade data where exact species names or synonyms could be matched. While the Red List category can provide an indication of the global status of species, it should be noted that assessment may not necessarily reflect of the status of national populations and there are nomenclature differences between IUCN and CITES.

2.1.6 Valuation

An estimated value is provided for several selected Appendix I species (captive bred birds and leopard trophies). Values are based on a preliminary methodology developed by UNEP-WCMC (see http://www.cites.org/eng/news/sundry/2012/20120723_trade_snapshot.php) to assess the value of trade at one point in the market chain. The basis for calculations was the “Declared U.S. Dollar Value” from the United States of America (hereafter referred to as U.S.) CITES Annual Reports. The U.S. is a major importer and exporter of CITES-listed species. These price data were extrapolated to calculate the value of trade for selected Appendix I species globally. Price data for Appendix I plants were not available. Global volumes of trade were derived from the CITES Trade Database.

2.1.7 Terminology

The term ‘captive sources’ refers to trade reported as C (bred in captivity), F (born in captivity) and D (bred at an operation registered with the Secretariat in accordance with Res. Conf. 12.10 (Rev. CoP15)).

Throughout the report for brevity, countries of export and countries of import were referred to as exporters and importers respectively.

³ www.iucnredlist.org

3 Trade trends in major taxa

This section provides an overview of noteworthy patterns of direct trade by taxonomic group (mammals, birds, reptiles, amphibians, fish, invertebrates and plants). The overview examines the main terms traded for each group, the sources reported and species involved, as well as identifying the key trading partners.

3.1 Mammals

There are currently 297 mammal species (including 10 populations) and 23 subspecies (including two populations) listed in CITES Appendix I. Mammals represent almost half of all animal species listed in Appendix I. Whilst there are over 50 mammal families represented in CITES Appendix I, the families with the highest proportion of species listed are Bovidae (antelopes, cattle, duikers, gazelles, goats, sheep, etc), Cercopithecidae (Old World monkeys), Cheirogaleidae (dwarf lemurs) and Felidae (cats).

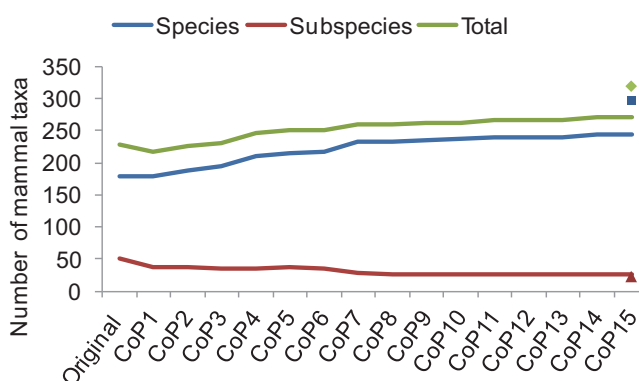


Figure 3.1: Cumulative listings of Appendix I mammal taxa as determined by accepted CoP proposals. Data points indicate the number of current listings considering changes in standard nomenclature.

The original Appendices included 178 mammal species in Appendix I and further species have been added at each subsequent CoP except for CoP15 (Figure 3.1).

3.1.1 Direct trade

Over the 36 years 1975-2010, mammals listed in CITES Appendix I were mainly traded for their derivatives and skins, with comparatively low volumes of trade reported in live animals. Analysis of trade in derivatives revealed that virtually all exports were from China during the years 1990-1992, and comprised three main taxa; *Panthera tigris* (Tiger) (almost 12.6 million derivatives), *Rhinocerotidae* spp. (rhinos) (over 50 000 derivatives), and *P. pardus* (Leopard) (over 48 000 derivatives). As this trade appears to be exceptional, rather than a general trend, no further analysis of mammal derivatives is included (see Box 3.1).

The remainder of the analysis focuses on direct exports of the main mammal term in trade – skins (Figure 3.2), and also provides a summary of trade in live mammals, meat (traded in kg) and hunting trophies (Box 3.2).

Box 3.1: Determining actual quantities of fauna and flora in trade from CITES trade data

Derivatives appear to be the most prevalent trade term for Appendix I mammals. However, the use of certain part/derivative codes can cause misinterpretation relating to the significance of such trade. China's annual report for 1990 refers to the export of 12 million tiger 'grains', converted to an accepted CITES part/derivative code for inclusion in the CITES Trade Database (derivatives). It is simply not possible to equate 12 million 'grains' to a number of live tigers. Data analysis of trade in derivatives therefore should be interpreted with caution; comparisons of volumes in trade may not be valid unless the figures can be put into context. This analysis highlights the importance of using recommended terms and units and the limited use of non-standard codes when determining the relative quantity of specimens of CITES species within trade without sufficiently reliable conversion factors.

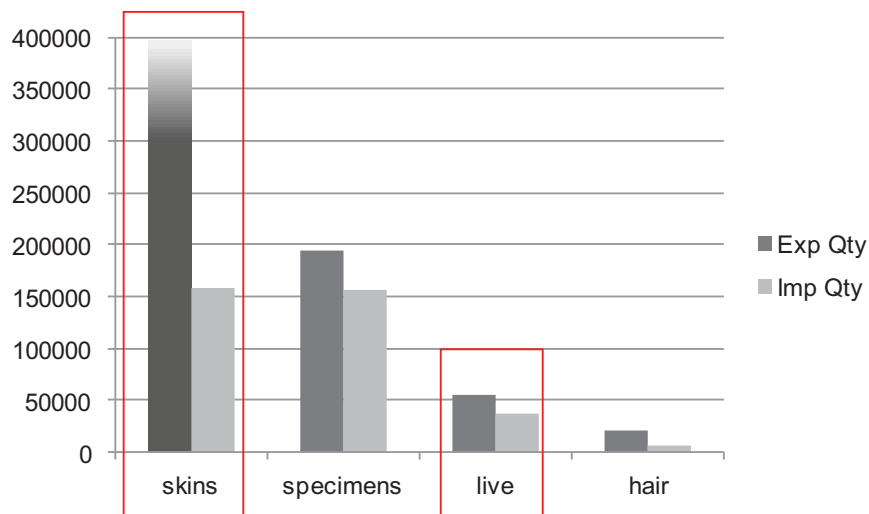


Figure 3.2: Top CITES Appendix I mammal terms in trade 1975-2010, selected on the basis of exporter reported data, as reported by exporters (Exp Qty) and importers (Imp Qty).

Skins

Almost 400 000 Appendix I mammal skins were reported exported over the period 1975-2010 (Figure 3.2). Trade levels rose sharply during the 1980s to a peak in 1987-1988 of almost 65 000 skins. Subsequently, trade (predominantly *Chinchilla* spp.) declined substantially and remained at consistently lower levels of around 500 skins or less exported annually since 1997. Overall, the volume of reported imports was less than 40% of the volume of reported exports, yet in the first few years of the Convention's entry into force (1975-1981), importer data was higher (Figure 3.3). Whilst more than 40% of skins were exported for commercial purposes during 1975-2010, no purpose code was reported for most of the remaining trade; furthermore, 92% of skin exports were reported without a source code specified due to poor reporting in early years (Figure 3.3).

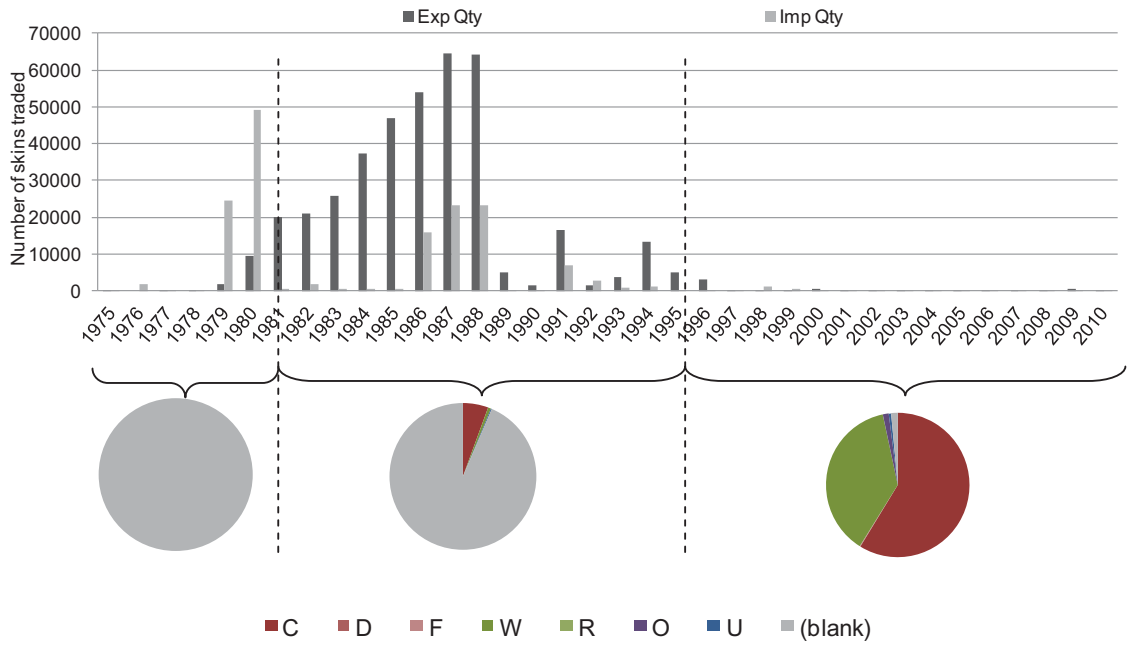

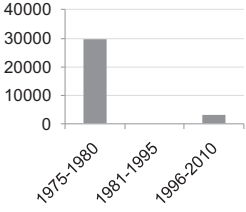

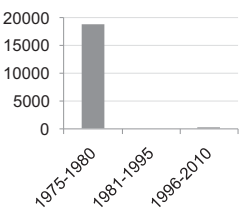

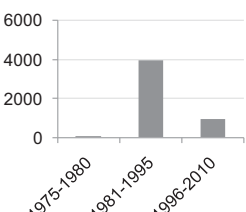


Figure 3.3: Direct exports of Appendix I mammal skins, as reported in number, 1975-2010, with relative proportions of the source of the trade in 1975-1980, 1981-1995 and 1996-2010 as reported by exporters (pie charts).

Over 90% of the trade in Appendix I mammal skins 1975-2010 (reported in number) was represented by the genus *Chinchilla*. This genus was listed in Appendix I on 04/02/77 and the listing excludes specimens of the domesticated form. *Loxodonta africana* (African elephant) and *Panthera pardus* (Leopard) skins represented roughly 4% and 1% of the trade respectively (Table 3.1).

Table 3.1: Key Appendix I mammal taxa traded as skins, as reported by exporters 1975-2010

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) <div style="display: flex; justify-content: space-around; font-size: small;"> ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank) </div>	Trade over time
<i>Chinchilla</i> spp. (Chinchilla)*	336 580 84.7%		

<i>Chinchilla lanigera</i> (Long-tailed Chinchilla) ^{CR} ↓	32 864 8.3%		
<i>Loxodonta africana</i> (African Elephant) ^{VU} ↑	19 014 4.8%		
<i>Panthera pardus</i> (Leopard) ^{NT} ↓	5037 1.3%		

¹ LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct. **Chinchilla chinchilla* ^{CR} ↓; *Chinchilla lanigera* ^{CR} ↓.; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

The main exporters of Appendix I mammal skins over the 36 year period were Canada and Argentina, accounting for 84% and 6% of exports respectively, virtually all of which comprised species of the genus *Chinchilla*. Of the trade reported specifically as wild, Zimbabwe exported the highest number of mammal skins, predominantly involving *Panthera pardus* (701) and *L. africana* (677).

The principal importers of Appendix I mammal skins were the U.S. (135 365), Hong Kong, Special Administrative Region of China (hereafter referred to as Hong Kong, SAR) (107 381) and Switzerland (55 296), as reported by exporters.

Live mammals

Over 56 000 live Appendix I mammals were reported exported over the period 1975-2010. According to exporters, trade peaked in 1984-1989, reaching almost 10 000 individuals in 1985. Importer data suggests that trade was highest in 1980; with almost 5000 live mammals imported (Figure 3.4). From 1990, trade levels averaged fewer than 1000 live mammals per annum and the consistency of reporting between trading partners improved considerably. A total of 224 mammal taxa were reported exported as live animals 1975-2010, yet 73% of exports of live Appendix I mammals was accounted for by ten taxa (Table 3.2).

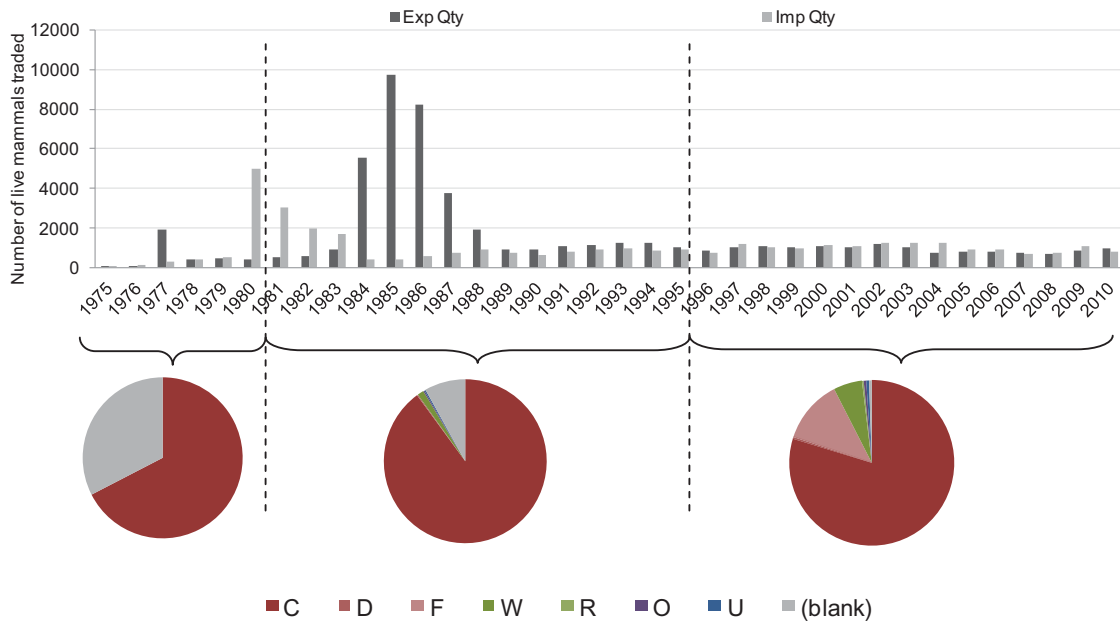

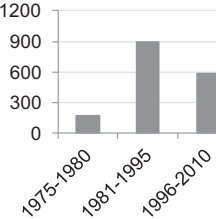

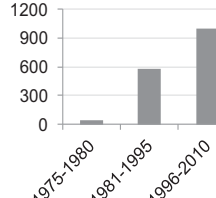

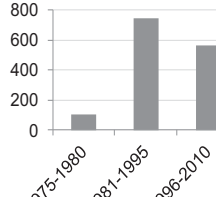

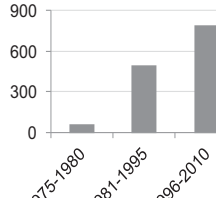

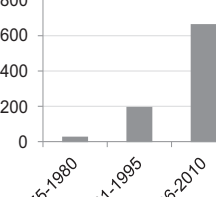

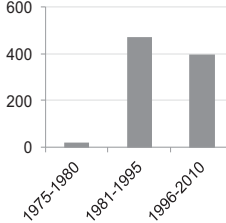

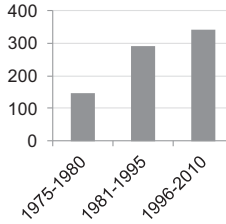

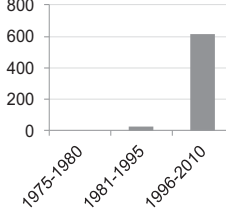


Figure 3.4: Direct exports of Appendix I live mammals, as reported in number, 1975-2010, with relative proportions of the source of the trade in 1975-1980, 1981-1995 and 1996-2010 as reported by exporters (pie charts).

Table 3.2: Key Appendix I live mammal taxa, as reported by exporters 1975-2010.

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species)	Trade over time
Chinchilla spp. (Chinchilla)*	26 840 47.9%		
<i>Panthera tigris</i> (Tiger) ^{EN} ↓	5099 9.1%		

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) <div style="display: flex; justify-content: space-around; font-size: small;"> ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank) </div>	Trade over time
<i>Panthera pardus</i> (Leopard) ^{NT} ↓	1673 3%		
<i>Acinonyx jubatus</i> (Cheetah) ^{VU} ↓	1618 2.9%		
<i>Pan troglodytes</i> (Chimpanzee) ^{EN} ↓	1416 2.5%		
<i>Lemur catta</i> (Ring-tailed Lemur) ^{NT} ↓	1352 2.4%		
<i>Oryx leucoryx</i> (Arabian Oryx) ^{VU} →	893 1.6%		

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) <div style="display: flex; justify-content: space-around; font-size: small;"> ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank) </div>	Trade over time
<i>Saguinus oedipus</i> (Cotton-top Tamarin) ^{CR} ↓	886 1.6%		
<i>Elephas maximus</i> (Indian Elephant) ^{EN} ↓	780 1.4%		
<i>Mustela nigripes</i> (Black-footed Ferret) ^{EN} ↑	644 1.1%		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct ; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

* *Chinchilla chinchilla* ^{CR} ↓; *Chinchilla lanigera* ^{CR} ↓.

The main exporters of live mammals, accounting for 67% of the trade, were Austria (17 914), Canada (8544), U.S. (5406), Germany (3890) and South Africa (2047). The majority of exports from these countries were of captive-bred specimens. Of the trade reported specifically as wild, South Africa exported the highest number of live Appendix I mammals, predominantly involving *Diceros bicornis* (Black Rhino) (74), *Ceratotherium simum* (White Rhino) (41) and *Loxodonta africana* (African Elephant) (38).

The top importers, accounting for 58% of the trade, were Italy (12 072), France (9902), the U.S. (5853), Japan (2682) and Canada (2091), as reported by the exporters.

Meat

Meat was the major commodity of Appendix I mammals traded in weight. Exports of 143 994 kg were reported 1975-2010, although importers reported a corresponding total trade of 949 kg. All meat exported was of wild origin, and this trade took place relatively

recently; from 1999 onwards, with a notable peak in exports in 2008 (86 600 kg). The majority of the trade was reported for commercial purposes. Trade was predominantly in *Balaenoptera physalus* (Fin Whale) (80 001 kg) and *B. acutorostrata* (Common Minke Whale) (63 993 kg) meat. Both species are subject to reservations. The main exporters of whale meat were Iceland (81 500 kg) and Norway (62 493), with the top importers being Japan (85 600 kg), Iceland (43 373 kg) and the Faeroe Islands (15 020 kg), as reported by the exporters.

Box 3.2: Hunting trophies

Thirty-two wild-sourced Appendix I taxa were reported exported as 'trophies' during 1975-2010. Trade reported by exporters or importers exceeded 100 trophies for only five taxa; *Panthera pardus* (Leopard), *Loxodonta africana* (African elephant), *Acinonyx jubatus* (Cheetah) and *Oryx dammah* (Scimitar-horned Oryx). Hunting trophies for *P. pardus* and *A. jubatus* are further considered in section 6.3 under "Control of CoP-approved quotas".

Trade in a number of Appendix I populations of *Loxodonta africana* was considered at the 59th meeting of the European Union Scientific Review Group (January 2012). According to available trade data, quotas for tusks as hunting trophies established by Cameroon (160) and the United Republic of Tanzania (100-400) for the years 2001-2010 appeared to have been complied with.

There were only three Appendix I taxa exported as hunting trophies in numbers greater than 20 which were not subject to an export quota for wild specimens; *Ceratotherium simum* (White Rhino) (including *C. s. simum*), *Pan troglodytes* and *O. dammah*.

Trade in *C. simum* and *C. s. simum* trophies totalled 50 reported exports and 366 reported imports, with the majority of these specimens originating in South Africa (50% and 82% as reported by exporters and importers). The South African population was transferred to Appendix II for the purposes of allowing trade in live animals and hunting trophies on 16/02/95; some of this trade was likely to be reported inaccurately as Appendix I. The remainder of the trophies originated in Namibia and Zimbabwe.

All trade in *O. dammah* was reported from non-range States, where populations may have been introduced.

3.2 Birds

There are currently 156 species (including two populations) and 11 subspecies of birds listed in Appendix I. Whilst 50 families are represented, there are two families with a substantially higher number of species listed; Psittacidae (Amazons, macaws, parakeets and parrots) and Phasianidae (grouse, guineafowl, partridges, pheasants, tragopans).

The overall number of Appendix I birds has gradually increased from 88 species when the Convention came into force, with net additions at every CoP except CoP15 (Figure 3.5).

3.2.1 Direct trade

Over the 36 years 1975-2010, CITES Appendix I birds were mainly traded as live individuals and for their feathers (Figure 3.6). Trade levels were very low in the years after the Convention came into force (1975-1980), with trade focussing on live birds and eggs. The years that followed (1981-1995) saw an increase in trade in live birds, specimens, eggs and bodies, which, for live birds and specimens, continued in more recent years (1996-2010), with feathers being also traded at high volumes.

The following sections focus on the analysis of the main trade terms for CITES Appendix I birds: feathers and live birds.

Live

Trade in live birds has increased gradually over time, and while initially many birds were traded without a source specified, more than 89% of birds were reported as captive bred in the interim period. Recent trade (1996-2010) was dominated by birds reported as born in captivity, bred in captivity or bred for commercial purposes at a CITES registered operation (sources F, C, and D).

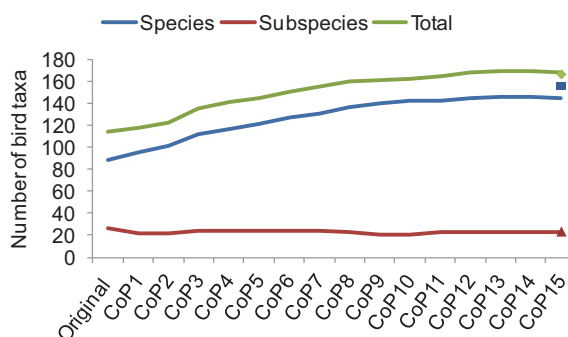


Figure 3.5: Cumulative listings of Appendix I bird taxa, as determined by accepted CoP proposals. Data points indicate the number of current listings considering changes in standard nomenclature.

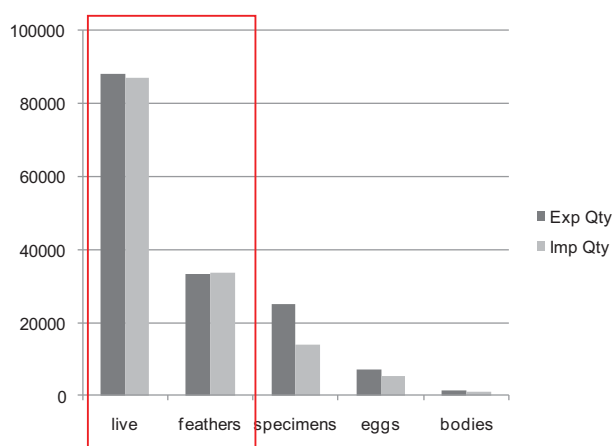


Figure 3.6: Top five CITES Appendix I bird terms in trade 1975-2010, selected on the basis of exporter reported data, as reported by exporters (Exp Qty) and importers (Imp Qty).

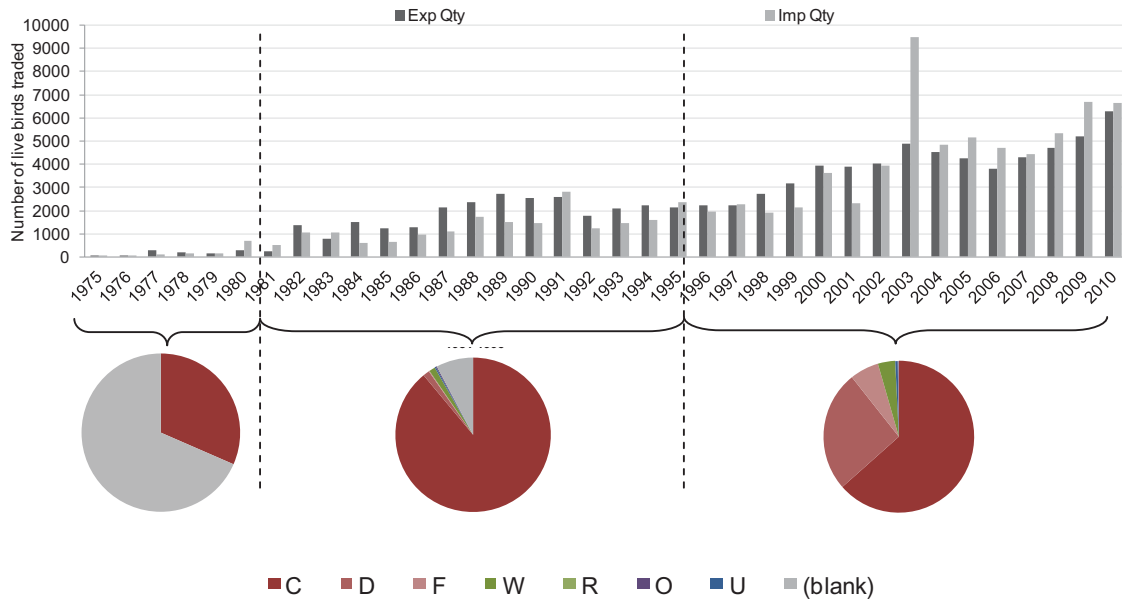


Figure 3.7: Trade in live CITES Appendix I birds over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty) and the corresponding source for the three time periods 1976-1980, 1981-1995 and 1996-2010, as reported by exporters.

Exporters reported trade in live birds from 148 Appendix I species 1975-2010, mainly involving the families Falconidae (33 122; 38%), Psittacidae (20 791; 35%) and Phasianidae (10 319; 12%). The five species that were most highly traded, as reported by exporters, are included in Table 3.3. These species represented 61% of the trade.

Table 3.3: Key Appendix I bird taxa traded live, as reported by exporters 1975-2010.

Taxon with IUCN Red List category ¹ and population trend ²	Number exported and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank)	Trade over time
<i>Cyanoramphus novaezelandiae</i> (New Zealand Parakeet) ^{VU} ↓	19 906 22.6%		
<i>Falco hybrid</i> (Falcon hybrid)	17 854 20.3%		

<i>Falco rusticolus</i> (including subspecies) (Gyr Falcon) ^{LC} →	8710 9.9%		
<i>Falco peregrinus</i> (Peregrine Falcon) ^{LC} →	4648 5.3%		
<i>Ara macao</i> (Scarlet Macaw) ^{LC} ↓	2647 3.0%		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, □ → stable, ↑ increasing, ? unclear

Live birds were mainly exported from Europe (70% of exports) and imported into Asian countries (55%). The main exporters were Germany (13%), the Netherlands (13%) and Belgium (12%), with the United Arab Emirates importing 27% of live birds in trade 1975-2010, followed by the U.S. with 7% (Figure 3.8). The main five exporters (all European) mainly traded species that were non-native (Table 3.4).

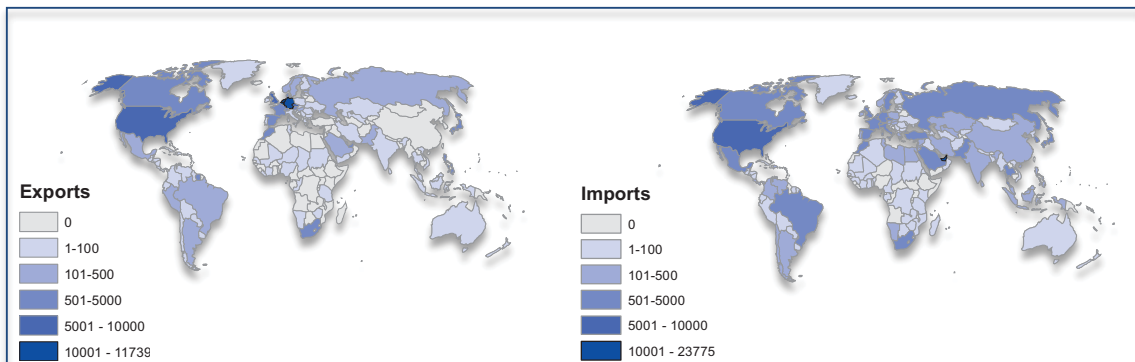


Figure 3.8: Top exporting and importing countries of Appendix I live birds, 1975-2010.

Table 3.4: Main exporters of live birds and the percentage of key species traded naturally occurring within the exporting Party.

Party	Total number of live birds exported 1975-2010	No of species directly exported at quantities of >50 individuals (excludes hybrids)	No. of species traded at >50 native to the exporter (includes breeding populations and vagrants)
Germany	11739	10	3
Netherlands	11622	20	2
Belgium	10312	12	0
United Kingdom	8343	15	2
Czech Republic	7006	7	2

Box 3.3: Spotlight on trade in Appendix I birds

The Secretariat has previously expressed concern about the number of Appendix I birds bred in captivity for commercial purposes by operations not registered with the Secretariat (Doc. 10.28 (Rev.)). During 1975-2010, 38 366 Appendix I birds declared as captive-bred were directly exported for commercial purposes. Almost half of these exports (45%) comprised one species; *Cyanoramphus novaezelandiae* (New Zealand Parakeet). The species is native only to New Zealand, and is reportedly extinct in Australia. *C. novaezelandiae* was once extremely abundant on the mainland but is currently known only from a few isolated island locations where populations are declining (BirdLife International, 2012). The Secretariat's register of operations that breed Appendix I species for commercial purposes (see Resolution 12.10 (Rev. CoP15)) does not include any breeders of this species.

C. novaezelandiae was originally listed in both Appendices I and II in 1975 erroneously, and later listed only in Appendix I on 04/02/77. All trade in *C. novaezelandiae* has been reported by non-range States, so benefits from captive breeding of this species have not been retained in New Zealand. Over 90% of specimens in international trade during 1975-2010 were exported from three European countries, with exports declared as captive-bred starting in 1984 and reaching over 1000 specimens per year in 2002. New Zealand has not reported exporting any live specimens of this species since accession to the Convention in 1976. The monetary value of captive bred commercial exports of *C. novaezelandiae* from non-range States in the five years 2006-2010 was estimated at USD198 122, with almost USD80 000 generated in 2010, reflecting higher trade volumes in that year.

Similarly for other Appendix I bird species, where trade can be more lucrative, the main exporters of live, captive-bred birds are non-range States. *Cacatua moluccensis* (Moluccan Cockatoo) is endemic to Indonesia and was first listed in Appendix II in 1981 and later transferred to Appendix I in 1990. Whilst the majority of live Appendix II trade comprised wild exports from Indonesia, Appendix I trade totalling 660 captive-bred individuals was reported as exports from 11 non-range State Parties, primarily Singapore (46%), South Africa (22%) and the Philippines (18%), Singapore is the only Party to have registered a breeder for the species. Available individual price records for U.S. imports/exports in 2007 and 2008 indicate that this species was traded in excess of USD1500 per specimen (USD1500-2700).

Likewise, Appendix II trade in live specimens of the South American *Amazona auropalliata* (Yellow-naped Amazon) was predominantly reported by Nicaragua, yet following the species listing in Appendix I in 2003, the trade shifted geographically, primarily to South Africa and the Philippines, with exports comprising captive-bred specimens. U.S. import/export price records indicate that specimens of *A. auropalliata* were traded for USD500-800 during 2007-2010.

Resolution 13.9 urges Parties with *ex-situ* breeding operations that breed Appendix I species to seek cooperative measures that would support *in-situ* conservation based on the resources generated by those operations. Additional support could consist of contributions of funds, exchange of specimens for re-introduction to the wild, capacity building and training, investment and other measures.

Feathers

Trade in feathers began in the 1980s and peaked in 2006-2007 (Figure 3.9). Feathers were mainly wild-sourced from 1980-1995, with more than a quarter of trade reported without a source specified. In more recent years, feathers still appeared to be mainly of wild origin.

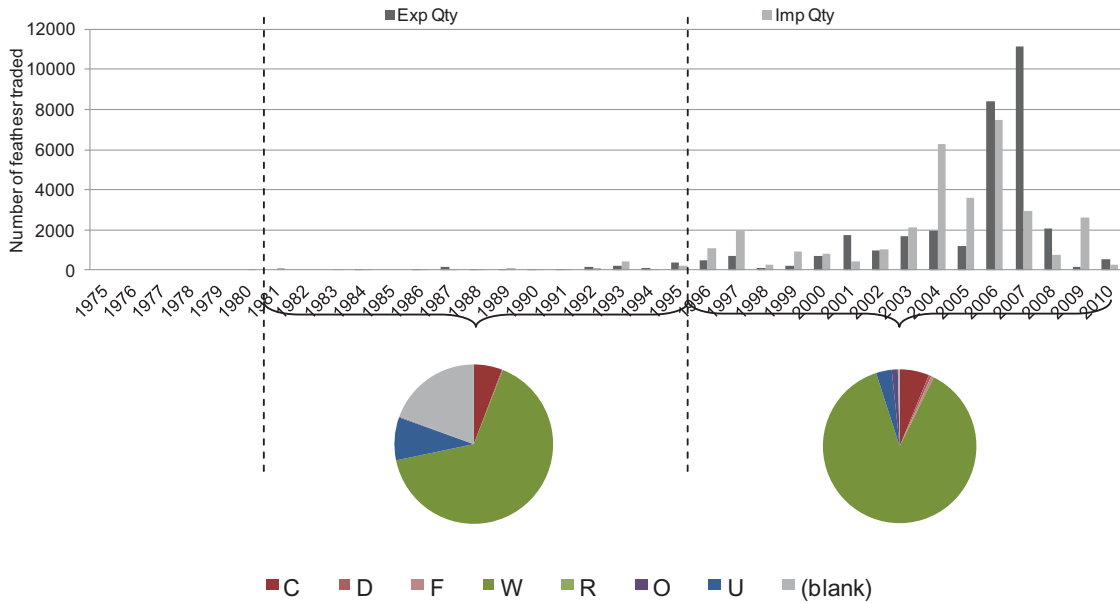

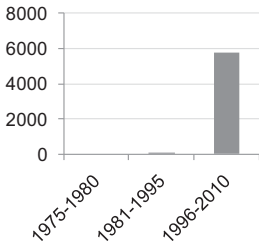

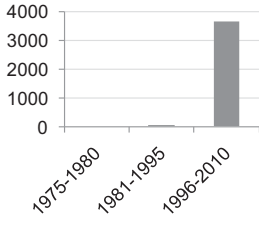

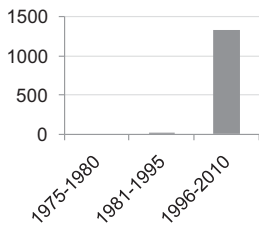

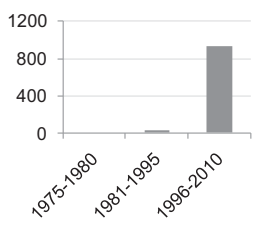


Figure 3.9: Trade in Appendix I bird feathers over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty). The proportion of sources represented in trade is summarized for 1976-1980, 1981-1995 and 1996-2010.

Feathers of 73 Appendix I species were traded 1975-2010, mainly involving the families Accipitridae (22 017; 66%), Psittacidae (6052; 18%) and Falconidae (1933; 6%). The five species that were most highly traded, representing 80% of trade as reported by exporters, are included in Table 3.5.

Table 3.5: Key species traded for their feathers from 1975-2010, as reported by exporters.

Species with IUCN Red List category ¹ and population trend ²	Number exported and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank)	Trade over time
<i>Aquila heliaca</i> (Eastern Imperial Eagle) ^{VU} ↓	14 767 44.5%		

<p><i>Haliaeetus albicilla</i> (White-tailed Eagle) ^{LC} ↑</p>	<p>5783 17.4%</p>		
<p><i>Ara macao</i> (Scarlet Macaw) ^{LC} ↓</p>	<p>3728 11.2%</p>		
<p><i>Haliaeetus leucocephalus</i> (Bald Eagle) ^{LC} ↑</p>	<p>1343 4.0%</p>		
<p><i>Falco rusticolus</i> (Gyr Falcon) ^{LC} →</p>	<p>959 2.8%</p>		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct ; ² ↓ decreasing, → stable, ↑ increasing, ? Unclear

The main exporter of feathers was Kazakhstan (predominantly *Aquila heliaca*), accounting for 57% of direct trade, with the U.S. being the main importer, accounting for 76% of imports in 1975-2010.

3.3 Reptiles

There are currently 76 reptile species (including one population) listed in Appendix I, in addition to five subspecies. There are almost twice as many species belonging to the family Iguanidae (iguanas) listed in Appendix I as those belonging to any other reptile family. Other predominant families include Testudinidae (tortoises), Crocodylidae (alligators, caimans and crocodiles) and Boidae (boas).

There were notable increases in the number of reptile taxa included in Appendix I following CoPs 1 and 3, with many individual species listings and all Chelonidae spp. included at CoP3 in 1981. The number of reptile taxa overall has remained relatively stable since then; very gradually increasing from 68 species and five subspecies at CoP3 to the current figure of 76 species and five subspecies (Figure 3.10).

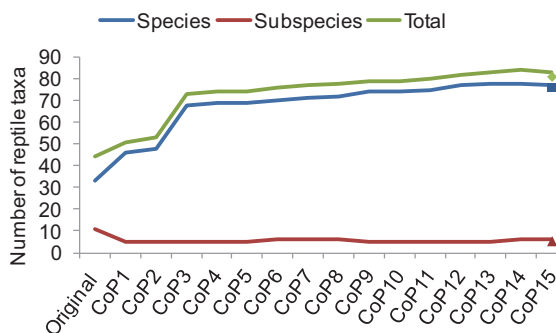


Figure 3.10: Cumulative listing of Appendix I reptile taxa, as determined by accepted CoP proposals. Data points indicate the number of current listings considering changes in standard nomenclature.

3.3.1 Direct trade

Many different Appendix I reptile terms (45 in total) were traded over the 36 years 1975-

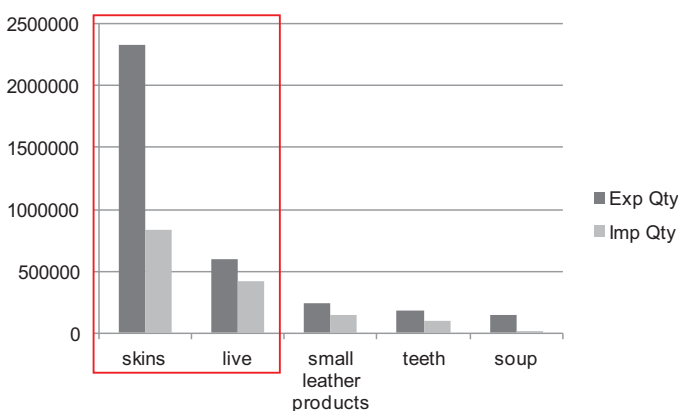


Figure 3.11: Top five CITES Appendix I reptile terms in trade 1975-2010, selected on the basis of exporter reported data, as reported by exporters (Exp Qty) and importers (Imp Qty).

2010, ranging from live animals to parts, including skins, teeth, carapaces, bodies and tails, as well as derivatives including meat, leather products, oil, powder, and carvings. The main trade in Appendix I reptiles was in skins and live animals (Figure 3.11), with almost two million kg of meat also reported exported. This analysis focuses on these three trade terms. There was a significant peak in Appendix I reptile trade during 1983-1985, mainly due to trade in skins.

Skins

Over 2.3 million Appendix I reptile skins were reported exported during 1975-2010, with the majority of trade initially and in the interim period reported without a source code. However, improved reporting was apparent for recent years (1996-2010), with the vast majority of trade in source code D (specimens that originate from operations registered by the Secretariat in accordance with Resolution Conf. 12.10 (Rev. CoP15)) skins (95%), and less than 1% of exports reported without source (Figure 3.12). Importer reported data suggests

that overall trade levels were substantially lower, with a total of 833 054 skins reported imported.

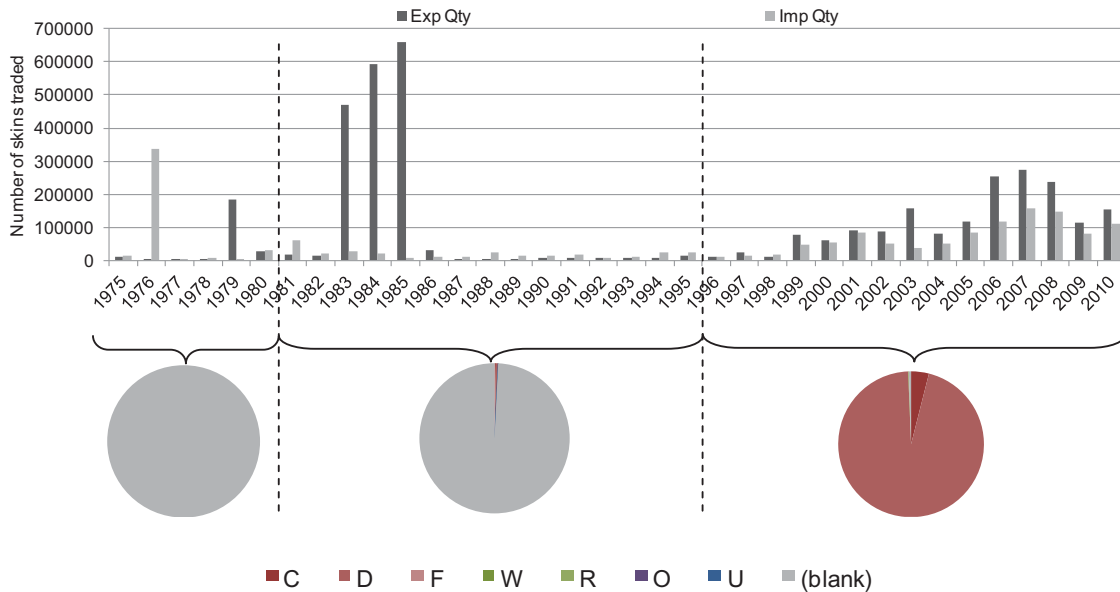



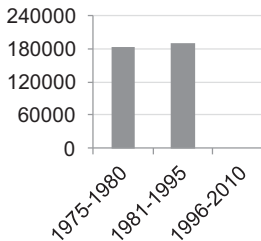

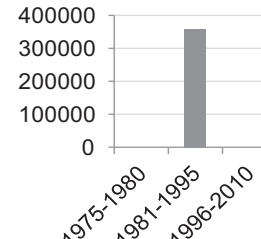

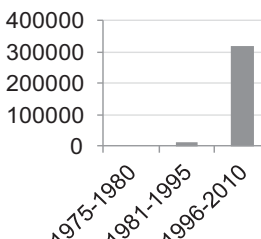
Figure 3.12: Trade in CITES Appendix I skins over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty) and the corresponding source for the three time periods 1976-1980, 1981-1995 and 1996-2010, as reported by exporters.

There was a clear peak in trade in Appendix I reptile skins during 1983-1985, predominantly involving *Varanus bengalensis* and *V. flavescens*. Trade subsequently resumed at comparatively lower levels and then gradually increased again in the 2000s (Figure 3.12). A large proportion of exports (89%) were of commercial in nature.

Four reptile taxa represented 95% of all trade in Appendix I reptile skins in 1975-2010 according to exporter data, with 80% of trade in the genus *Varanus* (Table 3.6). There was negligible trade in wild-sourced skins of these taxa (one skin only).

Table 3.6: Key Appendix I reptile taxa traded as skins, as reported by exporters 1975-2010.

Taxon with IUCN Red List category ¹ and population trend ²	Number exported and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank)	Trade over time
<i>Varanus bengalensis</i> (Common Indian Monitor) ^{LC↓}	1 150 463 49.4%		

Taxon with IUCN Red List category ¹ and population trend ²	Number exported and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank)	Trade over time
<i>Varanus spp.</i> (Monitor Lizards) ¹ EN, 2 VU, 1 NT, 13 LC, 3 DD (20 species assessed)*	374 762 16.1%		
<i>Varanus flavescens</i> (Calcutta Oval-grain Lizard) ^{LC} (needs updating)	355 720 15.3%		
<i>Crocodylus siamensis</i> (Siamese Crocodile) ^{CR} ↓	331 943 14.3%		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct, DD Data Deficient.; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

* *Varanus bengalensis* ^{LC}↓; *Varanus boehmei* ^{DD}?; *Varanus cumingi* ^{LC}↓; *Varanus exanthematicus* ^{LC}?; *Varanus finschi* ^{LC}?; *Varanus flavescens* ^{LC} Needs updating; *Varanus glauerti* ^{LC}?; *Varanus indicus* ^{LC}?; *Varanus jobiensis* ^{LC}?; *Varanus komodoensis* ^{VU} Needs updating; *Varanus mabitang* ^{EN} ↓; *Varanus marmoratus* ^{LC}→; *Varanus nuchalis* ^{NT}↓; *Varanus olivaceus* ^{VU}↓; *Varanus primordius* ^{LC}?; *Varanus rosenbergi* ^{LC}?; *Varanus salvator* ^{LC}?; *Varanus scalaris* ^{LC}?; *Varanus telonesetes* ^{DD}?; *Varanus yemenensis* ^{DD}?

The main exporters of Appendix I reptile skins, accounting for 92% of the trade, were Bangladesh (1 646 637), Thailand (321 385) and Pakistan (183 240), as reported by exporters (Figure 3.13). Whilst *C. siamensis* was the main species exported from Thailand, species of *Varanus* spp. were predominantly exported from Bangladesh and Pakistan. Exports of Appendix I reptile skins were reported to involve 76 destinations, the principal importers being Japan (2 074 443), Singapore (72 437), France (62 121), Italy (30 074) and

the Republic of Korea (26 166), together accounting for 97% of the trade, as reported by exporters.

Discrepancies between figures reported by exporters and importers were evident in the early years of the Convention. After its accession to CITES in 1980, Japan did not report any imports of reptile skins from Bangladesh in 1983-1985, despite reported exports to Japan of over 1.6 million skins.

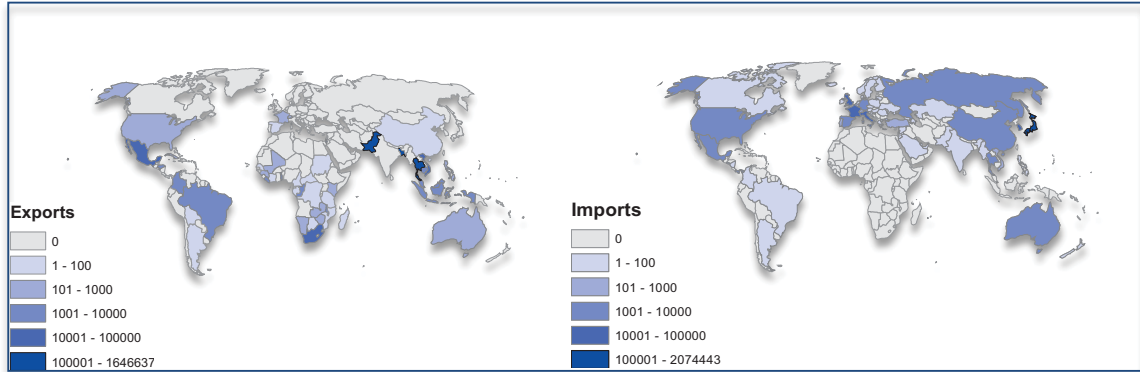


Figure 3.13: Top exporting and importing countries of Appendix I reptile skins, 1975-2010.

Live

More than half a million (591 619) live Appendix I reptiles were reported exported during 1975-2010, mainly in recent years, with exports rising sharply in 1999 and again in 2006 (Figure 3.14). The source was not specified for a high proportion of reptiles in the early years of the Convention. Over 90% of live reptiles in recent trade (1996-2010) originated from CITES registered breeders. The majority (90%) of exports were for commercial purposes. Importers reported quantities 30% lower, totalling 409 863 live specimens.

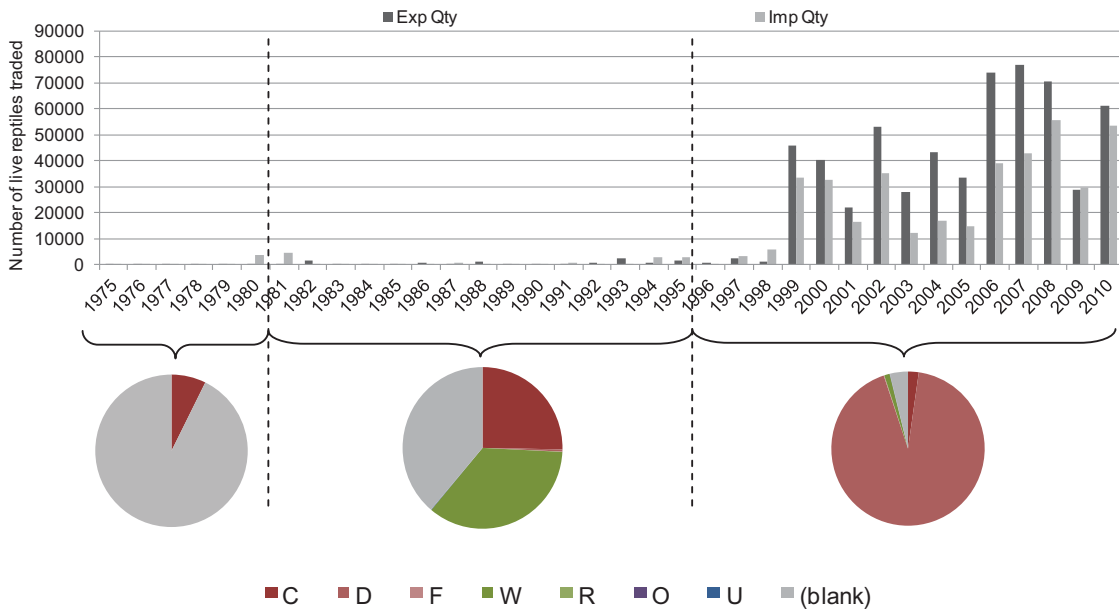

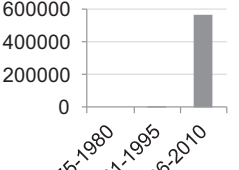

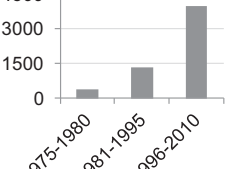

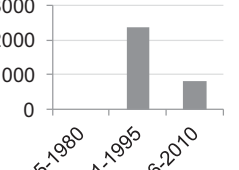

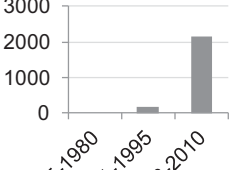

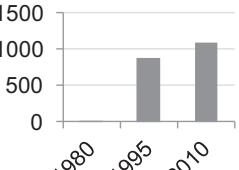


Figure 3.14: Trade in live CITES Appendix I reptiles over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty) and the corresponding source for the three time periods 1976-1980, 1981-1995 and 1996-2010, as reported by exporters.

Crocodylus siamensis (Siamese Crocodile) accounted for 96% of all trade in live Appendix I reptiles. Two species of sea turtle and two other crocodile species also appeared in the top five species exported (Table 3.7), yet each of these species represented less than 1% of the overall trade volume.

Table 3.7: Key Appendix I reptile taxa traded as live, as reported by exporters 1975-2010.

Taxon with IUCN Red List category ¹ and population trend ²	Number exported and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blar)	Trade over time
<i>Crocodylus siamensis</i> (Siamese Crocodile) CR ↓	568 733 96.1%		
<i>Chelonia mydas</i> (Green Turtle) ^{EN} ↓	5702 0.9%		
<i>Lepidochelys kempii</i> (Kemp's Ridley) ^{CR} (needs updating)	3211 0.5%		
<i>Crocodylus porosus</i> (Salt-water Crocodile) ^{LC} (needs updating)	2329 0.4%		
<i>Crocodylus niloticus</i> (Nile Crocodile) ^{LC} (needs updating)	1966 0.3%		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct, DD Data Deficient.; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

The main exporters of live Appendix I reptiles, accounting for 96% of the trade, were Thailand (380 595), Viet Nam (120 487) and Cambodia (69 035). *C. siamensis* was the principal species exported from Thailand, and the only live Appendix I reptile traded from Viet Nam and Cambodia (Figure 3.22). All of these countries have CITES registered breeders for the species. According to exporter data, the key trading partner was China, accounting for 88% of all imports.

Meat

Appendix I reptiles were also traded in substantial quantities by weight, with the major commodity being meat. A total of 1.96 million kg of meat was exported 1975-2010, with importers reporting a slightly lower quantity of 1.48 million kg. Whilst some trade was evident in the early years following the Convention's entry into force, exports were most prevalent in the mid to late 2000s (Figure 3.16). The source of meat in trade was largely unspecified until recent years 1996-2010), with virtually all later trade originating from CITES registered breeders (source D) (Figure 3.15).

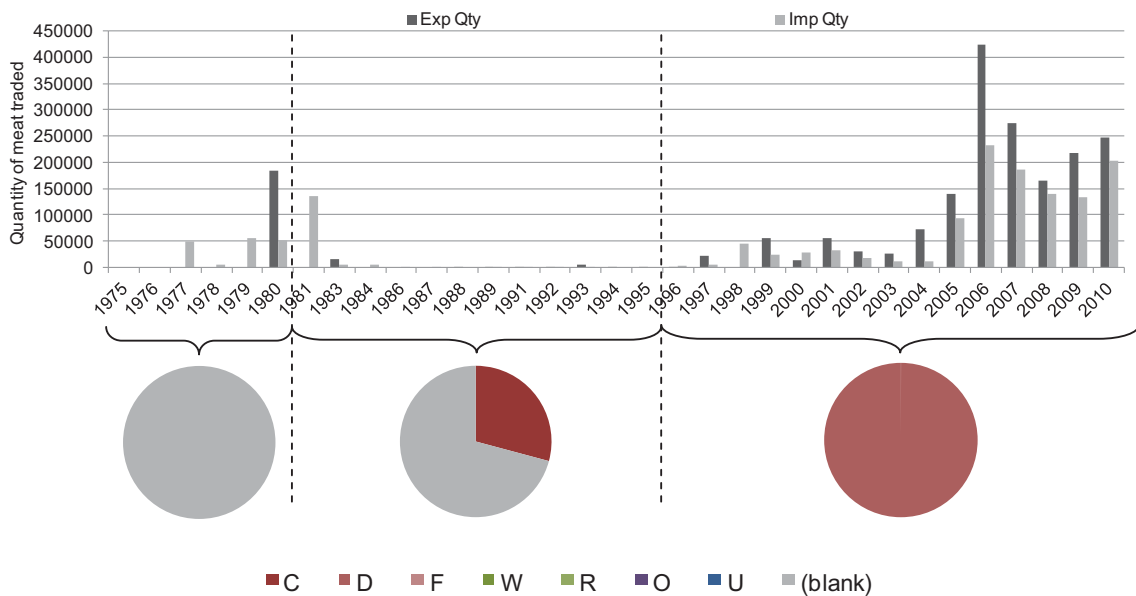


Figure 3.15: Trade in CITES Appendix I reptile meat over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty) and the corresponding source for the three time periods 1976-1980, 1981-1995 and 1996-2010, as reported by exporters.

Mirroring the trend in live reptile trade, *C. siamensis* was the major Appendix I species exported for meat, accounting for 89% of the trade (1 734 731 kg; all source D). *Chelonia mydas* (Green Turtle) was the only other species to be traded in notable quantities for meat (in 1980 and 1983), although the source of the 198 573 kg reported exported was not specified.

As with live reptiles, Thailand was the principal exporter, accounting for 87% of meat exports, mostly comprising *C. siamensis*. The Cayman Islands, an Overseas Territory of the

United Kingdom, was the other key exporter, accounting for all of the *C. mydas* exports. The principal importers of reptile meat were Hong Kong, SAR (1 163 343 kg), China (442 558 kg) and Germany (212 793 kg).

3.4 Amphibians

Currently, there 17 species of amphibians listed in CITES Appendix I, with the family Bufonidae comprising the majority of those. Amphibians currently represent only around 3% of animals listed in Appendix I.

The number of amphibian taxa included in Appendix I has remained relatively constant over the 36 years analyzed, since the inclusion of the initial 16 species and three subspecies (Figure 3.16).

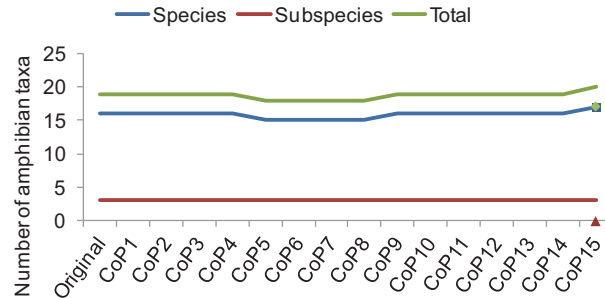


Figure 3.16: Cumulative listings of Appendix I amphibian taxa as determined by accepted CoP proposals. Data points indicate the number of current listings considering changes in standard nomenclature.

3.4.1 Direct trade

Appendix I amphibians were mainly traded live, as specimens and bodies over the years 1975-2010, with very low levels of trade in other terms (Figure 3.17). This analysis focuses on direct exports of the main trade term for Appendix I amphibians: live.

Live

Trade in live CITES Appendix I amphibians fluctuated substantially over time, with peaks in the mid 1980s and early 2000s, and an apparent recent increase. While initially the source was generally not specified, in 1995-2010 the majority of live amphibians were reported to originate from captive sources (Figure 3.18). Live Appendix I amphibians were primarily traded for zoological purposes.

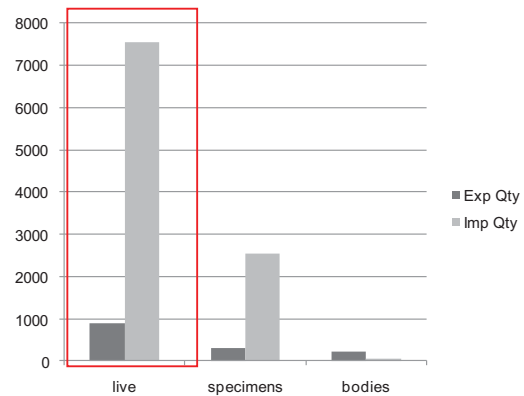


Figure 3.17: Top three CITES Appendix I amphibian terms in trade 1975-2010, selected on the basis of exporter reported data, as reported by exporters (Exp Qty) and importers (Imp Qty).

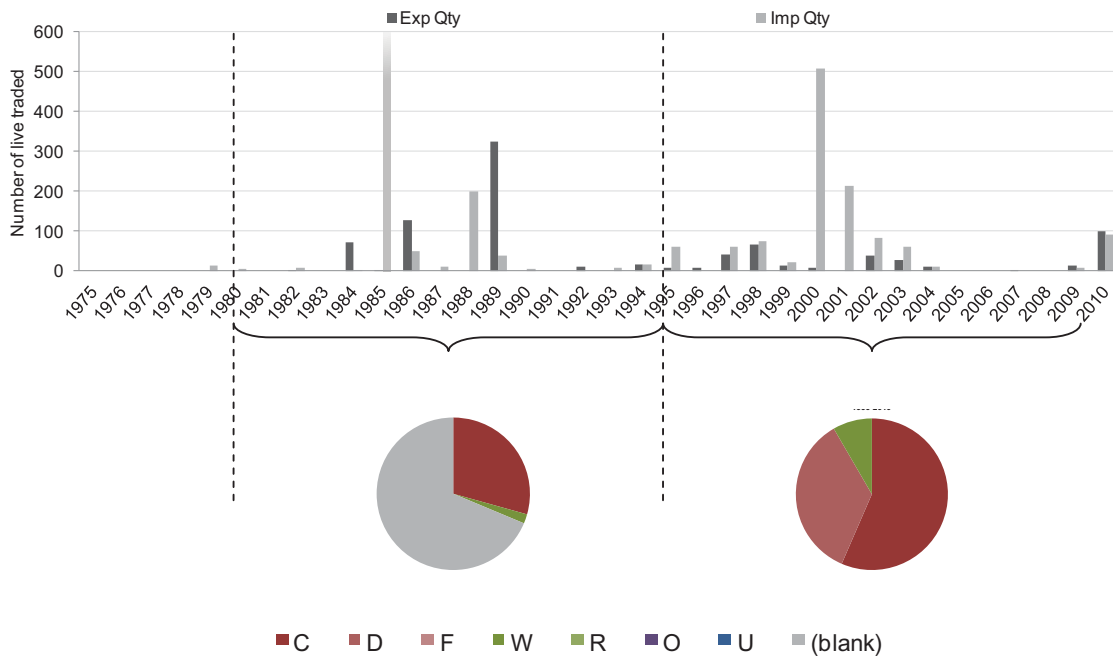


Figure 3.18: Trade in live CITES Appendix I amphibians 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty) and the corresponding source for the three time periods 1976-1980, 1981-1995 and 1996-2010, as reported by exporters.

Seven Appendix I amphibian species and two genera were traded in 1975-2010, involving the families Microhylidae (521; 59%), Cryptobranchidae (240; 27%) and Bufonidae (120; 14%). The five taxa which were most highly traded as live amphibians, as reported by exporters, are included in Table 3.8; these species represented 100% of the trade. There are significant differences between exporter and importer reported figures.

Table 3.8: Key taxa traded as live amphibians from 1975-2010, as reported by exporters.

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank)	Trade over time
<i>Dyscophus antongilii</i> (Tomato Frog) ^{NT ?}	521 59%		

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) C D F W R O U (blank)	Trade over time
<i>Andrias japonicus</i> (Japanese Giant Salamander) ^{NT} ↓	152 17%		
<i>Nectophrynoides asperginis</i> (Kihansi Spray Toad) ^{EW}	100 11%		
<i>Andrias davidianus</i> (Chinese Giant Salamander) ^{CR} ↓	88 10%		
<i>Atelopus zeteki</i> (Golden Arrow Poison Frog) ^{CR} ↓	20 2%		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

The Russian Federation (former Soviet Union) (*Dyscophus antongilii* only), Japan (*Andrias japonicus* only) and the U.S. (mainly *Nectophrynoides asperginis*) were the main exporters. The main importers were Hungary, Tanzania and Switzerland (Figure 3.19).

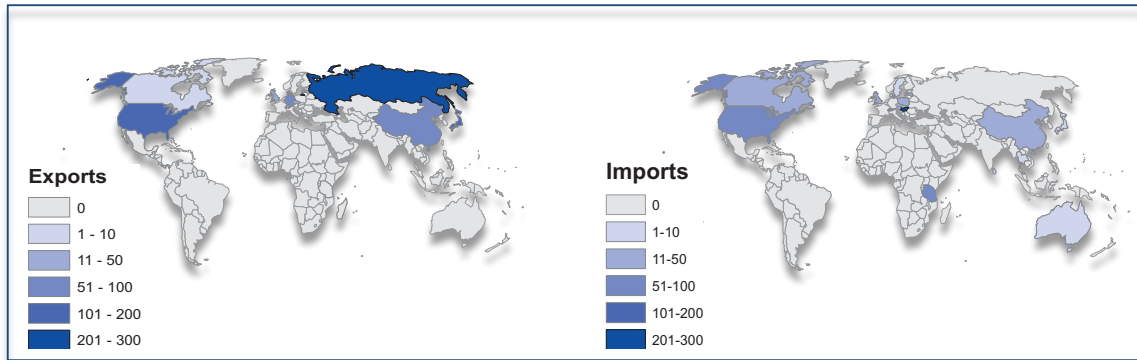


Figure 3.19: Top exporting and importing countries of Appendix I live amphibians, 1975-2010.

3.5 Fish

There are currently only 15 species of fish included in CITES Appendix I. These include six species of family Pristidae (sawfishes), two each of the families Acipenseridae (sturgeon) and Latimeriidae (Coelacanth), and a single species representative for a further five families each. When the Convention came into force in 1975 there were seven fish species and one subspecies included in Appendix I. At each meeting until CoP14 when Pristidae spp. were listed, the net increase in fish species included in Appendix I was only one or two species (Figure 3.20).

3.5.1 Direct trade

Fish listed in Appendix I were predominantly traded as live animals over the 36 years 1975-2010 (Figure 3.21). However, trade in 25 000 live eggs (source F) was only reported by importers.

Live

A total of 889 585 live fish were reported as direct exports during 1975-2010. Trade levels were low in the early years following the entry into force of the Convention, with typically no trade or just a few hundred live fish traded annually, as reported by exporters. Trade suddenly increased in 1995, when over 16 000 live fish were reported exported, and over 13 000 reported imported. From that point onwards trade generally increased over the following 15 years and approached 10 000 individuals reported exported during two peaks in trade in 2003 and 2009 (Figure 3.22).

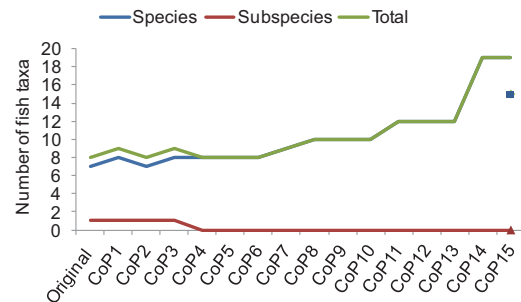


Figure 3.20: Cumulative listings of Appendix I fish taxa, as determined by accepted CoP proposals. Data points indicate the number of current listings considering changes in standard nomenclature.

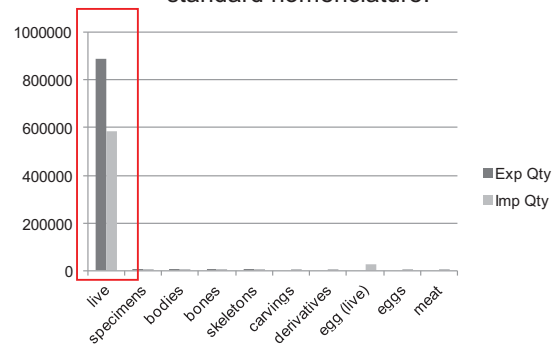


Figure 3.21: CITES Appendix I fish terms in trade 1975-2010, selected on the basis of exporter reported data, as reported by exporters (Exp Qty) and importers (Imp Qty).

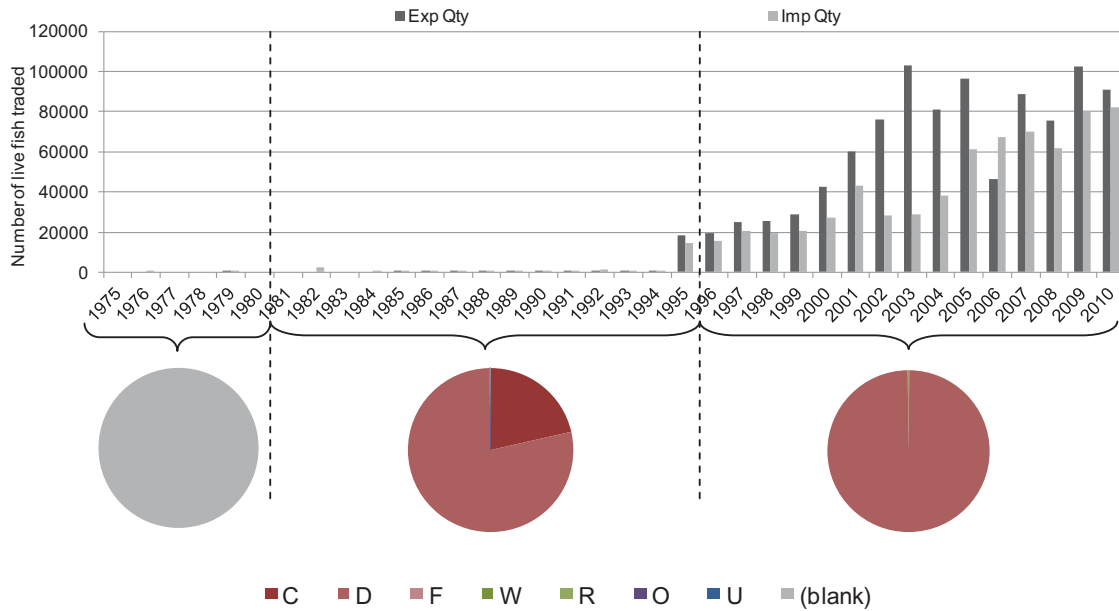



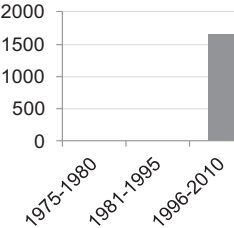

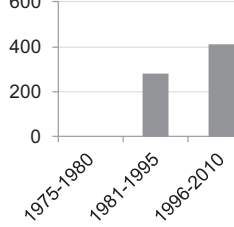

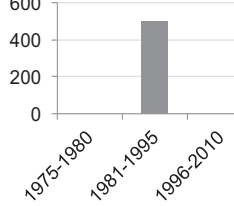

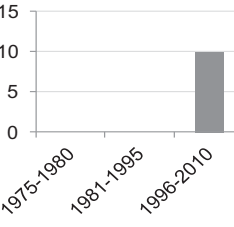
Figure 3.22: Direct exports of live Appendix I fish 1975-2010, with relative proportions of the source of the trade in 1975-1980, 1981-1995 and 1996-2010 (pie charts).

Over 99% of all live fish exported were traded under source code D, meaning that all (or the majority) of specimens originated from a breeder registered under Resolution Conf. 10.16 (Rev.) Over 99% of live fish were exported for commercial purposes.

Only seven taxa were exported as live fish, with virtually all trade being in a single species: *Scleropages formosus* (Table 3.9).

Table 3.9: Key Appendix I fish species traded as live, as reported by exporters 1975-2010.

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species)	Trade over time
<i>Scleropages formosus</i> (Golden Dragon Fish) ^{EN} ↓	886 725 99.7%		

Taxon with IUCN Red List category ¹ and population trend ²	Number traded and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) <div style="display: flex; justify-content: space-around; font-size: 0.8em;"> ■ C ■ D ■ F ■ W ■ R ■ O ■ U ■ (blank) </div>	Trade over time
<i>Acipenser brevirostrum</i> (Shortnose Sturgeon) ^{VU} ↓	1653 0.1%		
<i>Pangasianodon gigas</i> (Mekong Giant Catfish) ^{CR} ↓	692 0.07%		
<i>Chasmistes cujus</i> (Cui-ui) ^{CR} (needs updating)	500 0.05%		
<i>Probarbus jullieni</i> (Jullien's Golden Carp) ^{EN} ↓	10 0.001%		

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

The main exporters of live Appendix I fish over the 36 year period were Indonesia and Malaysia, accounting for 62% and 32% of exports, respectively (all of which comprised the species *S. formosus*) (Figure 3.23). The trade was reported to 66 destinations, with the major trading partners being Japan (25% of exports), Taiwan, Province of China (22%), Singapore (21%), Hong Kong, SAR (11%) and China (8%), as reported by exporters.

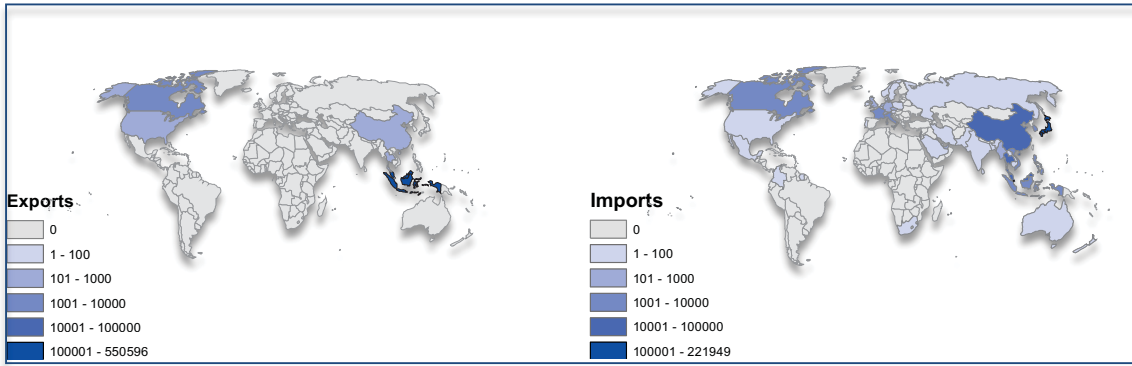


Figure 3.23: Top exporting and importing countries of Appendix I live fish, 1975-2010.

3.6 Invertebrates

There are currently 64 invertebrate species and five subspecies listed in CITES Appendix I, belonging to three families. These include 39 species of Achatinellidae (Agate snails and oahu tree snails), 21 species and five subspecies of Unionidae (freshwater and pearly mussels), and four species of Papilionidae (birdwing and swallowtail butterflies). There were 19 species and seven subspecies included in Appendix I when the Convention came into force; the main addition was several *Papilio* spp. and the genus *Achatinella* at CoP6 (Figure 3.24).

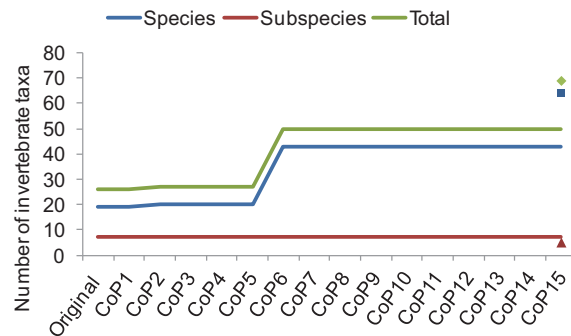


Figure 3.24: Cumulative listings of Appendix I invertebrate taxa, as determined by accepted CoP proposals. Data points indicate the number of current listings considering changes in standard nomenclature.

3.6.1 Direct trade

Similar to amphibians, there are significant differences between exporter and importer reported figures, as detailed in Box 3.3. Whilst the reported levels of trade in Appendix I invertebrates have been very low (30 or less specimens for each taxon in trade) according to exporters, importer-reported data suggests that trade has primarily been in live specimens with minimal levels of trade in other terms.

Live

Exporters reported only 53 live Appendix I invertebrates in trade 1975-2010, yet reported imports totalled 16 728 live individuals. Of this trade, 99% comprised a single species, *Unio nickliniana* (Nicklin's Pearly Mussel). The species is distributed in Guatemala and Mexico and has not yet been assessed by the IUCN.

According to the importer, the U.S., the individuals in trade all originated from Mexico in 1989, and were imported for commercial purposes; the source was not reported. Mexico became a Party to CITES in 1991 and was not required to submit CITES annual reports prior to that year.

3.7 Plants

Currently 84 species, 4 subspecies and 11 genera of plants are listed in Appendix I, representing 20 families. Three of these contain a substantially larger number of listed species: Cactaceae (cacti), Orchidaceae (orchids) and Zamiaceae (cycads). Figure 3.25 shows cumulative plant listings on Appendix I.

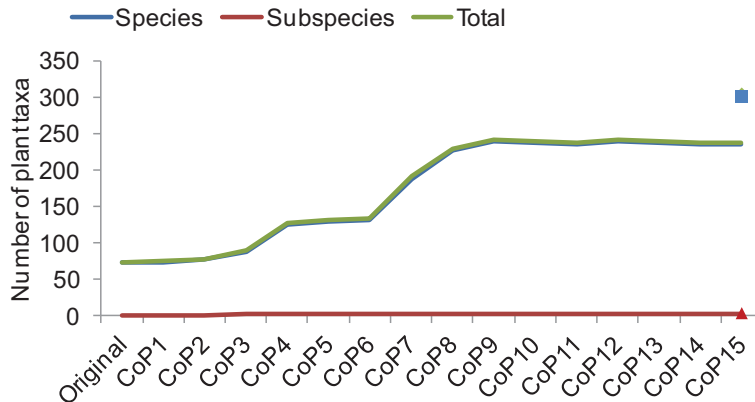


Figure 3.25: Cumulative listing of Appendix I plant taxa as determined by accepted CoP proposals. The data points indicate the number of current listings considering changes in standard nomenclature.

3.7.1 Direct trade

Over the 36 years 1975-2010, CITES Appendix I plants were mainly traded as derivatives and roots (Figure 3.26). Trade levels were low in the years after the Convention came into force (1975-1980), with trade mainly in timber, live plants, seeds and cultures. Apart from the latter, trade in these terms continued to increase over the following years (1981-1995), with substantial levels of trade in roots and derivatives emerging. In more recent years (1996-2010), seeds, roots, derivatives and live plants dominated the trade in Appendix I plants.

The following sections focus on the analysis of the main trade terms for CITES Appendix I plants: derivatives and roots.

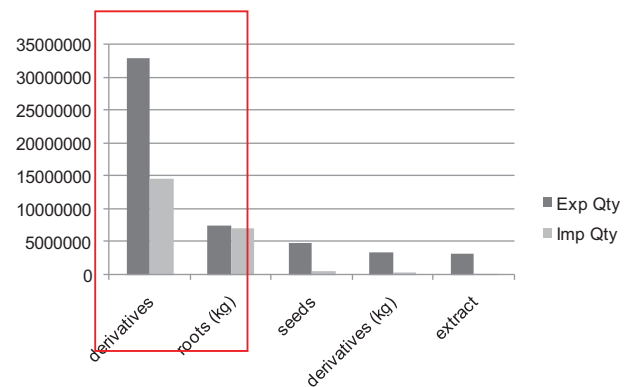


Figure 3.26: Top five CITES Appendix I plant terms in trade 1975-2010, selected on the basis of exporter reported data, as reported by exporters (Exp Qty) and importers (Imp Qty).

Derivatives

Trade in derivatives started in the mid-1980s, with levels peaking in the early 1990s. While the majority of derivatives were artificially propagated, the source was not specified for about a quarter of trade. In more recent years (1996-2010), derivatives were traded at lower levels and were mainly from artificially propagated sources (Figure 3.27).

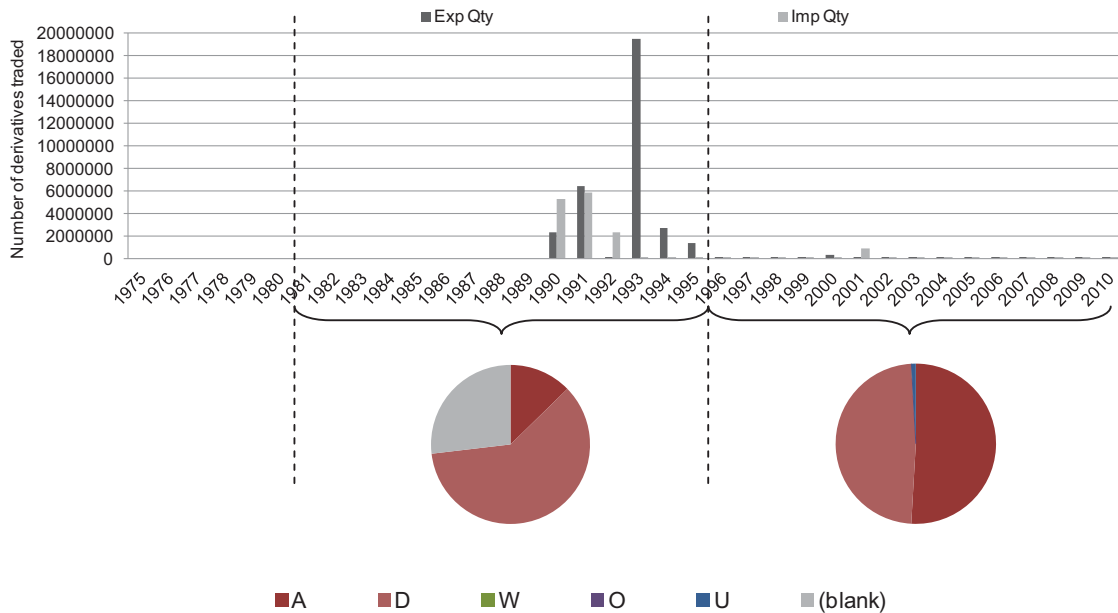


Figure 3.27: Trade in live CITES Appendix I plants over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty) and the corresponding sources for the three time periods 1976-1980, 1981-1995 and 1996-2010, as reported by exporters.

Exporters reported trade in plant derivatives from two Appendix I species in 1975-2010, with the family Compositae dominating the trade (32 871 682; <100%). The single most highly traded species was *Saussurea costus* (listed in Appendix I in 1985), as indicated in Table 3.10. Importers also reported low levels of trade in three other species, one hybrid and Orchidaceae spp.

Table 3.10: Key Appendix I plant species traded as derivatives, as reported by exporters 1975-2010.

Species and IUCN Red List category and population trend	Number and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ A ■ D ■ W ■ U ■ (blank)	Trade over time
<i>Saussurea costus</i> (Costus root) (Not evaluated)	32 871 682 >99.9%		

Plant derivatives were mainly traded within Asia, with countries of that region exporting >99.9% of the trade and importing 97%. The main exporters were China (97%) and India (3%), with Japan importing 94% of derivatives in trade 1975-2010 (Figure 3.28).

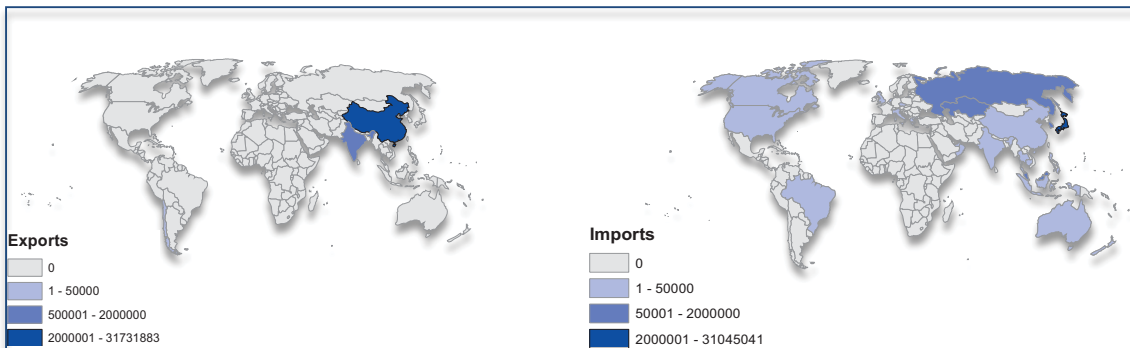


Figure 3.28: Top exporting and importing countries of Appendix I plant derivatives, 1975-2010.

Roots

Trade in roots started in the mid-1980s, and was mainly from artificial propagation, although the source was not specified for 13% of the trade. Trade in roots continued in more recent years, with almost all roots exported being artificially propagated (Figure 3.29).

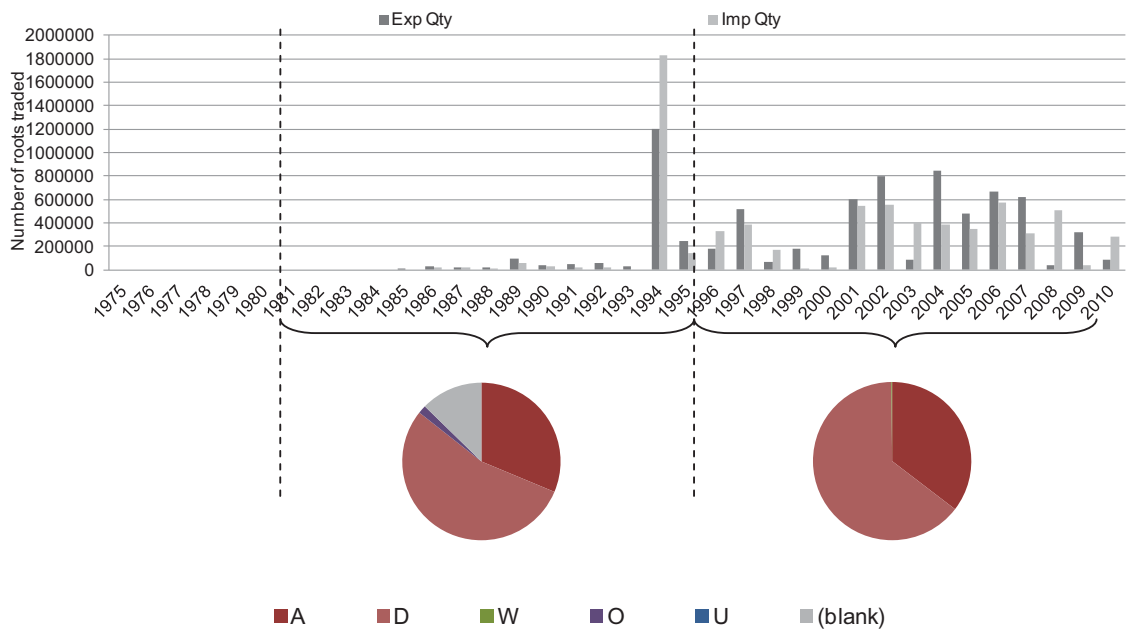


Figure 3.29: Trade in Appendix I roots (kg) over time, 1975-2010, as reported by exporters (Exp Qty) and importers (Imp Qty). The proportion of sources represented in trade is summarized for 1976-1980, 1981-1995 and 1996-2010.

Exporters reported trade in roots from two Appendix I species 1975-2010, *Saussurea costus* (Compositae) and *Stangeria eriopus* (Stageriaceae), with *S. costus* dominating the trade (7 384 351; >99.9%; Table 3.11).

Table 3.11: Top species traded for their roots from 1975-2010, as reported by exporters.

Species and IUCN Red List category and population trend	Number and % of trade	Proportion of trade by source (each bar represents 100% of trade in each species) ■ A ■ D ■ W ■ U ■ (blank)	Trade over time
<i>Saussurea costus</i> (Costus root) (Not evaluated)	7 384 351 >99.9%		

According to exporter reported figures, the main exporters of roots were China and India, accounting for 96% and 4% of direct trade, respectively (Figure 3.40). Asian countries also imported the majority of roots, in particular the Republic of Korea (62%), India (8%) and Japan (6%) in 1975-2010. Twelve per cent of roots were reported to have been imported by an 'unknown' country.

Box 3.4: Trade in CITES Appendix I species according to exporters and importers

For many taxa, there appear to be large discrepancies in the volumes of trade as reported by importers and exporters. In some cases, these can be explained by either Party not submitting an annual report. For all trade in Appendix I taxa taken from the wild, import permits must be issued as a prerequisite to issue of an export permit (see Box 1), and higher importer data could reflect submission of annual reports issued on the basis of permits issued, but the actual trade did not take place.

Conclusions about patterns of trade in Appendix I-listed species can differ dependent on whether the focus is on exporter or importer reported data. For example, for live amphibians, much higher trade levels were reported in 1980-1995 as a result of an import of 6015 *Nectophrynoides* spp. (unknown source) from Mexico, which was a non-Party at the time. Whilst importer data would suggest that 70% of trade (1128 individuals) in 1996-2010 was in wild-sourced amphibians, exporter data suggested that more than 90% of trade (of 332 individuals) was reported to be from captive sources.

3.8. Globally threatened species

Appendix I species categorised by the IUCN as globally threatened (Critically Endangered, Endangered or Vulnerable) were not generally highly traded. However, there were several notable exceptions concerning live reptiles, amphibians and plants, in addition to parts and derivatives for a number of taxonomic groups. All purposes except S (scientific) and N (reintroduction or introduction to the wild) were considered. Several animal species were traded as live in volumes exceeding 200 individuals 1975-2010; there also appeared to be some recent trade of potential concern which is also highlighted.

Live

Two commercial imports of live wild *Testudo kleinmanni* (Kleinmann's Tortoise) originating from Egypt were reported by the U.S. in 1994 (1331 individuals) and 1995 (1650 individuals). This Critically Endangered species is now effectively considered extinct in Egypt (PERÄLÄ, 2003). Trade in the Endangered *Chelonia mydas* (Green Turtle) and Critically Endangered *Atelopus zeteki* (Golden Arrow Poison Frog) was also reported for commercial purposes (see section 6 - Infractions), and the export of 360 live wild *Lepidochelys kempii* (Kemp's Ridley) from Mexico was reported imported by the U.S during 1994-1995 for an unknown purpose. This species is classified as Critically Endangered.

More recently, 22 live individuals of the Critically Endangered *Dermochelys coriacea* (Leatherback Turtle) were reported exported from South Africa in 2010 for commercial use.

Whilst some trade in globally threatened live plants was reported, the largest concerned an import of 368 individuals of the Vulnerable *Stangeria eriopus* (Hottentot's Head) from Malaysia to the U.S. in 1998 (see section 6 – Infractions). Importers also reported trade in the Vulnerable *Euphorbia ambovombensis* (301 individuals) and *Ariocarpus agavoides* (235 individuals). However, only live trade in the Vulnerable *Encephalartos manikensis* and Endangered *E. horridus* have been reported in quantities of ten or more in very recent years (2006-2010), with exports originating from Australia and South Africa respectively.

Parts and derivatives

Trade in specimens was reported for a variety of purposes aside from scientific, including commercial, biomedical, personal, zoos and unknown. For example, 1139 specimens of *Dermochelys coriacea* were reported imported for personal use in 1999. Other possibly notable trade in globally threatened species (not mentioned elsewhere under sections 6 and 7.2 on Infractions and Reservations) included carvings of *Physeter macrocephalus* (Sperm whale, Vulnerable) for personal use, and carapaces and carvings of marine turtles for personal use, especially *C. mydas* and *Eretmochelys imbricata* (Hawksbill Turtle, Critically Endangered).

Notable plant terms included export of 8800 m³ of timber and 2,707,264 (no units) of *Fitzroya cupressoides* which is currently classified as an Endangered species, and export of 20,000 timber pieces of *Pilgerodendron uviferum* (Vulnerable), both originating from Chile.

3.9 Summary of Appendix I trade patterns

Overall, improved reporting of source and purpose codes was clearly evident between the two 15 year periods, 1981-1995 and 1996-2010. Source and purpose codes were omitted on 28% and 32% respectively of permits issued during 1981-1995. In contrast, source and purpose codes were missing on only 1% and 8% respectively of permits issued during 1996-2010.

Almost half of all species listed in CITES Appendix I are mammals and trade in this taxonomic group was dominated by skins (unspecified source), specimens (predominantly of wild origin) and captive bred live animals. Whilst a high volume of derivatives was also reported, such trade is difficult to equate to number of individuals and therefore determining its impact on wild populations is problematic. However, the majority of trade in mammal derivatives was of pre-Convention origin.

For several taxonomic groups (notably live birds, reptiles and fish) commercial trade in captive produced specimens has increased over time; however the majority of trade was dominated by a relatively small number of taxa. The main five exporters of live birds (all European) predominantly traded species which were non-native. Non-range States exclusively benefitted from the live bird trade for certain species.

Plant trade was dominated by artificially propagated derivatives and roots, although trade in derivatives has declined substantially since the early 1990s. *Saussurea costus* (Costus root) was the predominant taxon in trade under these terms. Virtually all trade in plant derivatives occurred between countries of the Asian region.

Whilst there were several globally threatened taxa traded at more notable levels, generally wild Critically Endangered, Endangered and Vulnerable species were traded at low levels.

4 Trade of regional importance

This section analyzes direct trade of regional importance, highlighting the terms that were traded at highest levels, trade trends of the main terms over time and species involved. The following information is based on Appendix I trade as reported by exporters (further information on the methods are available in Section 2 Methodology, 2.1.2 Regional analysis).

Over the 36 years analyzed, North America was the region with the highest levels of Appendix I export transactions overall (i.e. numbers of permits issued), representing 30% of direct export transactions; within this region, the U.S. was the main exporting country (Figure 4.1).

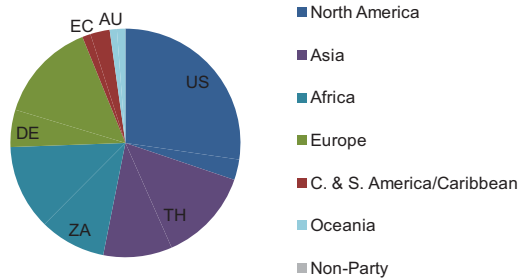


Figure 4.1: Proportion of Appendix I export transactions (permits issued) by CITES region 1975-2010, including the main exporter per region.

4.1 Plants

Plant exports by volume were dominated by Asia, predominantly comprising derivatives and roots (kg). *Saussurea costus* was the main derivative exported from Asia. Live plants were exported in highest volumes from both Africa and Oceania; *Encephalartos* spp. and *Paphiopedilum* spp. were the main genera involved respectively. Timber (predominantly *Fitzroya cupressoides*) was the main plant term exported from Central and South America and the Caribbean, and plant seeds were exported from Europe and North America in highest volumes, mainly involving *Obregonia denegrii* and *Ariocarpus* spp. respectively (Figure 4.2).

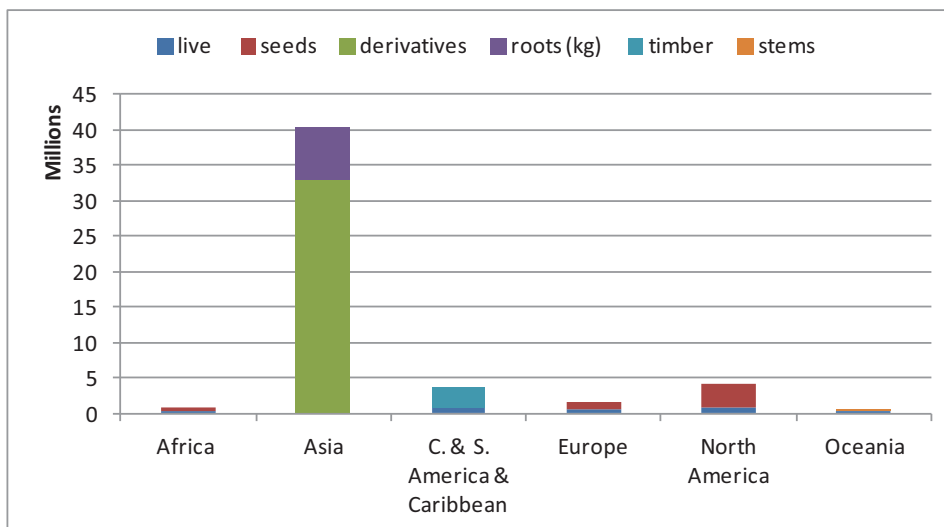


Figure 4.2: Main plant terms exported from each CITES region 1975-2010.

4.2 Animals

The main animal trade term exported in highest volumes was different for each region. Overall, animal exports by volume were also dominated by the Asian region, and predominantly comprised reptile skins and reptile meat (kg). *Varanus bengalensis* was the main species reported exported as skins from Asia. Mammal specimens were exported from Africa in highest volumes, with *Acinonyx jubatus* (Cheetah) the main species involved. Reptile specimens (predominantly *Chelonia mydas* (Green Turtle)) were the major exports from Central and South America and the Caribbean, and Europe's largest export by volume was mammal meat. The main species exported was *Balaenoptera acutorostrata* (Common Minke Whale). Mammal skins (Chinchilla spp.) were exported in highest numbers from North America, and mammal wax (predominantly *Physeter macrocephalus* (Sperm Whale)) was the major term exported from Oceania (Figure 4.3).

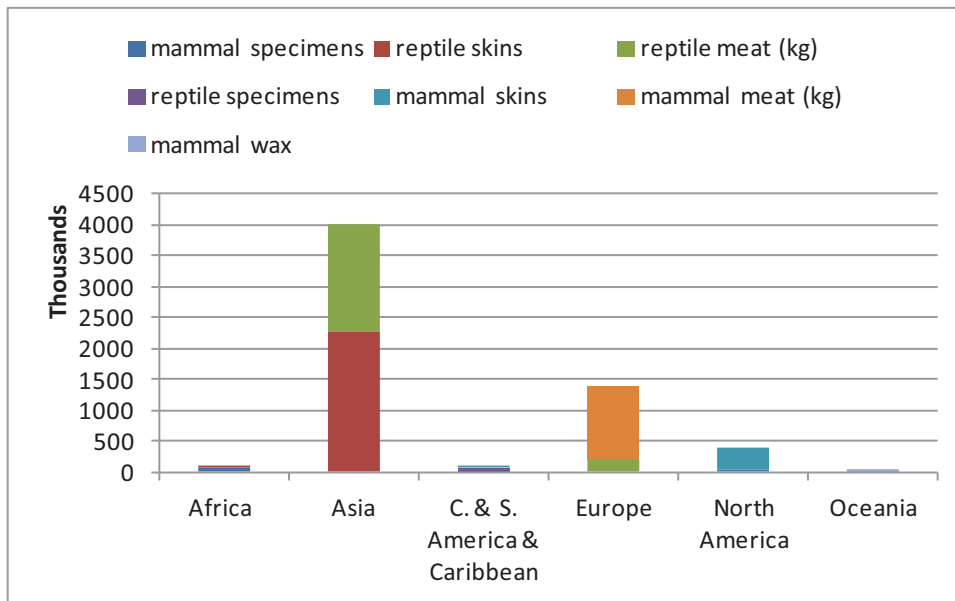


Figure 4.3: Main animal terms exported from each CITES region 1975-2010.

4.3 Wild-sourced

The main plant and animal terms exported from the wild (including unknown and no source specified) during 1975-2010 are summarised for each region in Figures 4.4-4.9, with export levels over time indicated for selected terms. For the remaining terms, arrows indicate whether trade was higher or lower in 1996-2010 compared to 1980-1995.

Africa

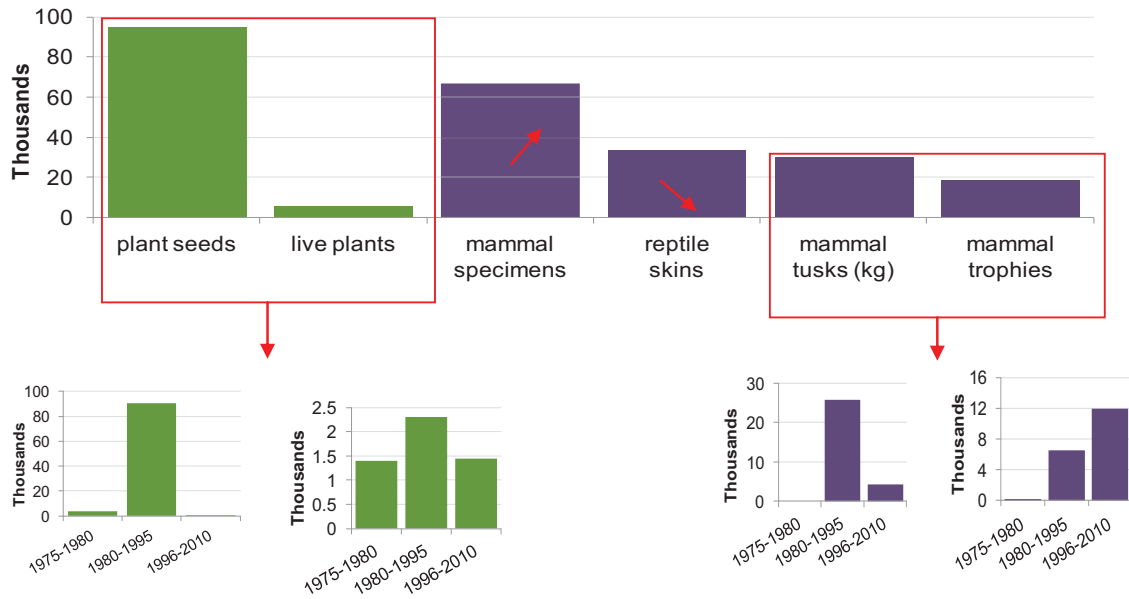


Figure 4.4: The main wild-sourced plant and animal terms exported directly from Africa, 1975-2010. Only terms traded above 5000 units in total are included.

Asia

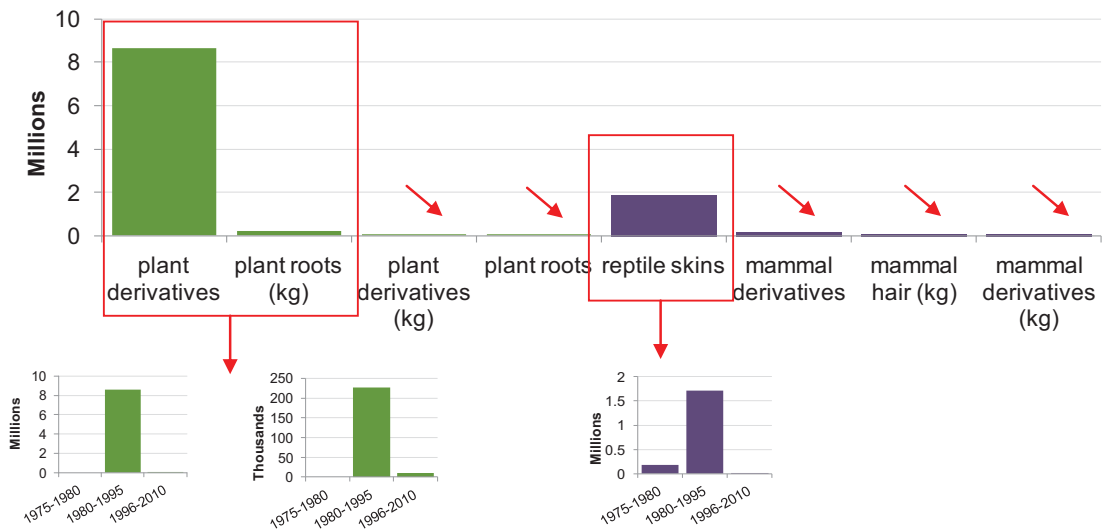


Figure 4.5: The main wild-sourced plant and animal terms exported directly from Asia, 1975-2010. Only terms traded above 10 000 units in total are included.

Central and South America and the Caribbean

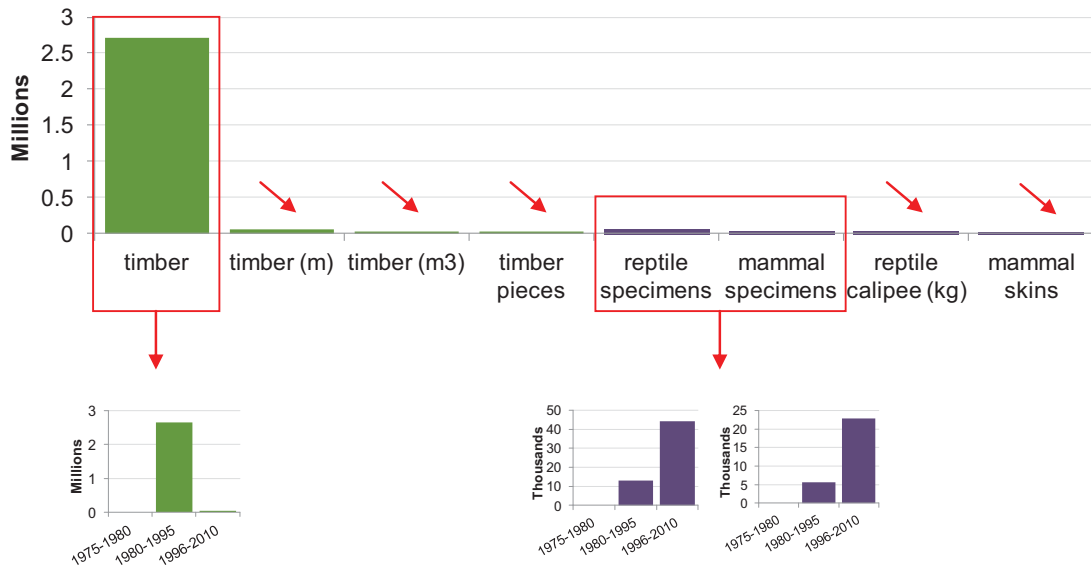


Figure 4.6: The main wild-sourced plant and animal terms exported directly from Central and South America and the Caribbean, 1975-2010. Only terms traded above 10 000 units in total were included.

Europe

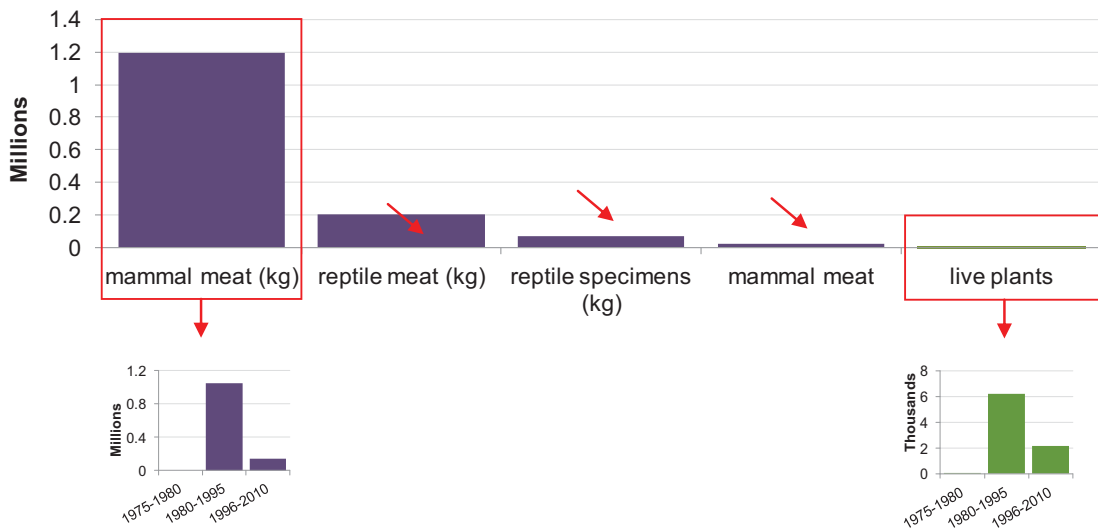


Figure 4.7: The main wild-sourced plant and animal terms exported directly from Europe, 1975-2010. Only terms traded above 5000 units in total are included.

North America

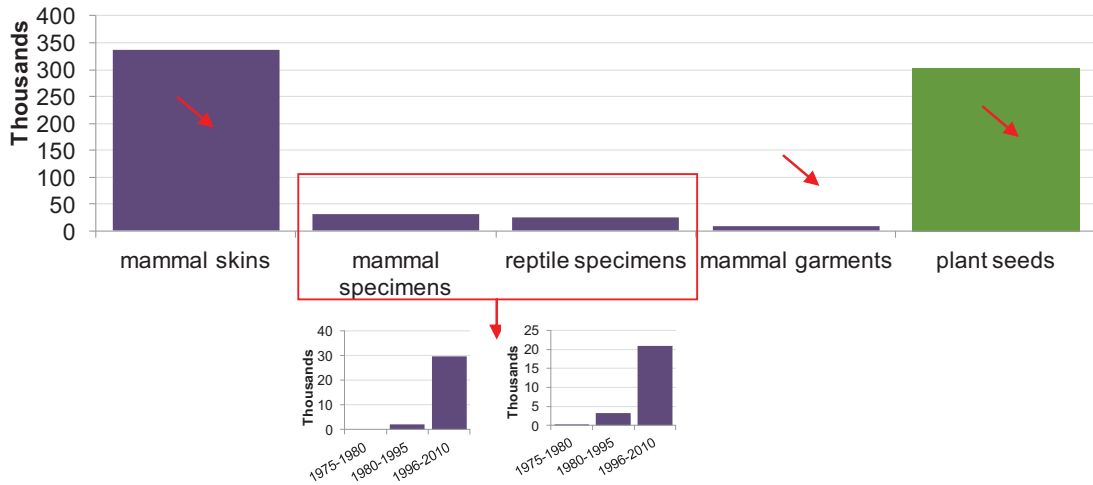


Figure 4.8: The main wild-sourced plant and animal terms exported directly from North America, 1975-2010. Only terms traded above 5000 units in total are included.

Oceania

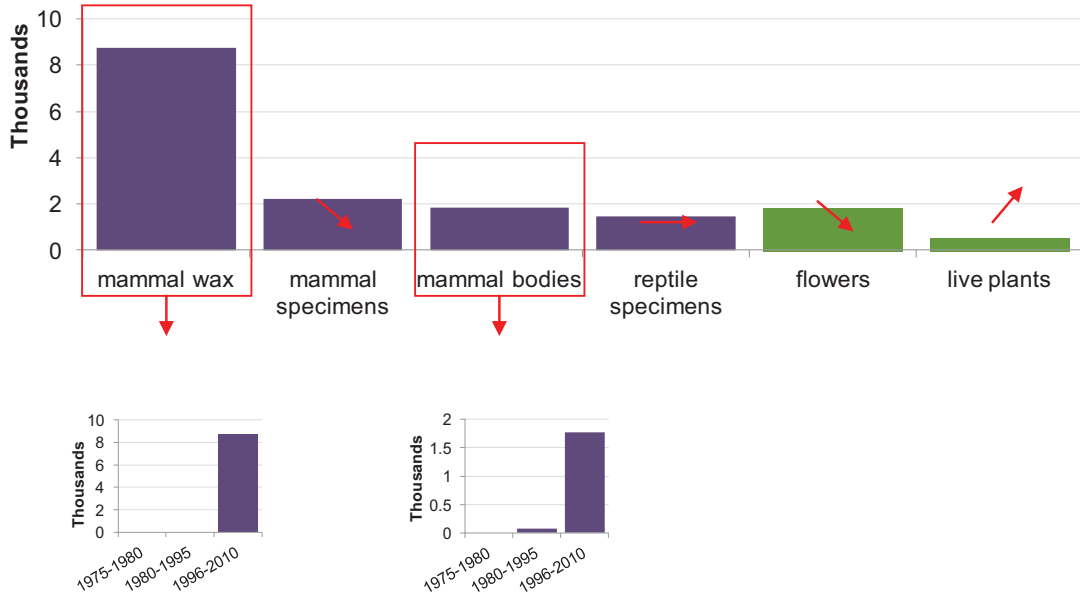


Figure 4.9: The main wild-sourced plant and animal terms exported directly from Oceania, 1975-2010. Only terms traded above 400 units in total were included.

5 Appendix I successes

The conservation status of a number of Appendix-I listed species has improved over time, and proposals to transfer taxa to Appendix II have been considered at successive CoPs. The first fifteen meetings of the CITES CoP approved proposals to transfer a total of 57 taxa from Appendix I to Appendix II, the majority for mammals taxa (Figure 5.1). A list of these taxa are provided in Annex 2.

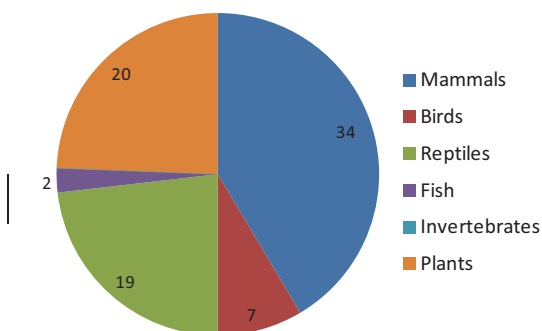


Figure 5.1: Number of successful proposals to transfer taxa from Appendix I to Appendix II by taxonomic group.

Two examples are provided in this section, which demonstrate that effective Appendix I controls and improvements in national and regional management can result in conservation successes. Some observations are provided on how lessons can be learned from these successful management examples

5.1 Vicuña (*Vicugna vicugna*)

The vicuña, a South American camelid is found at elevations in excess of 3200 m (LICHTENSTEIN *et al.*, 2008). Being adapted to the freezing environment at high altitudes, the hair of the vicuña is extremely fine and is highly sought after in the textiles industry. A long period of substantial and uncontrolled trade led to a population crash in the 1960s, with only a

few thousand individuals remaining (LICHTENSTEIN *et al.*, 2008).

Vicugna vicugna was listed in Appendix I when CITES came into force in 1975. In addition to international trade restrictions, the key to the recovery of the species was a regional initiative, the Vicuña Convention, whereby the range States (Argentina, the Plurinational State of Bolivia (hereafter referred to as Bolivia), Chile and Peru) developed a plan to use the species sustainably whilst alleviating poverty in local communities. Ownership of populations varies, with all wild specimens being State property in Peru and Bolivia (LICHTENSTEIN *et al.*, 2008). Management techniques also vary between and within countries, ranging from wild capture, shearing and release, to semi-captive farming within large fenced areas. In some range States, local community involvement is strong, with communities responsible for shearing and protecting the species, and receiving income from sale of the fibre for international trade. In Peru, re-stocking opportunities are contributing to livelihoods and range extensions.

The recovery of vicuña populations led to a partial relaxation of the trade controls for this Appendix I species, with a number of populations being transferred to Appendix II. In 1997, international trade from certain populations was approved under strict conditions, i.e. for wool or wool products sheared from live animals, cloth, derived manufactured products and other handicraft artefacts, provided they bear the label including the logotype adopted by the range States (see below).

In 1982, *V. vicugna* was assessed by the IUCN as Vulnerable; its status remained unchanged until 1996, when it was categorised to Lower Risk/least concern. In 2008, the species was categorised as Least Concern by the IUCN, due to a large population size and wide range, with populations also occurring in protected areas (LICHTENSTEIN *et al.*, 2008). Whilst poaching, habitat deterioration due to competition with livestock and other threats continue to impact on the species, the current global population estimate is over 347 000 individuals, with an increasing population trend (LICHTENSTEIN *et al.*, 2008). The IUCN assessment notes that ‘tight control at local, national and international levels are key for the conservation of the species’.

Virtually all trade in Appendix I *V. vicugna* 1975-2010 appeared to be in accordance with the provisions of the Convention. Extremely low levels of illegal trade (reported under source code ‘I’) were reported within CITES annual reports, which may suggest that the national enforcement efforts implemented by the range States were relatively effective. Small quantities of wild-sourced Appendix I *V. vicugna* terms were reported in trade for commercial purposes (one specimen in 1996 and 27 garments during 2006-2007), all of which originated in Argentina. However, it is likely that garments were reported erroneously as Appendix I, as some of Argentina’s populations were listed in Appendix II at that time, and Argentina did not report commercial exports of Appendix I garments.

Ecuador has an introduced population, resulting from a donation from Peru, Chile and Bolivia, and has submitted a proposal to down-list its population from Appendix I to II at CITES CoP16.

5.2 Crocodylia spp.

There are 23 species of Crocodylia (alligators, caimans and crocodiles), all of which are listed in Appendix I or II. When the Convention came into force in 1975, 15 species and two subspecies were listed in Appendix I⁴ and seven species and two subspecies in Appendix II⁵. These listings reflected the general poor conservation status of many Crocodylia spp. at that time.

The main Appendix I Crocodylia species traded are *Crocodylus siamensis* (Siamese Crocodile) (live and skins) and *C. porosus* (Salt-water Crocodile) (teeth and skins), which predominantly originate from CITES registered breeders. However, the preferred management regime for crocodiles in many range States is ranching, which refers to the removal of high mortality life stages from the wild (e.g. eggs, juveniles) to rear them in controlled conditions to adulthood for commercial purposes.

At CoP3, Resolution Conf. 3.15 on ranching was adopted, which allowed Parties to transfer Appendix I populations to Appendix II for ranching purposes (this was amended by Resolution Conf. 11.16 (Rev. CoP15)). Ranching is generally considered to be a more benign form of harvest than offtake of wild adults, and the Resolution’s preambular text

⁴ *Alligator mississippiensis*, *A. sinensis*, *Caiman crocodilus apoporiensis*, *C. latirostris*, *Melanosuchus niger*, *Crocodylus cataphractus*, *C. intermedius*, *C. mindorensis*, *C. moreletii*, *C. niloticus*, *C. novaeguineae mindorensis*, *C. palustris*, *C. rhombifer*, *C. siamensis*, *Osteolaemus tetraspis*, *Tomistoma schlegelii* and *Gavialis gangeticus*

⁵ *Crocodylus acutus*, *C. johnsoni*, *C. novaeguineae*, *C. porosus*, *Caiman crocodilus crocodilus* and *C. c. fuscus*, *C. yacare*, *Paleosuchus palpebrosus* and *P. trigonatus*.

refers to it as a potentially valuable and positive conservation tool, which has proven to be a sustainable form of utilization for some species.

Proposals to transfer an Appendix I populations to Appendix II in order to conduct a ranching programme must satisfy two main criteria:

- the population of the species is no longer considered endangered; and that
- the ranching programme is primarily beneficial to the conservation of the local population (i.e. where applicable, it contributes to its increase in the wild or protects habitat whilst maintaining a stable population).

There have been 13 proposals to transfer Appendix I Crocodylia species to Appendix II pursuant to these Resolutions and 11 have been successful, resulting in the transfer of five species in 15 countries. All of the proposals were submitted by range States for the species concerned (see Box 5.1 on success rates for Appendix I proposals). Three proposals have also been submitted to CoP16 to transfer populations from Appendix I to II, involving *Crocodylus acutus* (American Crocodile) originating in Colombia, as well as *C. porosus* and *C. siamensis* originating in Thailand.

The status of many Crocodylia spp. is now favourable. *Crocodylus niloticus* and *C. porosus*, for instance, are both now categorised as Lower risk/least concern by the IUCN (although the assessments require updating), having been previously considered globally threatened (CROCODILE SPECIALIST GROUP, 1996). The status of *C. moreletii* (Morelet's Crocodile) has also improved from being classified as Endangered from 1986-1996, Data deficient in 1996, to Least Concern in 2012, with a stable population (CEDEÑO-VÁZQUEZ, 2012). *Crocodylus siamensis*, however, has been Critically Endangered since 1996, as the species has a small, fragmented and declining population of only 1000 mature individuals (BEZUIJEN *et al.* 2012).

Whilst the main historical threat was hunting for skins, human-crocodile conflict is an emerging threat, driven by competition for fish resources and the predation risk to livestock (COMBRINK, *et al.*, 2011).

Following a review of crocodile ranching programs across 23 countries, the Crocodile Specialist Group of the IUCN/SSC concluded that ranching had been successful in a variety of countries with differing socio-economic levels and technical capabilities, and nowhere had ranching been associated with, or alleged to be the cause of, detrimental effects on wild populations (AC22 Inf. 2).

Box 5.1: Success of proposals to amend the Appendices affecting Appendix I

Of the 1,129 proposals affecting Appendix I species submitted to CoPs 1-15, 457 were successful. Resolution Conf. 8.21 recommends that proponent States must consult with the Management Authorities of range States within which the species concerned occurs to advise them of its intention to submit a proposal, or if this is not possible, submit the proposal to the Secretariat no later than 330 days prior to the CoP to allow for consultation with Parties. Prior to the adoption of this Resolution, many proposals were submitted without consultations with range States. Of the proposals submitted to CoPs 1-8 inclusive, range State proposals accounted for 47% (422) of total proposals, whilst non-range state proposals represented 53% (473).

At CoPs 9-15, there was a decrease in the average number of proposals submitted to each meeting. A shift was also observed towards the submission of proposals by range States, which accounted for 80% (193) of total proposals relating to Appendix I, compared to 20% (47) submitted by non-range States. The trend over time is most apparent by comparing proposals submitted to CoP1 (82% or 263) accounted for by non-range State proponents, and CoPs 14 and 15, with all proposals affecting Appendix I species being submitted by range States. The success rate of range State proposals increased following adoption of Resolution Conf. 8.21, from 43% (182) pre-Resolution to 65% (122) for post-Resolution proposals. Success rates for non-range State proposals have not been affected.

5.3 Conclusions

These two case studies involve different management approaches and illustrate how CITES measures have contributed towards improving the conservation status of species. The harvest of vicuña hair is ideal for sustainable use because the fibre can be sheared from live animals and local communities can benefit from profits generated from managing the species. Ranching of crocodiles in accordance with Resolution Conf. 11.16 (Rev. CoP15) provides commercial incentives to conserve adult specimens and their habitat in the wild.

In its preamble, CITES recognises that 'people and states are and should be the best protectors of their own wild fauna and flora'. Resolution Conf. 8.3 (Rev. CoP13) also acknowledges that the implementation of CITES listings and any conservation programmes need to take into consideration the needs and livelihoods of local people. Providing economic incentives to ensure sustainable use in local communities has been a key element in these "success stories" and indeed CITES is increasingly focusing attention on the livelihoods of the poor. CoP15 adopted a number of Decisions directing the Standing Committee working group to finalise a toolkit for national assessment of both positive and negative impacts of implementation of CITES listings on livelihoods and produce guidelines to address negative impacts.

However, it must be noted that listing on CITES Appendix I has not been successful in promoting the recovery and improving conservation status of all species. For example, illegal trade continues to threaten many high profile Appendix I species such as rhinos, tigers, great apes and elephants in some range States. Improving law enforcement to control poaching and to regulate illegal trade remain key challenges for CITES Parties.

International trade regimes for Appendix I species are likely to require a case-by-case solution and account for the biological needs of the species concerned. As recognised in

SC62 Doc 46. 4 (Annex) [for elephants], they may also need to consider the costs of protecting the species, the level of government and public support, whether expansion of habitat available beyond protected area boundaries to promote conservation incentives is possible, the development of regional and local institutions and involvement of local stakeholders for species management, strong domestic law and enforcement, an understanding of the market in which commodities are traded, and a short market chain to reduce potential for laundering and corruption.

6 **Infractions of the Convention and non-compliance with its provisions**

This section examines apparent infractions of the Convention (or direct non-compliance with the Convention) relating to reported Appendix I trade, as determined from analysis of trade data submitted by Parties in their annual reports. It also investigates non-compliance with the provisions of the Convention as laid down in some of the Resolutions of the Convention. Whilst Resolutions are considered to be ‘soft law’ and non-binding on Parties, they provide definitions regarding terms used (e.g. pre-Convention, bred in captivity, etc.) which guarantee minimum standards are adhered to.

The main ‘infractions’ considered in this section include: trade in wild-sourced Appendix I specimens for commercial purposes, trade which occurred in contravention of trade suspensions, and the control of quotas approved by the Conference of the Parties for Appendix I species.

6.1 Wild-sourced trade for commercial purposes

Article III of the Convention prescribes the full conditions under which trade in Appendix I specimens can take place. These conditions, along with a number of exemptions which permit trade in specimens of species listed in Appendix I, are summarised in the Introduction (Text box 1.1: Under what circumstances can trade in Appendix I species occur?)

Under the provisions of the Convention, imports of wild-sourced specimens of species listed in Appendix I are not permitted for primarily commercial purposes (reported in trade under source code “T”). The CITES Trade Database indicates that such imports have regularly occurred. These apparent infractions of the Convention (as well as commercial trade reported for wild-sourced Appendix I specimens by exporters) are summarised below by the main taxonomic groups, for trade occurring at levels of 100 units or higher (Table 6.1).

The volume of apparent trade transactions which involved wild-sourced specimens of Appendix I species traded for commercial purposes is clearly of concern. The majority of apparent contraventions of the Convention involved imports of mammals (elephant products, parts and derivatives of the family Felidae) and reptiles, which were mainly in fairly low volumes (with the exception the import of 2981 live tortoises of *Testudo kleinmanni* (Kleinmann’s Tortoise), as discussed in section 3.8). Apparent contraventions for live plants mainly involved orchids of the genus *Paphiopedilum*, in addition to parts and derivatives of *Saussurea costus* and seeds of *Encephalartos* spp.

The number of contraventions over time appears to be variable; however imports of wild-sourced mammal taxa not subject to reservations were reported in commercial trade in every year 1990-2010, demonstrating that this appears to be a continued problem. However, it is not clear to what extent the apparent contraventions represent real contraventions or reporting errors.

For example, the trade in *Atelopus zeteki* (endemic to Panama) reportedly took place in 2001, and all trade in species of the genus *Dyscophus* (endemic to Madagascar) was reported in 1997 and 1998. Neither of the exporters reported any commercial trade in wild-sourced amphibians (both of which were Parties to the Convention at the time). The reported

import of *Acipenser sturio* from Australia by New Zealand is likely to be erroneous, as the species does not occur naturally within Australia.

Table 6.1: Reported trade in wild-sourced Appendix I taxa (terms over 100 units) for primarily commercial purposes, by importers and exporters, 1975-2010.

Taxonomic group	Taxon with IUCN Red List category ¹ and population trend ²	Term	Quantity	Reported by
Mammals	<i>Loxodonta africana</i> (African Elephant) ^{VU} ↑	Skin pieces	5332	Importer
		Skins	764 and 332 m ²	Importer
		Ivory carvings	199	Importer
	<i>Moschus</i> spp. (Musk Deer spp) ³	Derivatives	1935	Importer
	<i>Ursus thibetanus</i> (Asian Black Bear) ^{VU} ↓	Derivatives	1390	Importer
	<i>Physeter macrocephalus</i> (Sperm Whale) ^{VU} ?	Carvings	658	Importer
		Wax	206 kg	Importer
	<i>Panthera tigris</i> (Tiger) ^{EN} ↓	Derivatives	640	Importer
	<i>Panthera pardus</i> (Leopard) ^{NT} ↓	Derivatives	213	Importer
		Trophies	156	Importer
		Teeth	106	Importer
	<i>Bos gaurus</i> (Gaur) ^{VU} ↓	Skin pieces	192	Importer
	<i>Pan troglodytes</i> (Chimpanzee) ^{EN} ↓	Specimens	119	Importer
	<i>Leopardus pardalis</i> (Ocelot) ^{LC} ↓	Specimens	120	Exporter
	<i>Loxodonta africana</i> (African Elephant) ^{VU} ↑	Ivory carvings	1032	Exporter
		Tusks	717	Exporter
		Specimens	400	
		Skin pieces	244	Exporter
		Small leather products	217	Exporter
	<i>Megaptera novaeangliae</i> (Humpback Whale) ^{LC} ↑	Specimens	386	Exporter
	<i>Neofelis nebulosa</i> (Clouded Leopard) ^{VU} ↓	Derivatives	100	Exporter
	<i>Panthera pardus</i> (Leopard) ^{NT} ↓	Derivatives	30050	Exporter
		Trophies	1382	Exporter
		Claws	1100	Exporter
		Skins	355	Exporter
Skulls		344	Exporter	
<i>Panthera tigris</i> (Tiger) ^{EN} ↓	Derivatives	6169	Exporter	
<i>Physeter macrocephalus</i> (Sperm Whale) ^{VU} ?	Wax	8746 and 863 kg	Exporter	
	Carvings	570	Exporter	
	Teeth	215	Exporter	

Taxonomic group	Taxon with IUCN Red List category ¹ and population trend ²	Term	Quantity	Reported by
Mammals cntd.	<i>Prionailurus bengalensis bengalensis</i> (Bengal Leopard Cat) ⁴ LC →	Skins	200	Exporter
	<i>Rhinocerotidae</i> spp. ⁵ (Rhinoceros)	Derivatives	405	Exporter
	<i>Bos mutus</i> (Wild Yak) ^{VU} ↓	Hair	395 kg	Exporter
	<i>Saguinus oedipus</i> (Cotton-headed Tamarin) ^{CR} ↓	Specimens	1419	Exporter
Reptiles	<i>Caiman crocodilus apaporiensis</i> (Apaporis River Caiman) ⁶ LC (needs updating)	Small leather products	393	Importer
	<i>Chelonia mydas</i> (Green Turtle) ^{EN} ↓	Carapace	205	Importer
		Eggs	144	Importer
	Cheloniidae spp. ⁷	Eggs	3823	Importer
		Small leather products	429	Importer
	<i>Crocodylus moreletii</i> (Morelet's Crocodile) ^{LC} →	Small leather products	105	Importer
	<i>Crocodylus niloticus</i> (Nile Crocodile) ^{LC} (needs updating)	Small leather products	144	Importer
	<i>Crocodylus porosus</i> (Salt-water Crocodile) ^{LC} (needs updating)	Skins	186	Importer
	<i>Crocodylus siamensis</i> (Siamese Crocodile) ^{CR} ↓	Eggs	400	Importer
	<i>Eretmochelys imbricata</i> (Hawksbill Turtle) ^{CR} ↓	Specimens	213	Importer
		Carapace	3091 kg	Importer
	<i>Testudo kleinmanni</i> (Kleinmann's Tortoise) ^{CR} ↓	Live	2981	Importer
	<i>Chelonia mydas</i> (Green Turtle) ^{EN} ↓	Live	248	Importer
	Cheloniidae spp. ⁷	Specimens	100	Exporter
	<i>Crocodylus intermedius</i> (Orinoco Crocodile) ^{CR} (needs updating)	Skin pieces	175	Exporter
	<i>Crocodylus niloticus</i> (Nile Crocodile) ^{LC} (needs updating)	Skins	128	Exporter
	<i>Crocodylus porosus</i> (Salt-water Crocodile) ^{LC} (needs updating)	Skins	240	Exporter
	<i>Eretmochelys imbricata</i> (Hawksbill Turtle) ^{CR} ↓	Specimens	200	Exporter
		<i>Lepidochelys olivacea</i> (Olive Ridley) ^{VU} ↓	Specimens	350
	Amphibians	<i>Atelopus zeteki</i> (Golden Arrow Poison Frog) ^{CR} ↓	139	
<i>Dyscophus antongilii</i> (Tomato Frog) ^{NT} ?		20		Importer
<i>Dyscophus</i> spp. ⁸ (Tomato Frog spp.)		45		Importer

Taxonomic group	Taxon with IUCN Red List category ¹ and population trend ²	Term	Quantity	Reported by
Fish	<i>Scleropages formosus</i> (Golden Dragon Fish) ^{EN} ↓	Live	372	Importer
Fish cntd.	<i>Acipenser sturio</i> (Atlantic Sturgeon) ^{CR} ↓	Derivatives	500	Importer
		Eggs	115	Importer
Plants	<i>Paphiopedilum sukhakulii</i>	Live	1049	Importer
	<i>Paphiopedilum lawrenceanum</i>	Live	400	Importer
	<i>Stangeria eriopus</i> ^{VU}	Live	368	Importer
	<i>Paphiopedilum</i> spp.	Live	345	Importer
	<i>Cycas beddomei</i> ^{EN} ↓	Live	168	Importer
	<i>Encephalartos</i> spp.	Seeds	10500	Importer
	<i>Dendrobium cruentum</i>	Derivatives	201	Importer
	<i>Saussurea costus</i>	Derivatives	6403 kg	Importer
		Extract	72 kg	Importer
		Roots	10 000 kg	Importer
Derivatives		6403 kg	Exporter	
Extract		72 kg	Exporter	
	Roots	10 000 kg	Exporter	

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear; ³*Moschus anhuiensis* ^{EN}↓; *Moschus berezovskii* ^{EN}↓; *Moschus chrysogaster* ^{EN}↓; *Moschus cupreus* ^{EN}↓; *Moschus fuscus* ^{EN}↓; *Moschus leucogaster* ^{EN}↓; *Moschus moschiferus* ^{VU}↓; ⁴Assessed as *P. bengalensis*; ⁵*Dicerorhinus sumatrensis* ^{CR}↓; *Diceros bicornis* ^{CR}↑; *Rhinoceros sondaicus* ^{CR?}; *Rhinoceros unicornis* ^{VU}↑; *Ceratotherium simum* ^{NT}↑; ⁶Assessed as *C. crocodilus*. ⁷Chelonidae spp. includes *Caretta caretta* ^{EN} (needs updating); *Chelonia mydas* ^{EN}↓; *Eretmochelys imbricata* ^{CR}↓; *Lepidochelys olivacea* ^{VU}↓; *Natator depressus* ^{DD} (needs updating); ⁸*Dyscophus antongillii* ^{NT?}; *Dyscophus guineti* ^{LC?}; *Dyscophus insularis* ^{LC?}.

6.2 Suspensions

Trade suspensions for Appendix I species are relatively uncommon. However, the Standing Committee may recommend that a trade suspension is implemented for all trade from a particular Party, when that Party fails to provide annual reports for three successive years, in accordance with Resolution Conf. 11.17 (Rev. CoP14). Other national authorities implement voluntary bans on exports or imports of CITES-listed species, to assist with their management and control of international trade.

Only one Party reported an import of an Appendix I species in apparent contravention of a CITES suspension during 1996-2010. This involved import of live wild specimens of *Amazona viridigenalis* (Red-Crowned Amazon) whilst an Animals Committee recommendation was in place to suspend imports of wild-caught specimens from the country. But fourteen Parties exported Appendix I species which appeared to be in contravention of voluntarily imposed trade bans (as implemented by the Management Authority of the State of export). This involved trade in live individuals (six Parties), specimens (six Parties) and skins (5 Parties). Other terms reported traded in apparent contravention of export bans included eggs, skins, feathers and bones. This apparent trade involved 54 taxa, whilst 33 Parties reported accepting direct imports from Parties under voluntary export moratoria.

6.3 Control of CoP-approved quotas

National export quotas may be established for Appendix I species. Quotas approved by the CoP are accepted as non-detrimental in accordance with Resolution Conf. 9.21 (Rev. CoP13); whilst Resolution Conf. 2.11 (Rev.) provides recommendations for acceptance of non-detriment findings for non-commercial exports of hunting trophies. Specific quota limits for leopard, markhor and black rhinoceros are also provided (Res. Conf. 10.14 (Rev. CoP14), Res. Conf. 10.15 (Rev. CoP14) and Res. Conf. 13.5 (Rev. CoP14)). In addition, the Appendix-I listing for cheetah provides an annual export quota for three range States.

An assessment of trade levels reported in comparison to CoP approved export quotas for leopard, markhor, black rhino and cheetah was undertaken. A detailed case study is provided for Leopard (*Panthera pardus*), which represented 76% and 63% of all mammal trade reported specifically as 'trophies', as reported by exporters and importers, respectively.

6.3.1 Leopard (*Panthera pardus*)

Panthera pardus was listed in Appendix I in 1975. The species has a wide range and is locally common in some parts of Africa but is declining in large parts of its range (HENSCHEL, 2008). Resolution Conf. 10.14 (Rev. CoP14) provides annual quotas for leopard from 12 African range States which have populations that are not of conservation concern. Quotas range from 28 to 500 whole skins or nearly whole skins (including hunting trophies) depending on status. In accordance with that resolution, importing Parties should ensure that imports are primarily non-commercial. Previous CoP-approved export quotas for leopard are

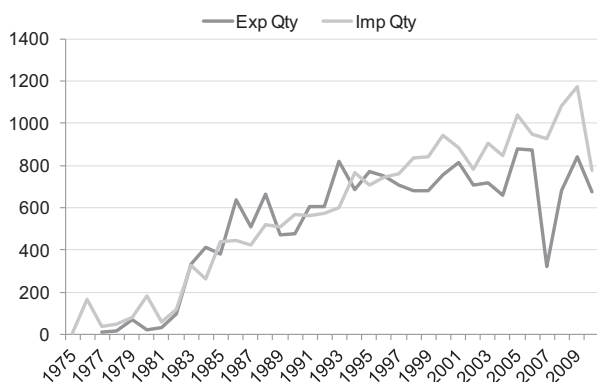


Figure 6.1: Direct exports of *Panthera pardus* trophies and skins (source W and 'blank' only, all purpose) 1975-2010 as reported by exporters and importers respectively.

reported by exporters. Trade levels in *P. pardus* trophies and skins have shown a gradual increase over the 36 years (Figure 6.1).

The quotas established in Resolution Conf. 10.14 appear to have been largely complied with, with most countries exporting at a level well below the quota established on an annual basis. Trade data from both exporters and importers suggests that one country exceeded their annual quota in 2009.

given in Resolutions Conf. 5.13, Conf. 6.9, Conf. 7.7, Conf. 8.10 and Conf. 8.10 (Rev) also provided The Secretariat has interpreted that leopard quotas relate to the number of specimens exported in one calendar year, and not to the year in which the specimens were removed from the wild (see Doc. 10.42).

Leopards were primarily traded as hunting trophies and skins during 1975-2010. Over this period, a total of 10 982 trophies and

1330 skins sourced from the wild were reportedly exported, whilst importers reported 14 651 wild trophies and 1764 skins in trade. Trade reported as skins is also likely to represent trophy hunted animals. The main importers were the U.S., Spain, Germany and France, as

Trade in trophies/skins was also reported by importers in greater numbers than by exporters. For the 10 most recent years (2001-2010), importers reported additional trophies/skins (as indicated in parentheses) than the following exporters: Namibia (+206), South Africa (+59), Tanzania (+1214), Zambia (+46) and Zimbabwe (+780).

Discrepancies are at least in part, likely to be accounted for by a lack of annual reports submitted by exporters in some years, but omissions are unlikely to fully explain the observed difference in reported exports/imports. Zimbabwe's trading partners collectively reported higher numbers of trade in leopard (trophies/skins) from the country in every year from 1997 to 2010. Zimbabwe did provide an annual report for each of these years.

Reporting of the source of specimens of *P. pardus* in trade has substantially improved over the lifetime of the Convention, although this appears to be a lesser but continued problem, particularly for trophies. Since 2000, a total of 272 trophies were reported exported with no source by two range States.

Based on U.S. price data, UNEP-WCMC estimated the monetary value of wild exports of *Panthera pardus* trophies for personal purposes and hunting trophies over the five years 2006-2010 to be USD845 400 (excluding skins and skulls).

6.3.2 Markhor (*Capra falconeri*)

Capra falconeri was listed in Appendix II of CITES on 01/07/75 (excluding the subspecies *C. f. chialtanensis*, *C. f. jerdoni* and *C. f. megaceros*). The species (including all subspecies) was transferred to Appendix I on 11/06/92. Wild-sourced markhor were primarily traded as hunting trophies from 1992-2010. Resolution Conf. 10.15 (Rev. CoP14) provides an annual quota of 12 markhor hunting trophies originating in Pakistan, and an export quota has been published since 1998. In accordance with that resolution, importing Parties should ensure that imports are primarily non-commercial. An analysis of reported trade in this taxa and comparison with permits issued indicates that the annual quotas have not been exceeded; although reported exports for 2009 totalled 13 trophies, annual reports indicate that two of these trophies comprised trophies allocated to previous years.

Whilst Pakistan reports the numbers of trophies exported, some importing countries report the same shipment as '1 skull and 1 skin' or '2 horns and 1 skin', hence importer-reported data may overestimate the actual number of individuals in trade.

Table 6.2: CITES export quotas for *Capra falconeri* hunting trophies from Pakistan and global exports, reported by importers and by the exporter.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Quota	6	6	6	6	6	12	12	12	12	12	12	12	12
Reported by Pakistan		3	4	6	2	5	10	8	8	12	6	13	8
Reported by the importers		6	5	6	5	6	9	9	14	11	15	12	7

In 2000, three wild-sourced trophies were reported exported for commercial purposes; one was reported for the same purpose by the importer in 2001.

6.3.3 Black rhinoceros (*Diceros bicornis*)

Diceros bicornis was listed in Appendix I in 1977 with all Rhinocerotidae spp. With the exception of specimens traded for scientific purposes, the species was primarily traded as

live individuals during 1975-2010, mainly for the purposes of reintroduction. Resolution Conf. 13.5 (Rev. CoP14) established export quotas for black rhinoceros hunting trophies, approving five trophies of adult males each from South Africa and Namibia. According to the exporter data (Table 6.7), South Africa appears to have exceeded the export quota in 2009, although three trophies exported in 2009 appear to be from a previous quota year. Namibia reported the export of only one horn product in 2006 and one trophy in 2009 since the quota was established; the trophy was reported by the importer in the following year.

Table 6.3: CITES export quota for *Diceros bicornis* hunting trophies from South Africa and global exports, reported by importers and the exporter.

	2005	2006	2007	2008	2009	2010
Quota	5	5	5	5	5	5
Reported by South Africa		4	1	3	7	0
Reported by the importers		1	1	1	3	1

6.3.4 Cheetah (*Acinonyx jubatus*)

Acinonyx jubatus was listed in Appendix I on 01/07/75 with an annotation to allow an annual

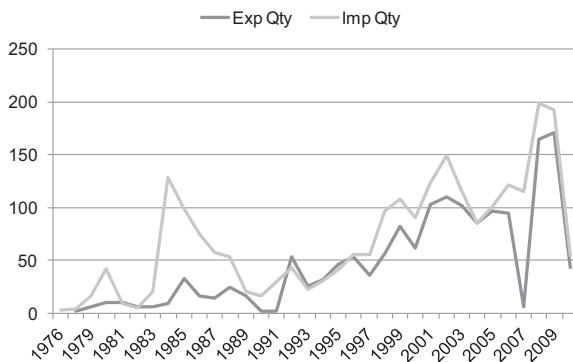


Figure 6.2: Direct trade in *Acinonyx jubatus* trophies, skins and skulls (source W and 'blank' only) originating in Namibia, 1975-2010 all purposes, as reported by exporters and importers.

export quota for live specimens and hunting trophies from Botswana (5), Namibia (150) and Zimbabwe (50). Botswana did not report any exports of *A. jubatus*, although importers reported imports of two live specimens, one skull and an additional five skins for scientific purposes. Zimbabwe reported exports well below the quota level in all years, with a maximum annual export of 12 trophies.

A total of 44 trophies, 8 skins and 2 skulls were reported exported for commercial purposes 1975-2010.

A summary of Namibia's quota management for *A. jubatus* is provided in Figure 6.2. Whilst 174 trophies were reported exported in 2009, 33 (mainly reported as skins and skulls) were noted in

the annual reports as from previous quotas years.

Conclusions on control of quotas

CoP-approved quotas have been generally complied with; in instances where quotas may have been exceeded, this may be the result of Parties cancelling and replacing permits, which are both subsequently included within annual reports, or trade being included from previous quota years.

7 Issues of potential concern

Two main areas of potential concern are considered; trade reported as confiscations/seizures, which may reflect enforcement issues, and commercial trade in wild Appendix I species which has occurred subject to reservations). Trade in large volumes of pre-Convention items is briefly discussed.

7.1 Confiscations/seizures

Enforcement is a key element in implementation of the Convention. Illegal trade in CITES specimens continues to represent a major challenge for enforcement authorities nationally, regionally and globally. One measure of the scale of illegal trade in CITES-listed species is the volume of seizure data reported by CITES Parties, although this also clearly relates to enforcement effort. Parties regularly report on confiscations/ seizures within their annual reports, which are included within the CITES Trade Database.

This section analyses trade reported by Parties under source code 'I' as defined in Resolution 12.3 (Rev. CoP15) (confiscated or seized specimens) for Appendix I species. It must be noted however, that this code is used inconsistently by Parties, with some Parties using it to record data on actual confiscated/ seized, whilst other Parties use it to report trade in legalised specimens that were previously confiscated/seized. Furthermore, some Parties do not report on seizures within annual reports, preferring to include data on significant cases of illegal trade within their biennial report. It therefore must be noted that the analysis may not provide a true representation of actual confiscations/seizures and is likely to be an underestimate.

Importer data only was considered, for direct and indirect trade, as the volume of confiscations/seizures reported by importers was far higher than for exporters (more than 450x the volume for seizures reported in number). A total of 79 importers reported confiscations/seizures during 1975-2010. The most frequently confiscated/seized Appendix I taxa, as determined from the CITES Trade database, and the relevant trade terms for each are summarised by class for animals and for all plants in tables 7.1-7.4. Confiscations/seizures are considered for the purposes of this analysis as illegal trade.

Mammals

Parties reported on confiscations/seizures of over 40 different mammal trade terms, which reflects the large variation in legal trade of mammals. Whilst very few live Appendix I mammals were reported as confiscated/seized over the period 1975-2010 (only 323), a major proportion of the apparently illicit trade in mammals was in derivatives, products derived from bone or horn, or ivory related products. The major Appendix I mammal taxa reported confiscated/seized by importers are summarised in Table 7.1. The main region of origin for illegal shipments of mammals and mammal products in trade was Asia, with the North America region reporting a high number of seizures.

Table 7.1: Main Appendix I mammal taxa reported confiscated/seized by importers 1975-2010 including trade terms exceeding 1000 units.

Taxon with IUCN Red List category ¹ and population trend ²	Main trade terms seized and quantities
Rhinocerotidae spp. (Rhinoceros species)*	Derivatives (395 272), horn products (27 312), oil (23 950)
<i>Panthera tigris</i> (Tiger) ^{EN} ↓	Derivatives (211 253), bone products (72 030), unspecified (1001)
Moschus spp. (Musk Deer spp)**	Derivatives (56 271)
<i>Loxodonta africana</i> (African elephant) ^{VU} ↑	Ivory carvings (17 847), Carvings (2455), Ivory pieces (2196), Small leather products (1074), Tusks (2535 kg)
<i>Rhinoceros unicornis</i> (Indian Rhinoceros) ^{VU} ↑	Horn products (24 002)
<i>Panthera pardus</i> (Leopard) ^{NT} ↓	Derivatives (18 148)
<i>Ursus thibetanus</i> (Asian Black Bear) ^{VU} ↓	Derivatives (16 495)
<i>Moschus moschiferus</i> (Siberian Musk Deer) ^{VU} ↓	Derivatives (10 737)
Elephantidae spp. (Elephant spp)***	Ivory carvings (7630)
<i>Equus africanus</i> (African Wild Ass) ^{CR} ↓	Derivatives (6997)

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

**Dicerorhinus sumatrensis* ^{CR} ↓; *Diceros bicornis* ^{CR} ↑; *Rhinoceros sondaicus* ^{CR} ?; *Rhinoceros unicornis* ^{VU} ↑; *Ceratotherium simum* ^{NT} ↑.

** *Moschus anhuiensis* ^{EN} ↓; *Moschus berezovskii* ^{EN} ↓; *Moschus chrysogaster* ^{EN} ↓; *Moschus cupreus* ^{EN} ↓; *Moschus fuscus* ^{EN} ↓; *Moschus leucogaster* ^{EN} ↓; *Moschus moschiferus* ^{VU} ↓.

****Loxodonta africana* ^{VU} ↑; *Elephas maximus* ^{EN} ↓.

Birds

In parallel with the legal trade in birds, live birds and feathers were the main trade terms reported confiscated/seized by importers. Overall, the illegal trade in live birds was more prevalent than for mammals, with 1334 live birds seized. The predominant families were Psittacidae and Falconidae, with 856 and 293 reported confiscations/seizures respectively. Relatively few bird taxa were identified as of possible significance in terms of illegal trade (Table 7.2) when compared to other taxonomic groups.

As reported by importers, the main regions of origin for illegal shipments of birds were North America and Central and South America and the Caribbean, with North America also reporting the highest number of seizures.

Table 7.2: Main Appendix I bird taxa reported confiscate/seized by importers 1975-2010, including key trade terms (live birds exceeding 100 units, feathers exceeding 500 units).

Taxon with IUCN Red List category ¹ and population trend ²	Main trade terms seized and quantities
<i>Haliaeetus leucocephalus</i> (Bald Eagle) ^{LC} ↑	Feathers (898 and 4 kg), Bones (384)
<i>Ara macao</i> (Scarlet macaw) ^{LC} ↓	Feathers (683), Live (125)
Falconidae spp.*	Live (135)
<i>Amazona oratrix</i> (Yellow-headed Amazon) ^{EN} ↓	Live (111)

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

Reptiles

Parties reported seizures in 31 reptile trade terms, which again is reflective of a varied legal trade in this taxonomic group. Perhaps due to their relatively small size and ease of smuggling, eggs were the most highly seized trade term. Over 53 000 eggs from the family Cheloniidae (marine turtles) were reported seized. Marine turtle eggs are a delicacy and are widely consumed globally. Overall, marine turtles also represented the key family within illegal trade for a number of other terms (small leather products, carvings, carapaces, derivatives, carvings, live, bodies, oil, meat, specimens and unspecified terms and others). In total, over 4600 live Appendix I reptiles were reported confiscated/sized, with 71% comprising Cheloniidae spp. Table 7.3 summarises the major reptile taxa reported confiscated/ seized by importers.

As reported by importers, the main region of origin for illegal shipments of reptiles and their products in trade was Central and South America and the Caribbean, with the North America region reporting the highest number of seizures.

Table 7.3: Main Appendix I reptile taxa reported confiscated/seized by importers 1975-2010, including trade terms exceeding 1000 units.

Taxon with IUCN Red List category ¹ and population trend ²	Main trade terms seized and quantities
Cheloniidae spp.*	Eggs (49 412), Small leather products (11 799), Derivatives (6262), Carvings (5592), Carapace (2643), Oil (1526), Meat (1085 kg)
<i>Chelonia mydas</i> (Green Turtle) ^{EN} ↓	Unspecified (12 851), Live (2289), Small leather products (2248), Eggs (2,017), Carapace (1381), Scales (8413 kg), Meat (6887 kg)
<i>Eretmochelys imbricata</i> (Hawksbill Turtle) ^{CR} ↓	Carvings (6225), Carapace (1364), Unspecified (1304), Small leather products (1204), Bodies (1185)
<i>Lepidochelys olivacea</i> (Olive Ridley) ^{VU} ↓	Specimens (1595)
<i>Osteolaemus tetraspis</i> (African Dwarf Crocodile) ^{VU} (Needs updating)	Small leather products (2725)
<i>Crocodylus niloticus</i> (Nile Crocodile) ^{LC} (Needs updating)	Small leather products (1518)
<i>Pangshura tecta</i> (Indian Roofed Turtle) ^{LC} (Needs updating)	Carapace (1902)

¹ LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

**Caretta caretta* ^{EN} (needs updating); *Chelonia mydas* ^{EN} ↓, *Eretmochelys imbricata* ^{CR} ↓; *Lepidochelys olivacea* ^{VU} ↓, *Natator depressus* ^{DD} (needs updating).

Amphibians and Fish

There were very few reported confiscations/seizures of Appendix I amphibians or fish during 1975-2010. Perhaps the only notable apparent illegal trade in amphibians related to 93 live individuals of the Chinese endemic *Andrias davidianus* (Chinese Giant Salamander), 90 of which were reported by China, and were reported as exported from Hong Kong, SAR.

Similarly, only one species and one order were perhaps notable in terms of fish confiscations/ seizures; 604 live specimens of *Scleropages formosus* (Golden Dragon Fish) from 12 exporting Parties were reported seized by seven importers. Additionally just over 11

kg of caviar derived from Appendix I Acipenseriformes spp. was reported seized by importers.

Plants

Whilst importers reported plant confiscations/seizures for 15 different plant trade terms, only five or six types of specimens appeared to be prevalent in illegal trade 1975-2010, with derivatives being by far the most predominant. Derivatives, medicines and extract mainly comprised species of the genus *Saussurea* (Table 7.4). Total confiscations/seizures of live Appendix I plants (over 18 000 individuals) were more numerous than for all animals combined (approximately 7000 individuals). Around three-quarters of live plant seizures represented Orchidaceae spp. Other plant confiscations/seizures included over 160,000 timber carvings and 12 000 seeds. As reported by importers, the main region of origin for illegal shipments of plants and plant products in trade was Asia. Europe reported the highest number of seizures.

Table 7.4: Main Appendix I plant taxa reported seized by importers 1975-2010, including trade terms exceeding 1000 units.

Taxon with IUCN Red List category ¹ and population trend ²	Main trade terms seized and quantities
<i>Saussurea costus</i> (Costus Root) (Not evaluated)	Derivatives (8 502 627 and 4218 kg), Medicine (31 667) Extract (4245 kg)
<i>Dalbergia nigra</i> (Brazilian Rosewood) ^{VU} (Needs updating)	Carvings (160 000 kg)
<i>Paphiopedilum</i> spp.*	Live (12 890)
<i>Saussurea</i> spp. (Not evaluated)	Derivatives (5415)
<i>Encephalartos ituriensis</i> (Ituri Forest Cycad). ^{NT→}	Seeds (3720)
<i>Dendrobium cruentum</i> (Not evaluated)	Derivatives (2623)
<i>Encephalartos barteri</i> ^{VU↓}	Seeds (1952)
<i>Agave parviflora</i> (Santa Cruz Striped Agave) (Not evaluated)	Seeds (1030)

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

* *Paphiopedilum adductum* ^{CR↓}; *Paphiopedilum armeniacum* ^{EN}; *Paphiopedilum barbigerum* ^{EN}; *Paphiopedilum ciliolare* ^{EN↓}; *Paphiopedilum dianthum* ^{EN}; *Paphiopedilum emersonii* ^{CR}; *Paphiopedilum fowliei* ^{CR}; *Paphiopedilum tigrinum* ^{CR}; *Paphiopedilum urbanianum* ^{CR↓}.

Conclusions on confiscations/seizure data

It is clear from the CITES Trade data that confiscations or seizures (and therefore it is assumed illegal trade) of Appendix I species was more prevalent for mammals and reptiles than for other animal groups during 1975-2010. In general, this reflects higher levels of legal trade in these taxa. Within these two classes some taxa appeared more prevalent in illegal trade; these were particularly high profile species, Rhinocerotidae spp., Elephantidae spp., *Panthera tigris* and Cheloniidae spp.

Tourism is likely to represent a key problem for seizures of many elephant ivory and sea turtle products; many tourists take home small souvenirs of parts and derivatives of these charismatic Appendix I species. Lam *et al.* (2012) reported that the illegal trade of marine turtle products by tourists continues to represent a serious and continuing problem.

For mammals and plants in particular, a substantial proportion of seizures are likely to include Traditional East Asian Medicines (TEAMs). Indeed Asia was the major exporting region for these taxonomic groups. High profile cases such as the seizure of 140 kg of bones of *Panthera tigris* (Tiger) in 2004 including 24 skulls was highlighted by TRAFFIC (2012), as well as numerous other seizures of TEAMs in Asia and globally.

7.2 Trade subject to reservations

CITES Parties may enter a reservation with respect to any species included in Appendices I, II and III, either when they become a Party or within 90 days of amendments to the Appendices, in accordance with Articles XV, XVI and XXIII. There are currently 83 Appendix I animal species and 11 plant species subject to a reservation by one or more Party. In accordance with Resolution Conf. 4.25 (Rev. CoP14), Appendix I species subject to a reservation should be treated as if they were listed in Appendix II for all purposes, including documentation and control.

Trade in species subject to reservations which occurred in notable quantities for commercial purposes during 1975-2010 is highlighted in Table 7.5. Where conservation status appears to be unfavourable, this commercial trade and accordingly, the non-detriment findings on which exports have been permitted, may require additional scrutiny through CITES procedures.

Table 7.5: Commercial trade in Appendix I species subject to reservations (res.) as reported by exporters at notable levels, 1975-2010.

Taxon with IUCN Red List category ¹ and population trend ²	Years	Exporter	Main Importer(s)	Term	Sum of Exp Qty	Exporter res. details
<i>Balaenoptera physalus</i> (Fin whale) EN ?	2000-2010	Iceland	Japan	Meat	80000 kg	Res. entered 02/04/00
<i>Balaenoptera acutorostrata</i> (Minke whale) LC→	2000-2010	Iceland	Faeroe Islands	Meat	1500 kg	Res. entered 02/04/00
	1981-2000	Norway	Iceland, Faeroe Islands & Japan	Meat	58875kg	Res. entered 06/06/81
<i>Loxodonta africana</i> (African elephant) VU↑	1990-2010	Malawi	South Africa	Ivory carvings	650 and 14.5 kg	Res. entered 18/01/90
	1990-1997	Zimbabwe	China	Ivory carvings	247	Res. entered 18/01/90 and withdrawn 17/09/97
	1990-1997	Zimbabwe	United States of America	Tusks	715 and 2764.8 kg	

Taxon with IUCN Red List category ¹ and population trend ²	Years	Exporter	Main Importer(s)	Term	Sum of Exp Qty	Exporter res. details
<i>Ara macao</i> (Scarlet macaw) LC↓	1985-2010	Suriname	Qatar, Thailand, South Africa & Mexico	Live	742	Res. entered 01/08/85
<i>Fitzroya cupressoides</i> (Chilean false larch) EN (needs updating)	1987-2004	Chile	France	Timber	1019 m ³ 43070 (no units)	Res. entered 22/10/87 for coastal population of Chile and withdrawn 1/12/04 (Littoral Cordillera of Chile)
	1985-2010	Chile	Paraguay	Carvings	1000	

¹LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

8 Reporting of Appendix I trade and guidance for Parties on completion of annual reports

A number of irregularities were identified in the trade data for Appendix I species which appear to be due to reporting errors including:

- Trade reported at higher taxon levels, for live specimens, parts and derivatives, particularly concerning taxa which are included in the Appendices at a higher taxon level (Appendix I trade in many plants taxa, live *Chinchillia* spp. and Falconidae spp., bodies of Cheloniidae spp., and derivatives of *Rhinocerotidae* spp., was reported at higher taxon levels);
- Commercial trade in animal species reported under source code D from exporting countries for which there are no operations included in the Secretariat's Register for the species concerned (in accordance with Resolution Conf. 12.10 (Rev. CoP15);
- Direct trade in wild-sourced specimens where the exporter is not recorded as a recognised range State for the species in the UNEP-WCMC Species Database/CITES Trade Database;
- For split-listed species, trade reported as Appendix I, but the species from the range State concerned is included in Appendix II or is non-CITES;
- Lack of the required information as described in Annex 1 of Resolution Conf.12.3 (Rev. CoP15) (Permits and Certificates) relating to source and purpose codes (and therefore representing issuance of invalid documents).

Some additional details of these reporting discrepancies can be found in Annex 3.

8.1. Specific guidance for Parties on completion of annual reports

1. Annual reports should be submitted by the deadline in Resolution Conf. 11.17 (Rev. CoP14). This is important in order to accurately assess the sustainability of trade and contribute to key CITES processes such as the Review of Significant Trade. Submission of annual reports is variable and, for the years 2006-9, 63% were submitted within six months of the deadline. Non-submission of annual reports can also result in large discrepancies between exporter and importer-reported trade..
2. Parties should ensure that information relating to the source of specimens in trade (wild, captive-bred etc.) and purpose of trade (e.g. commercial or scientific) is provided within CITES annual reports. The source of specimens is critical in determining the conservation impact of trade and the purpose of the trade can demonstrate compliance. Reporting of this information within annual reports has much improved in more recent years, with less than 1% of trade transactions issued without a source specified in 1996-2010; however, almost 8% of trade was reported without a purpose code.
3. When issuing permits and certificates, Parties should only use higher taxon names where the specimens meet the criteria in Resolution Conference 12.3 (Rev. CoP15).
4. Whenever possible, the recommended preferred term and unit combinations as described in the 'Guidelines for the preparation and submission of CITES annual reports' should be used. This helps standardise the data and allows for more meaningful analyses of the trade. Table 8.1 provides a list of term/unit combinations

misreported for Appendix I species, along with the recommended preferred and alternative units.

Table 8.1: Term/unit combinations commonly misreported (1975-2010).

Group	Term	Units reported by Parties	Preferred & alternative units in CITES Guidelines
Mammals	skin pieces skins trophies derivatives specimens hair	no. kg, m kg flasks, no. flasks no.	kg no. no. kg/l kg/l/ml/no. kg/g
Reptiles	specimens	no. flasks	kg/l/ml/no.
Plants	culture derivatives live seeds	no. no. flasks, kg no.	no. of flasks kg/l no. kg
Timber	carvings timber timber pieces	no. number, m, m ² no.	kg/ m ³ m ³ /kg not a standard term

5. Authorities of importing countries should consult with exporting countries where discrepancies arise in relation to wild-sourced species being exported from countries where these species are not known occur naturally in order to identify whether the trade represents wild specimens, re-exported terms or introduced populations.

Administrative matters

6. The basis of reporting (whether on actual trade or permits issued) should be specified in annual reports. Whenever possible, data should be collected on the basis of actual trade, rather than on the basis of permits and certificates issued in order to avoid overestimation of trade volumes.
7. The date of permit issuance, in particular the date of import permits, should be included in annual reports, when possible. This will help detect and clarify possible infractions relating to trade suspensions.
8. Where possible, the use of thousand separators in the quantity field in electronically-submitted annual reports should be avoided, and use of either a comma or a point as a decimal separator should be consistent.
9. Hunting trophies should be reported in a more consistent basis, in accordance with the Guidelines for the presentation and submission of CITES annual reports distributed with CITES Notification to the Parties No. 2011/019. In particular, all the parts that reasonably add up to one animal (e.g., horns (2), skull, cape, backskin, tail and feet (4)) should be reported as one trophy when shipped together. Provided that at least two trophy parts of an animal are shipped together (e.g. skin and skull), the same rule applies and the shipment should be reported as one trophy. When any one of these parts are shipped alone, however, the trade should be recorded individually on permits (e.g. one skin).

9. Recommendations

- The compliance issues identified through this analysis of over 35 years of trade in Appendix I-listed species are of concern. Wild-sourced commercial trade has taken place where no reservation has been entered. Article XIII of the Convention lays down procedures to be initiated by the Secretariat where Parties are non-compliant with the provisions of the Convention. Resolution Conf. 11.3 (Rev. CoP 15) on 'Compliance and Enforcement' directs Parties to strengthen compliance, control and enforcement and provides a mandate for the Secretariat for enforcement activities.

Whilst enhanced compliance could be achieved through improved vigilance and checking of permits against reservations and suspensions, in practice this can be arduous with manual systems. Development of an automated system for facilitating these and other checks could help to reduce compliance issues.

- Reporting issues were also evident from the analysis. For example, reporting at higher taxon levels, reporting of Appendix I incorrectly for split-listed species, omission of required information outlined in Resolution Conf. 12.3 (Rev. CoP15), deviations from recommended term and unit combinations, using non-standard nomenclature, reporting of trade in captive bred specimens (source D) where no operations are included in the CITES register, and direct wild trade from apparently non-range States). To address these reporting issues it is recommended that Parties adhere to the specific guidance on reporting outlined in section 8 (and contained within Notification 2011/019 Annex) and ensure they comply with Res. Conf. 12.3 (Rev. CoP15) on Permits and Certificates and Res. Conf. 11.17 (Rev. CoP14) on National Reports.
- Development of an online Integrated Information Management System for national CITES permitting procedures linked to the CITES Trade and Species databases managed by UNEP-WCMC could address many of the reporting issues that continue to be problematic for Parties. The system could also address compliance issues where automated checks occur at the point of data entry or checking by the Management Authority of issue. An integrated management tool could also provide a means for Parties to submit their annual reports to the CITES trade database, assisting with reporting obligations and increasing the value of trade data by allowing analysis of data in near-real time.
- Reservations on the inclusion of species listed in Appendix I, whereby they are treated as specimens listed in Appendix II, can result in sizeable levels of trade and may undermine the effectiveness Appendix I listings. Where trade levels may be of concern it is recommended that the Animals and Plants Committees consider whether further review is necessary to ensure that non-detriment findings are scientifically robust. Specific Appendix I species subject to current reservations that may warrant future consideration include *Ara macao* (Suriname), *Balaenoptera physalus* (Iceland), and *Fitzroya cupressoides* (Chile).
- Seizures of tourist souvenirs such as ivory carvings and marine turtle carapace products remain problematic but as Parties do not all report seizures, the full extent of illegal trade is not evident from the CITES data. It is recommended that the scope of the database developed by the German Customs Administration and Federal

Agency for Nature Conservation (BfN) specifically targeted to German tourists (http://www.artenschutz-online.de/artenschutz_im_urlaub/laenderauswahl.php?kontinent=6) is expanded so that coverage is global, in order to further reduce the impact of this illegal trade on wild populations. This could include data from both the CITES Trade Database and from other national Enforcement authorities.

- Captive breeding and artificial propagation of Appendix I-listed taxa have grown considerably since the Convention entered into force, often involving Parties that are not range States for the species in question. Whilst this may reduce the direct pressure of trade from wild populations, it also removes the oversight that CITES affords Appendix II-listed species in trade and may remove the opportunity to generate incentives for conservation and to contribute to local livelihoods. Resolution Conf. 12.10 (Rev Cop15) recommends that when captive breeding operations are added to the Secretariat's register the Management Authority should satisfy itself that the captive-breeding operation will make a continuing meaningful contribution according to the conservation needs of the species concerned. In addition, Resolution 13.9 urges Parties with ex-situ breeding operations that breed Appendix I species to seek cooperative measures that would support in-situ conservation. An assessment of the conservation benefits associated with such operations could assess implementation of this guidance and develop lessons for other such operations.
- Apparently large amounts of trade in derivatives, feathers and scientific specimens are recorded, but the significance of this trade and its recording is unclear. Where production of derivatives or samples results in impacts in wild populations then tracking trade can be beneficial. Further work is required to develop suitably reliable conversion factors to assess the impacts of this trade. However, in some cases the burden of tracking may outweigh the benefits. As the Plants Committee has recently conducted a study of the trade in reporting of artificially propagated plants, a study of the cost-effectiveness of reporting this trade could be worthwhile.
- CITES recognises the multiple benefits of trade in wildlife in Resolution Conf. 8.3 (Rev. CoP13), and this study highlights the economic value of certain Appendix I species (some captive bred birds exported from non-range States, and low volume but high value trade in wild leopard hunting trophies). However, no systematic and comprehensive economic valuation of CITES trade exists, and it is recommended that valuation methodologies are further refined to assess the overall contribution that trade in all CITES-listed species provides to exporting countries.

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Annex 1. Terminology

Table 1: Description of specimens and units of quantity

Description	Code	Preferred unit	Alternative unit	Explanation
Baleen	BAL	kg	no.	Whalebone
Bark	BAR	kg		Tree bark (raw, dried or powdered; unprocessed)
Body	BOD	no.	kg	Substantially whole dead animals, including fresh or processed fish, stuffed turtles, preserved butterflies, reptiles in alcohol, whole stuffed hunting trophies, etc.
Bone	BON	kg	no.	Bones, including jaws
Calipee	CAL	kg		Calipee or calipash (turtle cartilage for soup)
Carapace	CAP	no.	kg	Raw or unworked whole shells of Testudines species
Carving	CAR	kg	m ³	Carvings (including wood, and including finished wood products such as furniture, musical instruments and handicrafts). NB: there are some species from which more than one type of product may be carved (e.g. horn and bone); where necessary, the description should therefore indicate the type of product (e.g. horn carving)
Caviar	CAV	kg		Unfertilized dead processed eggs from all species of Acipenseriformes; also known as roe
Chips	CHP	kg		Chips of timber, especially <i>Aquilaria</i> spp., <i>Gyrinops</i> spp. and <i>Pterocarpus santalinus</i>
Claw	CLA	no.	kg	Claws – e.g. of Felidae, Ursidae or Crocodylia (NB: 'turtle claws' are usually scales and not real claws)
Cloth	CLO	m ²	kg	Cloth – if the cloth is not made entirely from the hair of a CITES species, the weight of hair of the species concerned should instead, if possible, be recorded under 'HA'
Coral (raw)	COR	kg	no.	Coral, raw or unworked. NB: the trade should be recorded by number of pieces only if the coral specimens are transported in water
Culture	CUL	no. of flasks, ect.		Cultures of artificially propagated plants
Derivatives	DER	kg/l		Derivatives (other than those included elsewhere in this table)
Dried plants	DPL	no.		Dried plants – e.g. herbarium specimens
Ear	EAR	no.		Ears – usually elephant
Egg	EGG	no.	kg	Whole dead or blown eggs (see also 'caviar')
Egg (live)	EGL	no.	kg	Live fertilized eggs – usually birds and reptiles but includes fish and invertebrates
Eggshell	SHE	g/kg		Raw or unworked eggshell except whole eggs
Extract	EXT	kg	l	Extract – usually plant extracts
Feather	FEA	kg/ no. of	no.	Feathers – in the case of objects (e.g. pictures) made of feathers, record the number of objects

Description	Code	Preferred unit	Alternative unit	Explanation
		wings		
Fibre	FIB	kg	m	Fibres – e.g. plant fibre but includes strings of tennis rackets
Fin	FIN	kg		Fresh, frozen or dried fins and parts of fins
Fingerlings	FIG	kg	no.	Juvenile fish of one or two years of age for the aquarium trade, hatcheries or for release operations
Flower	FLO	kg		Flowers
Flower pots	FPT	no.		Flower pots made from parts of a plant – e.g. treefern fibres (NB: live plants traded in so-called 'community pots' should be recorded as 'live plants', not as flower pots)
Frog legs	LEG	kg		Frog legs
Fruit	FRU	kg		Fruit
Foot	FOO	no.		Feet – e.g. of elephant, rhinoceros, hippopotamus, lion, crocodile, etc.
Gall	GAL	kg		Gall
Gall bladder	GAB	no.	kg	Gall bladder
Garment	GAR	no.		Garments – including gloves and hats but not shoes. Includes trimming or decoration on garments
Genitalia	GEN	kg	no.	Castrates and dried penes
Graft rootstock	GRS	no.		Graft rootstocks (without the grafts)
Hair	HAI	kg	g	Hair – includes all animal hair, e.g. of elephant, yak, vicuña, guanaco
Horn	HOR	no.	kg	Horns – includes antlers
Leather product (large)	LPL	no.		Large manufactured products of leather – e.g. briefcases, furniture, suitcases, travel trunks
Leather product (small)	LPS	no.		Small manufactured products of leather – e.g. belts, braces, bicycle saddles, cheque book or credit card holders, earrings, handbags, key fobs, notebooks, purses, shoes, tobacco pouches, wallets, watch-straps
Live	LIV	no.	kg	Live animals and plants
Leaf	LVS	kg	no.	Leaves
logs	LOG	m ³		All wood in the rough, whether or not stripped of bark or sapwood, or roughly squared, for processing notably into sawn wood, pulpwood or veneer sheets. NB: trade in logs of special purpose timbers traded by weight (e.g. <i>lignum vitae</i> , <i>Guaiaicum</i> spp.) should be recorded in kg
Meat	MEA	kg		Meat, including flesh of fish if not whole (see 'body'), fresh or unprocessed meat as well as processed meat (e.g. smoked, raw, dried, frozen or tinned)
Medicine	MED	kg/l		Medicine

Description	Code	Preferred unit	Alternative unit	Explanation
Musk	MUS	g		Musk
Oil	OIL	kg	l	Oil – e.g. from turtles, seals, whales, fish, various plants
Piece –bone	BOP	kg		Pieces of bone, not manufactured
Piece – horn	HOP	kg		Pieces of horn, not manufactured – includes scrap
Piece – ivory	IVP	kg		Ivory pieces, not manufactured – includes scrap
Plate	PLA	m ²		Plates of fur skins – includes rugs if made of several skins
Plywood	PLY	m ²	m ³	Material consisting of three or more sheets of wood glued and pressed one on the other and generally disposed so that the grains of successive layers are at an angle
Powder	POW	kg		Powder
Root	ROO	no.	kg	Roots, bulbs, corms or tubers NB: For the agarwood-producing taxa <i>Aquilaria</i> spp. and <i>Gyrinops</i> spp., the preferred unit is 'kilograms'. The alternative unit is 'number'.
Sawn wood	SAW	m ³		Wood simply sawn lengthwise or produced by a profile-chipping process; normally exceeds 6mm in thickness. NB: trade in sawn wood of special purpose timbers traded by weight (e.g. <i>lignum vitae</i> , <i>Guaiacum</i> spp.) should be recorded in kg
Scale	SCA	kg		Scales – e.g. of turtle, other reptiles, fish, Pangolin
Seed	SEE	kg		Seeds
Shell	SHE	no.	kg	Raw or unworked shell of molluscs
Side	SID	no.		Sides or flanks of skins; does not include crocodilian Tinga frames (see under 'skin')
Skeleton	SKE	no.		Substantially whole skeletons
Skin	SKI	no.		Substantially whole skins, raw or tanned, including crocodilian Tinga frames, external body lining, with or without scales
Skin piece	SKP	kg		Skin pieces – including scraps, raw or tanned
Skull	SKU	no.		Skulls
Soup	SOU	kg	l	Soups – e.g. of turtle
Specimen	SPE	kg/l/ml/no.		Scientific specimens – includes blood, tissue (e.g. kidney, spleen, etc.), histological preparations, preserved museum specimens, etc.
Stem	STE	no.	kg	Plant stems NB: For the agarwood-producing taxa <i>Aquilaria</i> spp. and <i>Gyrinops</i> spp., the preferred unit is 'kilograms'. The alternative unit is 'number'.
Swim bladder	SWI	kg		Hydrostatic organ, including isinglass / sturgeon glue
Tail	TAI	no.	kg	Tails – e.g. of caiman (for leather) or fox (for garment trimming, collars, boas, etc.)
Tooth	TEE	no.	kg	Teeth – e.g. of whale, lion, hippopotamus, crocodile, etc.

Description	Code	Preferred unit	Alternative unit	Explanation
Timber	TIM	m ³	kg	Raw timber except saw-logs and sawn wood
Trophy	TRO	no.		Trophy – all the trophy parts of one animal if they are exported together: e.g. horns (2), skull, cape, backskin, tail and feet (i.e. ten specimens) constitute one trophy. But if, for example, the skull and horns are the only specimens of an animal that are exported, then these items together should be recorded as one trophy. Otherwise the items should be recorded separately. A whole stuffed body is recorded under 'BOD'. A skin alone is recorded under 'SKI'
Tusk	TUS	no.	kg	Substantially whole tusks, whether or not worked. Includes tusks of elephant, hippopotamus, walrus, narwhal, but not other teeth
Veneer sheets - Rotary veneer - Sliced veneer	VEN VEN	m ³ m ²	kg kg	Thin layers or sheets of wood of uniform thickness, usually 6mm or less in thickness, usually peeled (rotary veneer) or sliced (sliced veneer), for use in making plywood, for veneering furniture, veneer containers, etc.
Wax	WAX	kg		Wax, including ambergris
Whole	WHO	kg	no.	Entire animal or plant (dead or alive)
Key to units (equivalent non metric measurements may be used) g = grams kg = kilograms l = litres cm³ = cubic centimetres ml = millilitres m = metres m² = square metres m³ = cubic metres no. = number of specimens				

Annex 2. Species transferred from Appendix I to Appendix II.

Class	Taxon
Mammals (21)	<i>Bison bison athabasca</i> (Wood Bison)
	<i>Damaliscus dorcas dorcas</i> (Blesbok)
	<i>Kobus leche</i> (Lechwe)
	<i>Vicugna vicugna</i> (Vicuña) – Populations of Argentina, Bolivia, Chile and Peru.
	<i>Prionailurus bengalensis bengalensis</i> (Leopard Cat) – Population of China
	<i>Lynx rufa escuinpae</i> (Bobcat)
	<i>Hyaena brunnea</i> (Brown Hyaena)
	<i>Mirounga angustirostris</i> (Northern Elephant Seal)
	<i>Ursus arctos</i> (Brown Bear) – population of Italy
	<i>Planigale tenuirostris</i> (Narrow-nosed Planigale)
	<i>Antechinomys laniger</i> (Kulitaar)
	<i>Macropus parma</i> (Parma Wallaby)
	<i>Wyulda squamicaudata</i> (Scaly-tailed Possum)
	<i>Burramys parvus</i> (Mountain Pygmy-possum)
	<i>Ceratotherium simum simum</i> (Southern White Rhinoceros) – Populations of South Africa and Swaziland.
	<i>Manis temminckii</i> (Cape Pangolin)
	<i>Cebuella pygmaea</i> (Pygmy Marmoset)
	<i>Loxodonta africana</i> (African Elephant) Populations of Botswana, Zimbabwe, Namibia and South Africa.
<i>Pseudomys shortridgei</i> (Heath Rat)	
<i>Pseudomys fumeus</i> (Smoky Mouse)	
<i>Notomys aquilo</i> (Northern Hopping-mouse)	
Birds (5)	<i>Haliaeetus leucocephalus</i> (Bald Eagle)
	<i>Falco ruscicolus</i> (Gyr Falcon) – Population of North America*
	<i>Psophodes nigrogularis</i> (Black-throated Whipbird)
	<i>Neophema splendida</i> (Scarlet-chested Parrot)
	<i>Pterocnemia pennata pennata</i> (Lesser Rhea) - Populations of Argentina and Bolivia.
Reptiles (9)	<i>Alligator mississippiensis</i> (American Alligator)
	<i>Caiman latirostris</i> (Broad-snouted Caiman) - Population of Argentina.
	<i>Melanosuchus niger</i> (Black Caiman) - Populations of Ecuador and Brazil.
	<i>Crocodylus acutus</i> (American Crocodile) - Population of Cuba.
	<i>Crocodylus cataphractus</i> (African Slender-snouted Crocodile) - Population of the Peoples Republic of Congo*
	<i>Crocodylus niloticus</i> (Nile Crocodile) - Populations of Egypt, Namibia, Mozambique, Ethiopia, Somalia, Uganda and Zimbabwe.
	<i>Crocodylus porosus</i> (Salt-water Crocodile) - Population of Australia.
	<i>Osteolaemus tetraspis</i> (African Dwarf Crocodile) - Population of the Peoples Republic of Congo*
	<i>Chelonia mydas</i> (Green Turtle) - Population of Suriname*

Class	Taxon
Fish (2)	<i>Acipenser oxyrinchus</i> (Atlantic Sturgeon)
	<i>Scleropages formosus</i> (Golden Dragon Fish) - Population of Indonesia*
Plants (20)	<i>Nolina interrata</i> (Dehesa Bear-grass)
	<i>Pachypodium brevicaule</i>
	<i>Pachypodium namaquanum</i> (Elephant's Trunk)
	<i>Disocactus macdougalli</i> (McDougal's Cactus)
	<i>Mammillaria plumose</i>
	<i>Leuchtenbergia principis</i>
	<i>Dudleya stolonifera</i> (Laguna Beach Liveforever)
	<i>Dudleya traskiae</i> (Santa Barbara Island Liveforever)
	<i>Fitzroya cupressoides</i> (Chilean False Larch) - Coastal population of Chile*
	<i>Euphorbia primulifolia</i>
	<i>Aloe thorncroftii</i>
	<i>Cattleya skinneri</i>
	<i>Cattleya trianaei</i>
	<i>Didickea cunninghamii</i>
	<i>Lycaste skinneri</i> var. <i>alba</i>
	<i>Vanda coerulea</i> (Blue Vanda)
	<i>Dypsis decipiens</i>
	<i>Orothamnus zeyheri</i> (Marsh Rose)
	<i>Protea odorata</i> (Ground-rose)
	<i>Welwitschia mirabilis</i>

*Subsequently transferred back to Appendix I.

Annex 3. Discrepancies relating to trade originating from CITES registered breeders (source code D).

Twelve Parties issued permits for direct trade in animal species using source code D which did not have an operation included within the CITES Register for the species concerned, as provided in the table below.

Taxon with IUCN Red List category ¹ and population trend ²	Exporter	Term	Purpose	Quantity
<i>Nasalis larvatus</i> (Proboscis Monkey) EN↓	Malaysia	Specimens	Scientific	33
<i>Ara ambiguus</i> (Great Green Macaw) EN↓	Costa Rica	Feathers	Personal	88
<i>Ara macao</i> (Scarlet Macaw) LC↓	Costa Rica	Feathers	Personal	87
<i>Ara macao</i> (Scarlet Macaw) LC↓	South Africa	Live	Commercial	37
<i>Cyanoramphus novaezelandiae</i> (Red-fronted Parakeet) VU↓	Belgium	Live	Commercial	100
<i>Cyanoramphus novaezelandiae</i> (Red-fronted Parakeet) VU↓	Serbia and Montenegro	Live	Commercial	300
<i>Falco peregrinus</i> (Peregrine Falcon) LC→	Austria	Live	Commercial	32
<i>Falco peregrinus pealei</i> (Peregrine Falcon) LC→ (assessed as <i>F. peregrinus</i>)	United States of America	Live	Commercial	43
<i>Falco rusticolus</i> (Gyr Falcon) LC→	Germany	Live	Commercial	670
<i>Guaruba guarouba</i> (Golden Parakeet) EN↓	Brazil	Live	Commercial	33
<i>Crocodylus niloticus</i> (Nile Crocodile) LC (Needs updating)	Namibia	Live	Commercial	360
<i>Crocodylus siamensis</i> (Siamese Crocodile) CR↓	Philippines	Small leather products	Commercial	54
<i>Scleropages formosus</i> (Golden Dragon Fish) EN↓	Macao, Province of China	Live	Commercial	300

¹ LC Least Concern, NT Near Threatened, VU Vulnerable, EN Endangered, CR Critically Endangered, EW Extinct in the Wild, EX Extinct; ² ↓ decreasing, → stable, ↑ increasing, ? unclear

Three Parties which have reported direct trade in source D specimens for species for which there are no CITES registered breeders, are Member States of the European Union (Belgium, Austria and Germany). Under several EU Regulations in place from 1997 to 2012, the EU implemented the use of source code D slightly differently; defining it as “Annex A animals bred in captivity for commercial purposes and Annex A plants artificially propagated for commercial purposes” in accordance with relevant chapters of Commission Regulations (EC) Nos. 939/97, 1808/2001 and 865/2006.