WORLD TRADE IN CROCODILIAN SKINS, 2003-2005

Prepared as part of the International
Alligator and Crocodile Trade Study

by

John Caldwell

United Nations Environment Programme –
World Conservation Monitoring Centre

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Prepared and produced by: John Caldwell, UNEP World Conservation Monitoring Centre, Cambridge, UK

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Introduction

This is the fourteenth report produced by UNEP-WCMC for the International Alligator and Crocodile Trade Study (IACTS) and examines the international trade in crocodilian skins from 1980 to 2005. As in the previous reports, the data used in this report have been obtained from the *CITES Trade Database* that UNEP-WCMC maintains on behalf of the CITES Secretariat, with additional information provided by the Crocodile Farmers Association of Zimbabwe. The present report is intended to update the earlier reports by detailed analysis of information for the years 2004 and 2005. It also attempts to identify problem areas and to recommend, where possible, workable solutions.

As in the IACTS reports for 2001 - 2004, this report presents information on trade levels in classic skins (alligators and true crocodiles) and caimans and also trade in other products such as live animals and meat.

Methods

This report is based on an analysis of the annual reports submitted by the Parties to CITES for all years up to 2005, and if applicable, 2006. A list of annual reports for 2003-2005 that had been received at UNEP-WCMC at the time of writing is given in Table 1. In order to be comparable with previous IACTS reports, all trade in whole skins and sides of crocodilian species has been analysed with two sides being considered to be equivalent to one skin. Trade in skins reported in units of weight, area, length or sub-units such as 'tails' has been mainly excluded. Wherever possible, data reported by the producer countries have been used in preference to that reported by importing countries because small differences in the manner of reporting, or the time lag between export and import, may lead to double-counting and thus an overestimation of trade volume. However where producer countries have failed to submit annual report data on exports of crocodilians, importers' data have been used. Many of the transactions have been analysed at the export permit level. As with previous reports that covered the years 1995-2004, re-export trade has not been included in the estimation of annual production.

Limitations of data

Late submission or complete failure to submit CITES annual reports continue to be the biggest problems in conducting trade studies using CITES annual report data. In the IACTS 2002 report we drew attention to measures taken by the CITES Standing Committee that resulted in many Parties providing their missing reports however the situation appears to slipped back since then.

A further problem with annual reports is the basis on which they are compiled. According to CITES Notification to the Parties No. 2002/022 of 9 April 2002 (now replaced by No. 2006/030 of 2 May 2006), Parties may report on the basis of the permits and certificates they have issued if they are unable to report on the actual number of specimens that entered or left the country. However, reporting on the basis of permits issued may lead to overestimates of trade volume as permits are frequently issued for quantities in excess of those actually traded and indeed, some of the permits may not even be used. Despite frequent reminders from the CITES Secretariat, the majority of Parties still fail to provide any details concerning the basis on which their annual reports are compiled and although UNEP-WCMC has access to the export permits routinely sent by several Parties to the CITES Secretariat, few of these are currently from crocodilian exporting countries.

Most CITES annual reports are compiled on a shipment-by-shipment basis and many include the exporters' permit numbers. This allows for very accurate cross-checking of data, particularly where an export may be reported in one year and the import of the same shipment reported the following year, and

enables potential reporting or typographical errors to be traced. In recent years only Switzerland, a significant importer of crocodilian skins, has failed to report in this way.

All annual reports for the years up to 2005 should have been submitted by 31 October 2006 but, at the time of writing (April 2007), several reports that might contain important data have still not been received by the CITES Secretariat. These include Kenya (2003), Nicaragua (2005), Panama (2005), Papua New Guinea (2005) and Venezuela (2005) among the exporting countries and one major importer, Switzerland (2005). The potential effect of such omissions has been commented upon during the analysis.

Table 1. CITES annual reports for 2003-2005 available for analysis

Country	2003	2004	2005
Algeria	*	*	*
Antigua and Barbuda	*	*	-
Argentina	*	*	*
Aruba	*	-	-
Australia	*	*	*
Austria	*	*	*
Azerbaijan	*	*	*
Bahamas	*	*	*
Bangladesh	*	*	*
Barbados	*	*	*
Belarus	*	*	*
Belgium	*	*	*
Belize	*	-	-
Benin	-	*	*
Bhutan	*	*	*
Bolivia	*	*	*
Botswana	*	*	-
Brazil	*	*	-
Brunei Darussalam	*	*	-
Bulgaria	*	*	-
Burkina Faso	*	*	*
Burundi	*	*	-
Cambodia	*	*	-
Cameroon	-	*	*
Canada	*	*	*
Central African Republic	*	-	-
Chad	*	*	-
Chile	*	*	*
China	*	*	*
Colombia	*	*	*
Comores	*	*	*
Congo	*	-	-
Costa Rica	*	*	*
Côte d'Ivoire	*	*	*
Croatia	*	*	-
Cuba	*	*	*
Cyprus	*	*	*
Czech Republic	*	*	*
Democratic Republic of the Congo	*	*	*

Country	2003	2004	2005
Denmark	*	*	*
Dominican Republic	-	*	-
Ecuador	*	*	-
Egypt	*	*	-
El Salvador	*	*	-
Equatorial Guinea	*	*	-
Estonia	*	*	*
Ethiopia	*	*	*
Fiji	-	*	*
Finland	*	*	*
France	*	*	*
Gabon	*	*	*
Gambia	*	*	-
Georgia	*	-	*
Germany	*	*	*
Ghana	*	*	*
Greece	*	*	*
Greenland	*	*	*
Guatemala	*	*	*
Guinea	*	-	-
Guinea Bissau	*	*	-
Guyana	*	*	*
Honduras	*	*	*
Hong Kong, SAR	*	*	*
Hungary	*	*	*
Iceland	*	*	-
India	*	*	*
Indonesia	*	*	*
Iran	*	*	*
Ireland	*	*	*
Israel	*	*	*
Italy	*	*	*
Jamaica	*	*	*
Japan	*	*	*
Jordan	*	*	-
Kazakhstan	*	-	-
Kenya	-	*	*
Kuwait	*	*	*
Latvia	*	*	*
Liberia	*	*	-
Libyan Arab Jamahiriya		*	*
Liechtenstein	*	*	-
Lithuania	*	*	*
Luxembourg	*	*	*
Macao, SAR	*	*	*
Macedonia	*	*	-
Madagascar	*	*	*
Malawi	*	*	*
Malaysia	*	*	*
Mali	*	*	-
Malta	*	*	*
Mauritius	*	*	*
Mexico	*	*	*

Country	2003	2004	2005
Moldova	*	*	-
Monaco	*	*	*
Mongolia	*	*	*
Morocco	*	*	*
Mozambique	*	*	*
Myanmar	*	*	-
Namibia	*	*	*
Nepal	*	-	-
Netherlands	*	*	*
New Caledonia	*	*	*
New Zealand	*	*	*
Nicaragua	*	*	-
Niger	*	-	-
Nigeria	*	*	-
Norway	*	*	*
Pakistan	*	*	*
Panama	*	*	-
Papua New Guinea	*	*	-
Paraguay	*	-	-
Peru	*	*	*
Philippines	*	*	-
Poland	*	*	*
Portugal	*	*	*
Qatar	*	*	*
Republic of Korea	*	*	*
Romania	*	*	*
Russian Federation	*	*	-
San Marino			*
Sao Tome and Principe	*	*	*
Saint Kitts and Nevis	*	*	*
Saint Lucia	*	*	-
Saint Vincent and the Grenadines	*	*	*
Saudi Arabia	*	*	-
Senegal	*	*	*
Serbia and Montenegro	*	*	*
Sierra Leone	*	*	-
Singapore	*	*	*
Slovakia	*	*	*
Slovenia	*	*	*
South Africa	*	*	*
Spain	*	*	*
Sri Lanka	*	*	*
Sudan	*	*	-
Suriname	*	*	-
Swaziland	*	*	*
Sweden	*	*	*
Switzerland	*	*	-
Thailand	*	*	*
Togo	*	*	*
Trinidad and Tobago	*	*	-
Tunisia	*	*	*
Turkey	*	*	*
Uganda	*	*	*

Country	2003	2004	2005
Ukraine	*	-	-
United Arab Emirates	*	*	*
United Kingdom	*	*	*
United Republic of Tanzania	*	*	*
United States of America	*	*	*
Uruguay	*	*	*
Uzbekistan	*	*	*
Vanuatu	*	-	-
Venezuela	*	*	-
Viet Nam	*	*	*
Yemen	*	*	-
Zambia	*	*	*
Zimbabwe	*	*	*

* = report available; - = report not received; no symbol denotes country not party to CITES

The accuracy of the data provided in CITES annual reports is a further limitation and in previous IACTS reports it has been noted that skins have been reported as live animals, while skin pieces, such as back strips, necks, flanks and tails, have been reported as whole skins. Care has been taken to reduce this source of error to a minimum by close cross matching of import data with the original export permit information and the results are discussed in the various species accounts.

Species accounts

Crocodylus acutus American crocodile

France reported importing 130 skins (two shipments) from registered captive-breeding operations in Colombia in 2003. Colombia has two farms registered with CITES for production of this species and confirmed the exports to France. A further 30 skins were reported as exports to France by Colombia in 2004; this transaction was not reported as an import by France. In 2005 Colombia reported exporting a total of 128 skins to Japan and Singapore, both shipments being similarly reported by the importing countries. Honduras has one registered operation producing this species and it appears the first reported trade was of 500 skins imported by Japan in 2003. This was followed by an export of 197 skins to Panama in 2004 that were apparently subsequently re-exported back to Honduras. In 2005 Honduras reported exporting 50 skins to El Salvador, one skin to Japan and 25 to Nicaragua.

Crocodylus johnsoni Australian freshwater crocodile

Figure 1. Australian exports of *Crocodylus johnsoni* 1988 - 1999

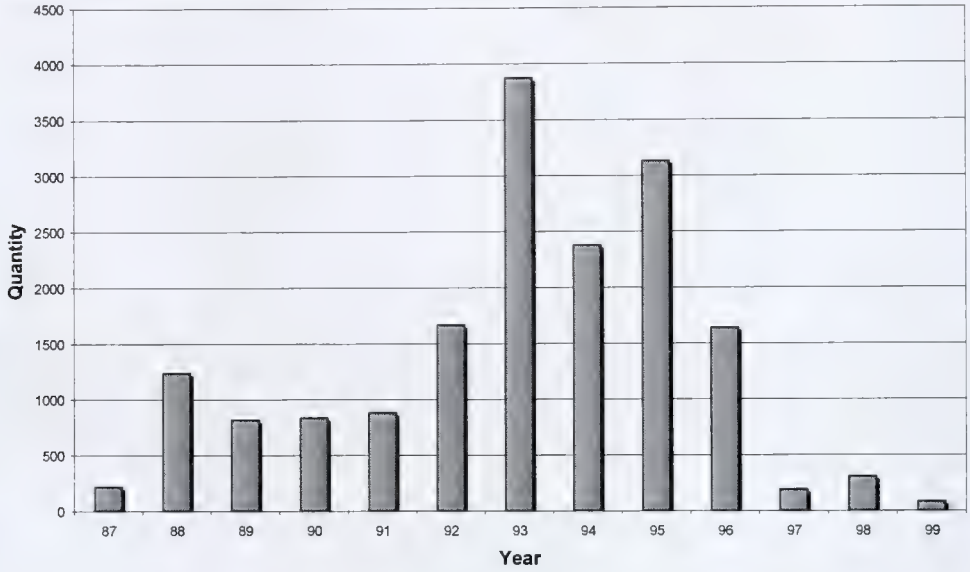
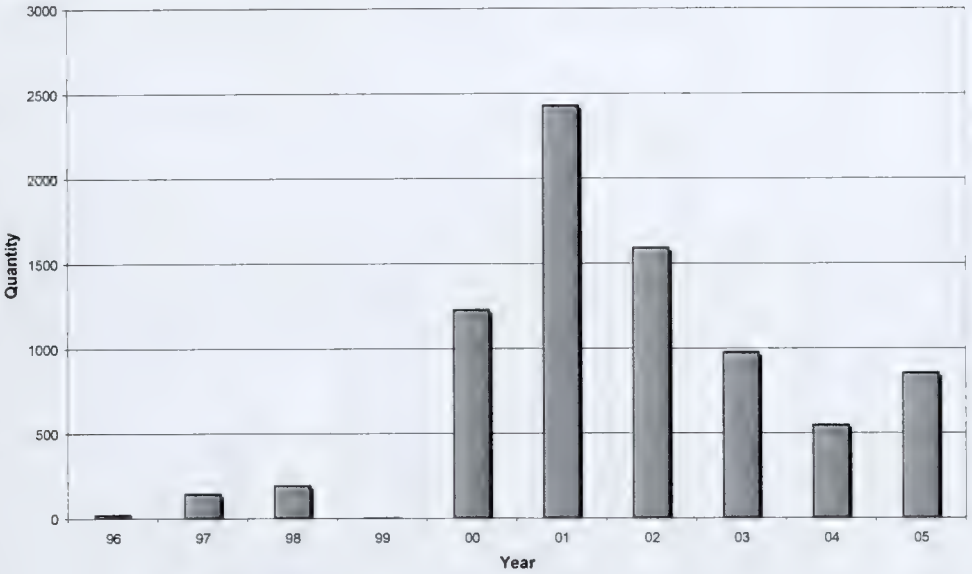


Figure 1 shows that exports from Australia peaked at 3875 in 1993, remained high until 1996 and then fell to insignificant levels. No direct exports in skins of this species were reported in 2001 or 2004 and only two, exported to Japan, in 2002. Although Japan reported the import of 184 skins in 2003 the format of the export permit numbers would suggest the trade was in manufactured products rather than whole skins. In 2005 Australia reported exporting 44 skins from wild-caught individuals and 21 from captive-bred animals, all to Singapore. These exports were confirmed by Singapore.

Crocodylus moreletii Morelet's Crocodile

Mexico has three captive-breeding operations for this species registered with the CITES Secretariat. Exports began in 1996 with just 10 skins and were followed by low levels of exports increasing to 2430 in 2001. Exports subsequently decreased to 1591 skins in 2002 and have remained below 1000 per annum since then. These data vary from those reported in the IACTS 2006 report as a result of new information from Mexico regarding cancelled permits. Japan has been the main importer with lesser quantities going to France, Italy, the Republic of Korea and Spain.

Figure 2. Mexican exports of *Crocodylus moreletii* 1996 – 2005



Crocodylus niloticus Nile crocodile

For the purposes of this report, bellies, skins and hornbacks have been treated as representing entire skins while 'backskins' have been treated as pieces rather than whole skins. A summary of the trade data from 1997-2003 can be found in Table 2.

Exporters

1. Range States

Botswana: although Botswana reported exports of over 9000 skins between 1992 and 1994, there have been no commercial exports of skins between 1997 and 2005 apart from 152 skins from captive-bred individuals that South Africa reported importing in 2001. At the time of writing however, no report for 2005 has been submitted by Botswana.

Central African Republic: apart from an import of 35 skins reported by France in 1986 there have been no commercial exports.

Congo: small numbers of skins were exported to France during the 1980s but there have been no commercial exports reported since 1989.

Ethiopia: the sole crocodile operation (Arba Minch Crocodile Ranch), is apparently owned and managed by the Ethiopian Wildlife Conservation Organisation (EWCO) which also acts as both the CITES Management and Scientific Authorities. The ranch is not currently registered with the CITES Secretariat. Production appears to be erratic and there is considerable confusion between the information contained in Ethiopia's annual reports to CITES, data received directly from EWCO, and information from importing countries. For example the 2003 annual report shows nine shipments totalling 1354 skins exported to the United Kingdom whereas the data from EWCO shows five shipments totalling 900 skins.

Imports reported by the United Kingdom in 2003 and 2004 on permits issued by Ethiopia in 2003 amount to 819 skins. The sole importer between 2002 and 2004 was the United Kingdom but exports to France began in 2005. Data recently provided by EWCO have been used in Table 2 in preference to annual report data.

Guinea: Guinea has not reported exporting skins since 1991, nor have there been any reported imports from that country apart from a seizure of 100 skins reported by Spain in 1995.

Kenya: Singapore reported importing 1687 skins from Kenya in 2003 however no report was received from Kenya for that year. Kenya reported exports of 2850 skins to Germany and Singapore in 2004 the trade being confirmed by the importers. In 2005 Kenya reported exporting one shipment of 400 skins to Germany and 12 shipments totalling 10,550 skins to Singapore. Germany did not report the import in either 2005 or 2006 and Singapore did not report importing two of the shipments totalling 2000 skins, so it seems likely that the true exports from Kenya were 8550. All trade in 2005 was reported to be from captive-bred animals.

Liberia: a few commercial exports to France, amounting to almost 1500 skins, were reported between 1981 and 1984 but none since.

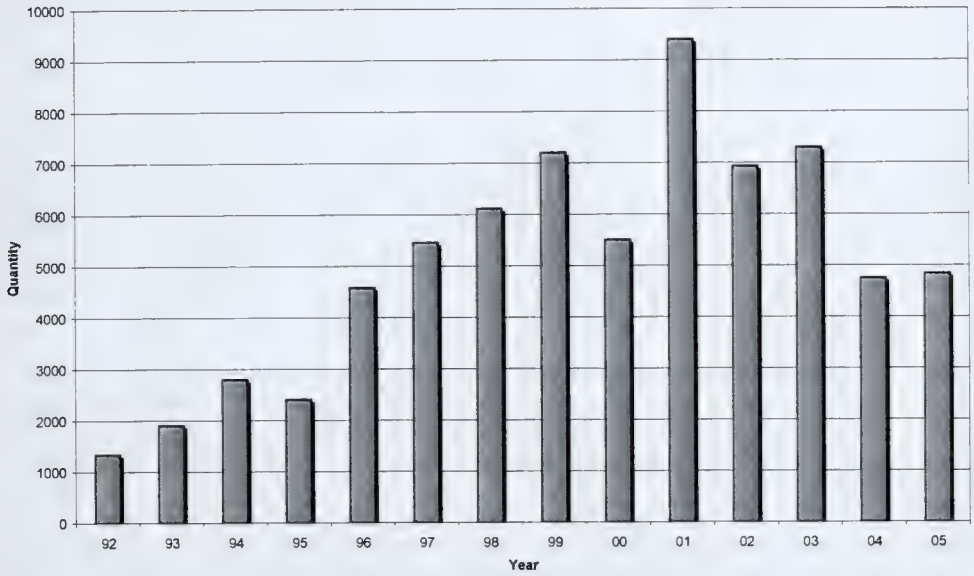
Madagascar: Madagascar's exports since 1992 are shown in Figure 3 below and indicate a steady increase until 2001. Reported exports then dropped to 6936 skins of which 500 were reported to be from the wild in 2002, and then increased slightly in 2003 to 7300, of which 700 were from the wild. Reported exports fell further to 4760 in 2004, of which 2110 were reportedly captive-bred, 2150 ranched and 500 from the wild. It should be noted that Madagascar had a quota of 7600 skins from ranched animals and 500 skins from wild nuisance animals in 2002, 2003 and 2004. In 2005 reported exports of skins from wild animals increased to 900 while the overall level of exports remained similar to that of 2004, 4850 skins. Of these 2750 were reported to be from ranched animals and 1200 from captive breeding.

Malawi: In 2003 Malawi reported exporting a total of 301 skins, to France, Singapore and Zimbabwe, and a further 20 to France in 2004. However France reported the import of 80 skins in 2004 on a Malawi export permit not reported by Malawi in either year so it seems likely that Malawi's true export figure was 100 skin in 2004. In 2005 Malawi reported exporting 637 skins in four shipments to France, Germany and South Africa. However the importing countries reported those shipments plus another four to give a total of 1038 skins. Ranched skins accounted for 660 of these, wild skins the remainder.

Mozambique: In 2003 Mozambique reported exporting 3160 skins, mostly going to South Africa with a few (338) going to Singapore, all but 195 from ranched animals. The annual reports of the importing countries confirmed most of these shipments. The 2004 report from Mozambique only indicates exports of 2000 back skins to Singapore in that year and there are no reports from importers to indicate to the contrary. In 2005 Mozambique reported exporting 834 skins to Mexico (confirmed by Mexico) and 5511 back skins (of which 1840 were from wild collected specimens, the remainder ranched) and 489 bellies (160 wild) to Singapore. Singapore did not report the import.

Namibia: No exports of skins were been reported between 2001 and 2004 however in 2005 Namibia reported exporting 400 skins to South Africa, presumably from the crocodile ranching operation registered with the CITES Secretariat. The transaction was not reported by South Africa

Figure 3. Exports of *Crocodylus niloticus* skins from Madagascar 1992 - 2005



Nigeria: as noted in previous IACTS reports, Italy reported importing 10,304 skins from Nigeria in 1981 and a further nine in 1983. No further commercial shipments have been reported although seizures of items from tourists returning from that country occur regularly.

Somalia: as noted in previous IACTS reports, a total of 2189 skins were reported as imports by Italy and Japan in 1980 and 1981 but no further commercial shipments have been reported since.

South Africa: reported exports up to 2002 indicated a steady expansion of the trade from 29,698 skins in 2000 to 45,755 in 2002. Reported exports decreased to 31,321 in 2003 but increased again to 35,760 in 2004. In 2005 trade remained at this level (35,186 skins) but this included 9662 skins from animals grown on from juveniles imported from Mozambique in 2004. Although both South Africa and the importers, France and Italy, reported the source as captive bred the original exports from Mozambique had indicated that the animals were ranched. Almost all of South Africa's direct exports of skins were reported to be from captive-bred animals although 631 skins were reported as being wild-sourced. The importers confirmed this information. It should be noted that South Africa has been a major re-exporter of skins produced in Zambia and Zimbabwe in the past but most of these are now exported directly by the producer countries.

Sudan: as previously reported in IACTS 2004, the only recorded commercial trade involving Sudan was in 1992 when Egypt reported importing 7900 skins. However, there have been no records of re-exports of Sudanese crocodile skins by Egypt and it seems likely that they may have actually been skins of Nile monitor, *Varanus niloticus*, and misreported by Egypt.

Togo: as noted in previous IACTS reports, no trade in skins has been reported since the early 1980s when 6377 were exported to France between 1982 and 1983.

Uganda: The first trade since 1994 began in 2000 and continued in 2001 with a total export of 1408 skins, all to Italy. Italy reported importing a further two skins in 2002 but none in 2003. In 2003 Uganda reported exporting 600 skins to Italy and a further 600 to the Republic of Korea in 2004. In 2005 the Republic of Korea reported importing 900 skins from Uganda while Uganda only reported exporting 300. It seems likely that 300 of the skins reported by the Republic of Korea had been exported in 2004 and that Uganda's annual report for 2005 is incomplete (the date of last permit issuance being September 2005). All reported trade was in skins from captive-bred individuals.

United Republic of Tanzania: although commercial exports increased steadily between 1997, when Tanzania reported exporting 275 skins, and 2001 when 1498 were reported being exported, commercial trade appears to have stabilised with totals of 1359 in 2002, 1439 in 2003, 1067 in 2004 and 1584 in 2005, all from wild origin. Serious doubt has emerged that Tanzania has included all of their crocodile export data in their annual reports, at least for 2002-2004 so the figures have been taken from the reports of the importing countries, notably France and Singapore. The number of skins reported by Tanzania in 2005 was 1427 and is claimed by Tanzania to represent actual trade.

Zambia: In 2002, Zambia reported exports of 22,259 skins, a further 28,019 in 2003 and 26,353 in 2004. However in 2005 Zambia only reported exports of 9279 skins and a comparison with import data, carried out at the export permit level, suggests that Zambia's 2005 annual report is very incomplete. The data reported by the importers, Italy, Japan and Singapore, suggest a total of 28,490 skins, originating from ranching operations

Zimbabwe: In 2003 CFAZ reported exporting 73,707 skins, a slight decrease from the year before. The CITES Management Authority recorded a similar figure (70,378) for that year, which may suggest an improvement in reporting as comparisons for earlier years had shown significant discrepancies. In 2004 the Management Authority reported exports of 60,185 skins and CFAZ 68,263. Comparison between the two datasets indicated that the Management Authority might have failed to report some 30 shipments reported by CFAZ that can be confirmed by data from the importing countries. In Table 2 we have used the CFAZ figure to calculate the total number of skins for 2004. At the time of writing CFAZ data for 2005 have not been received so the Management Authority's figure of 68,464 has been used.

2. Other countries

Brazil: Brazil reported exporting one skin to the United States in 2003 and a further 44 in 2004. No further skins were reported in 2005

Israel: reported exporting 699 skins to France in 2002, a figure confirmed by the importer, No further exports were reported for 2003, 2004 or 2005.

Mauritius: first reported exporting skins (30) from captive-bred individuals in 2000. This gradually increased to 400 in 2004 but fell back to 150 in 2005. The importers have been Madagascar, Singapore and Zimbabwe.

Table 2. Reported trade in *Crocodylus niloticus* skins, 1997-2005

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005
Botswana	337	0	0	0	152	0	0	0	0
Brazil	1	2082	720	1477	50	0	1	44	0
Ethiopia	0	0	0	995	82	220	900	300	347
Israel	0	0	552*	811*	2289*	699	0	0	0
Kenya	1445	400	3350	3460	3713*	2317	1687*	2850	8550
Madagascar	5464	6520	7207	5506	9408	6936	7300	4760	4850
Malawi	600*	200*	170	360*	1256	120*	301	100*	1038*
Mauritius	48	59	266	30	93	178	118	400	150
Mozambique	1430	810	813	718	477	293	3160	0	1323
Namibia	120	53	115	100	0	0	0	0	400
South Africa	13,573	8863	27,641	29,968	33,335	45,755	31,321	35,760	35,186
Uganda	0	0	0	508*	900	2*	600	600	600*
U.R.Tanzania	275	777	827	1302	1498	1259*	1439*	1067*	1584*
Zambia	12,238*	14,299	23,448	19,906*	20,887	22,259	28,019	26,353	28,490*
Zimbabwe	54,037 46,456♦	45,654 40,720♦	68,230 63,064♦	74,567* 82,168♦	59,096* 76,657♦	69,075* 79,932♦	70,378 73,707♦	60,185 68,263♦	68,464
Total	89,568	79,717	133,339	147,311	150,797	159,970	148,553	140,497	150,982

Key: * Figure derived partly or in full from import data ♦ Data supplied by CFAZ

Crocodylus novaeguineae novaeguineae New Guinea crocodile

Table 3 shows the total number of skins of this species exported by the main producers, Indonesia and Papua New Guinea, between 1996 and 2005.

Indonesia: exports in 2002 amounted to 11,951 skins, decreased to 8826 skins in 2003 and then increased again to 10,481 in 2004 and to 13,585 in 2005. The main destinations were Japan, the Republic of Korea and Singapore. The proportion of skins reported as wild collected increased from 28 per cent of the total in 2002 to 82 per cent in 2005.

Papua New Guinea: exports of 18,798 skins were reported in 2002 and a further 18,482 in 2003. In 2004 trade increased dramatically to 29,315 skins and this is confirmed by data from the importing countries. No report has been received from Papua New Guinea for 2005 and data from importing countries suggest the figure fell back to 20,478 in 2005.The majority of the skins were exported to Japan with smaller quantities being imported by Australia, France and Singapore. In 2000 wild-collected skins accounted for 83 per cent of the production, increasing to 93 per cent in 2001 and to 100 per cent in 2002 and 2003. In 2004 only four skins of animals bred in captivity were exported and import data suggest a similar situation in 2005.

Table 3. Reported trade in *Crocodylus novaeguineae novaeguineae* skins, 1996-2005

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Indonesia	0	100	8506	6574	7215	9946	11,951	8826	10,481	13,585
Papua New Guinea	14,234	32,912	16,985	15,617	16,018	20,688	18,798	18,482	29,315	20,478*
Total	14,234	33,012	25,491	22,191	23,233	30,634	30,749	27,308	39,796	34,063

Crocodylus porosus Saltwater crocodile

Australia: reported exports in 2002 amounted to 7205 however import country data suggested this figure should have been higher and it is known that there were severe problems with new computer software used to produce the Australian report. Close examination of both importer and exporter data and cross matching of permit numbers suggested the real figure to be in the region of 10,423. This method has been used to estimate the figures for 2003-2005 and is probably a slight underestimate as Japan reported the Australian export permit numbers in a different format so these data could not be included. In 2003 Australia's estimated exports were 14,744 skins, in 2004 12,741 skins and 21,192 in 2005. Seventy per cent of the exports in 2005 were reported to be from captive-bred individuals, the remainder from ranching operations. The destinations of the skins were mainly France, Italy, Japan and Singapore with smaller quantities going to Indonesia, the Republic of Korea and the United States.

Indonesia: exports of 3277 skins to Japan and Singapore were reported in 2002 and 2732 skins to the same destinations in 2003. In 2004 reported exports increased to 3968 and further to 4714 in 2005. Whereas the majority of skins exported in 2002 were reported to be from animals bred in captivity, most of those exported in 2003, 2004 and were reported to be from ranching operations.

Malaysia: Singapore reported importing 618 skins in 2003 and 1450 in 2004, all from registered breeding operations of which Malaysia has five. In 2005 the number of skins reported by Singapore had decreased to 1058. From the sparse export data available, it appears that Malaysia may have difficulty in collecting the information which may be the result of having three separate CITES Management Authorities responsible for Peninsular Malaysia, Sabah and Sarawak respectively.

Papua New Guinea reported exporting 9332 skins in 2002,a further 8000 in 2003 and 11,043 in 2004. No report has been received for 2005 and importers' data suggest that at least 10,750 were exported that year. The proportion of wild-sourced skins was reported to be 25 per cent in 2002 but increased to 39 per cent in 2003 and to 42 per cent in 2004.

Singapore reported commercial exports of 584 skins from registered captive-breeding operations in 2002 and 470 in 2003. In 2004 Singapore reported exporting 1136 however data from importing countries suggest that not all of the skins were exported (Singapore reports on the basis of permits issued) so the true figure was probably nearer 693. In 2005 Singapore reported exports of 538 skins to France and Japan, the figures being confirmed by the importers.

Thailand: reported exporting 805 skins to Japan in 2001 and a further 300 in 2004. In 2005 they reported exporting 400 skins to Japan and a further 100 to Singapore.

Table 4. Reported trade in *Crocodylus porosus* skins, 1997-2005

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005
Australia	8777	9896	5048	13,296	11,849	10,423*	14,744*	12,741*	21,192*
Indonesia	150	3141	1087	3172	3397	3277	2732	3968	4714
Malaysia	120*	320*	320*	559*	675*	662*	618*	1450*	1058*
Papua New Guinea	8771	10,255	9396	8336	10,676	9332	8000	11,043	10,750*
Singapore	296	211	60	438	762	584	470	693*	538
Thailand	440	300	60	0	805	0	0	300	500
Total	18,554	24,123	15,971	25,791	28,164	24,278	26,564	30,728	38,752

Key: * Figure wholly or partly derived from import data

Crocodylus rhombifer Cuban crocodile

No trade has been reported for this species since 1998 apart from one skin reported as a personal import by Denmark in 2004.

Crocodylus siamensis Siamese crocodile

Cambodia: Singapore reported importing 30 skins from Cambodia in 2001, the first reported trade involving that country. The skins were subsequently re-exported to Japan in 2002 but no further trade in skins from that country has been reported. Cambodia has six crocodile farms registered with the CITES Secretariat for the commercial production of this species.

Thailand: has 17 crocodile farms registered with the CITES Secretariat for commercial production. Reported exports were less than 6000 annually between 1999 and 2002 but increased dramatically to 10,982 in 2003, to 20,105 in 2004 and again to 28,141 in 2005. The main importer was Japan, with smaller quantities going to China, Germany, France, Hong Kong, Italy and the Republic of Korea.

Viet Nam: the first reported exports were of 825 skins, mostly to the Republic of Korea, in 2004. However 2005 saw an expansion to 3371 skins, the bulk of which went to Japan but with smaller quantities going to Australia, Hong Kong, Italy, the Republic of Korea and the Russian Federation. Viet Nam has five farms registered with the CITES Secretariat for production of this species.

Crocodylus siamensis/porosus Crocodile hybrid

No international trade in skins of this hybrid species has been reported since 1995 when Thailand exported 250 to Singapore, however Thailand does export meat and a small quantity of manufactured items annually.

Osteolaemus tetraspis West African dwarf crocodile

There is no international trade in skins of this Appendix-I species, however seizures of small numbers of manufactured items, mainly emanating from Nigeria, are reported annually. Unfortunately very few of these seizures are reported to species level so it is impossible to estimate the scale of the problem, or even if it is this species that is involved.

Alligator mississippiensis American alligator

Only gross export data reported by the United States have been used for this analysis as it has been demonstrated previously that using data reported by importing countries can lead to a significant overestimate of trade volume.

Figure 4 shows reported exports between 1986 and 2005 and indicates a steady increase from around 30,000 skins in 1986 to 210,000 in 1994. Exports then appear to have steadied during the period from 1995 to 2000 and then increased by almost 40 per cent to 343,110 in 2001. Although exports fell back to 237,840 in 2002 they picked up again the following year so have been around the 350,000-level for four out of the last five years.

Table 5. Exports of *Alligator mississippiensis* reported by USA 1986-2005

1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
31,235	45,177	50,303	76,963	120,419	128,447	155,264	192,286	210,236	185,929
1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
163,936	198,649	206,620	239,519	248,922	343,110	237,840	341,734	368,409	356,393

Four countries, France, Germany, Italy and Singapore import 95 per cent of production with smaller quantities being imported by Mexico and Panama.

It has been noted in recent IACTS reports that the compilers of the CITES annual report of the United States were probably using the code 'C' (bred in captivity) for ranched animals rather than the more correct 'R'. Other codes used are '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.)), and 'W' – wild. This appears to have continued up to 2004 where 58 per cent of exports were reported as coming from captive-bred individuals. However in 2005 there appears to have been a change of policy and 99.5 per cent of the skins were reported as coming from wild-caught individuals. This is presumably a result of the decision by the CITES Management Authority that the code 'R' should only be used in the case of crocodilian populations transferred from Appendix I to Appendix II subject to ranching. A breakdown of the reported source of skins between 1997 and 2005 is shown in Figure 5.
This species is also bred in captivity in Israel who reported exporting 233 skins to France in 2000. Only six skins were exported, again to France, in 2001 and none have been reported subsequently.

Figure 4. Gross exports of *A. mississippiensis* skins from the United States 1986-2005

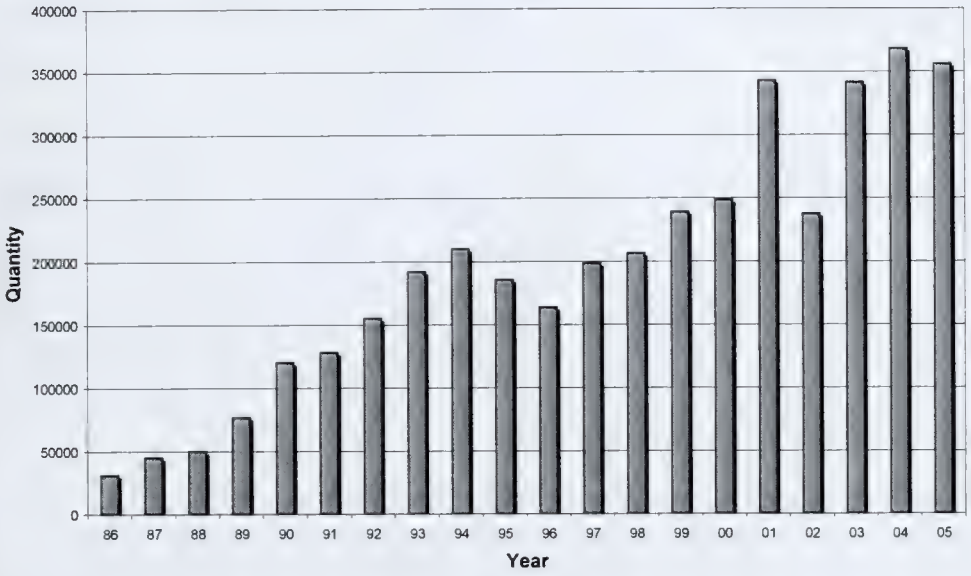
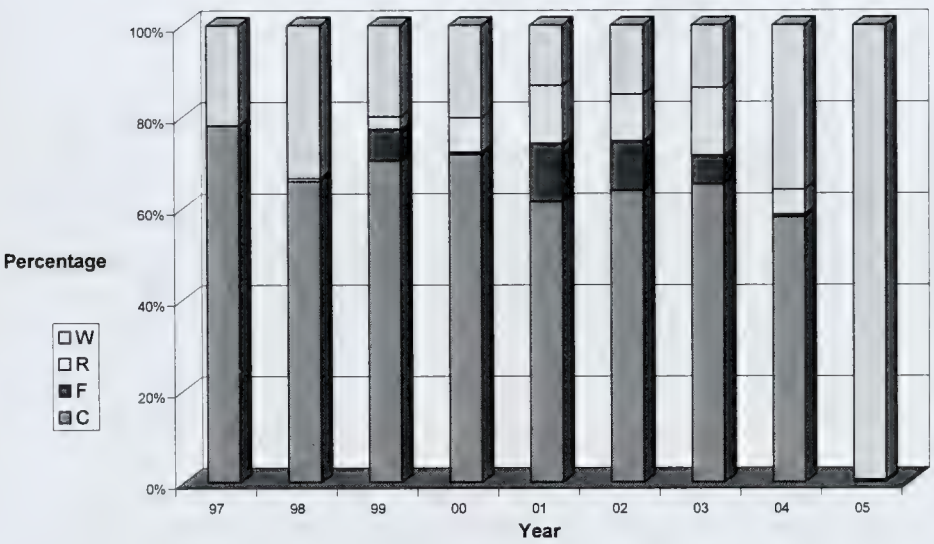


Figure 5. Reported source of alligator skins from the United States 1997-2005

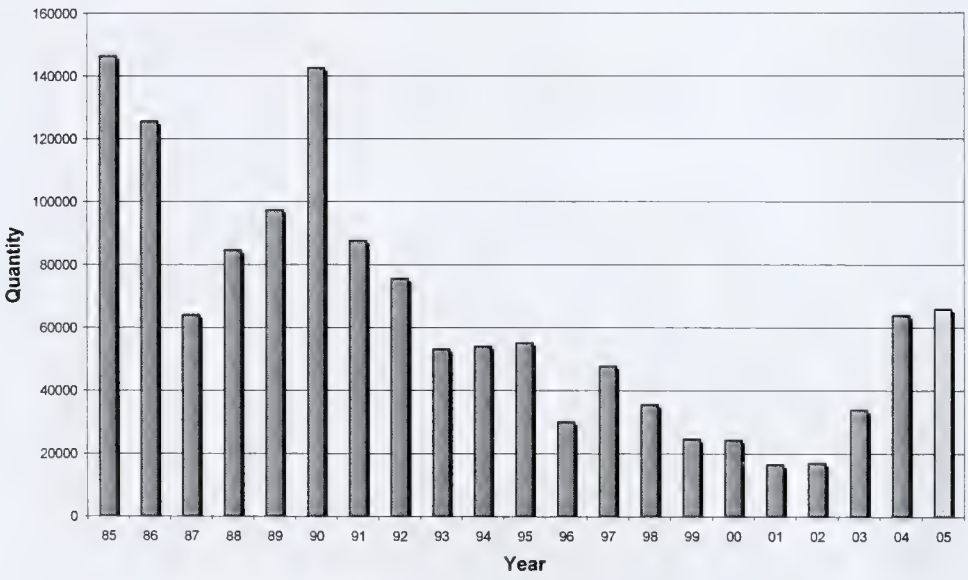


Caiman crocodilus crocodilus Spectacled caiman

Venezuela is the main supplier of skins of this species, almost all from wild-collected animals. Exports peaked in the late 1980s and early 1990s with quantities exceeding 100,000 skins in several years. Exports gradually declined during the 1990s and early 2000s, possibly as a result of the production of massive numbers of *Caiman crocodilus fuscus* in Colombia, but also because of high taxation of the caiman hunting industry. In 2003 exports began to pick up again and Venezuela reported exports of 33,942 skins that year and a further 63,902, mainly to Europe, in 2004. No annual report has been received from Venezuela for 2005 but data from importing countries suggests that a similar number were exported that year. The quantity of skins exported annually from Venezuela since 1985 is shown in Figure 6 below.

Guyana was the supplier of more than 350,000 skins between 1984 and 1989 but exports dwindled during the 1990s and there are no records of skins being exported between 1998 and 2000. However 395 skins were exported in 2001, to Italy and Mexico, and a further 1000 to Panama in 2002. In 2003 Panama reported importing another 2000 skins and both Guyana and Panama recorded the trade in 620 skins in 2004. Guyana reported exporting 2301 skins in 2005, all but one going to Panama. Colombia also exports small quantities amounting to 692 in 2002, 3000 in 2003, 6200 in 2004 and 4431 in 2005; all are reported to be from animals bred in captivity.

Figure 6. Exports of *Caiman crocodilus crocodilus* skins from Venezuela 1985-2005



Caiman crocodilus fuscus Brown caiman

As with *C. crocodilus crocodilus*, the history of the trade in skins of *C. crocodilus fuscus* has been well documented in recent IACTS reports and Colombia remains the major exporter with exports increasing from around 70,000 skins in 1990 to over 820,000 in 2000. Since that time, exports have fallen and are currently running at around 600,000 skins per year. Exports from Colombia between 1990 and 2005 are shown in Figure 7. Details of the countries reportedly exporting this species from 1996 to 2005 are shown in Table 6.

Table 6. Reported trade in *Caiman crocodilus fuscus* skins, 1996-2005

Exporter	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Colombia	646,832	451,307	669,269	777,529	824,303	698,413	540,579	552,219	605,841	599,527
Costa Rica	0	0	40	0	0	0	0	0	0	0
Cuba	302	500	5	2	0	0	0	0	0	0
El Salvador	0	0	0	0	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0	0	0	0	0
Honduras	5,656	22,000	18,104	0	0	0	0	0	0	0
Nicaragua	3795	1246	3927	250	6440	0	0	0	0	0
Panama	0	0	0	10	10,250	11,700	11,498	19,840	15,850	5592*
Total	656,585	475,053	691,345	777,791	840,993	710,113	552,077	572,059	621,691	605,119

Key: * Figure derived from import data.

No exports have been reported from Honduras since 1998 and it seems likely that the reported exports between 1996 and 1998 were in fact re-exports. Nicaraguan production has fluctuated from year to year but the last reported export was of 6440 skins to Panama and Spain in 2000. Although an important entrepôt State, Panama clearly distinguishes between exports and re-exports in its annual reports. The first significant export of 10,250 skins was reported in 2000 and trade appears to have peaked in 2003 at 19,840. Reported exports were less in 2004 and, although Panama has not yet submitted a report for 2005, importers' data suggest that exports decreased further in that year.

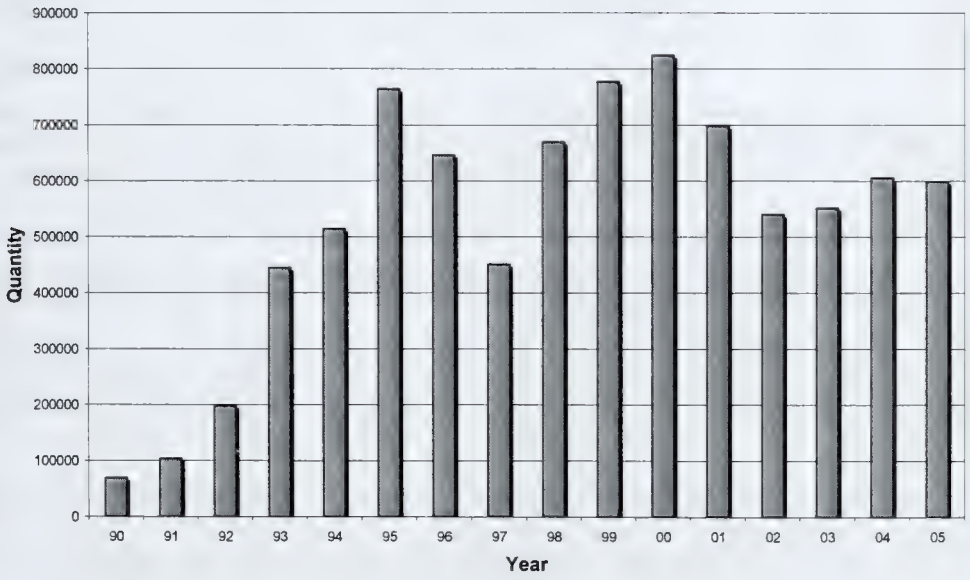


Figure 7. Exports of *Caiman crocodilus fuscus* skins from Colombia 1990-2005

Singapore imported 51 per cent of Colombia's skin production in 2003, 55 per cent in 2004 and 5 per cent in 2005. Most of the skins are then re-exported. The other major importers are the United States

and Mexico who imported 12.5 per cent and 20 per cent respectively in 2005. Direct exports to Thailand have decreased each year from 1997 (30 per cent) to 2005 (4.8 per cent).

Caiman latirostris Broad-snouted caiman

The Argentine population of this species was transferred from CITES Appendix I to Appendix II in 1997 and the first skins from ranched animals were reported by Argentina in 2001, a shipment of 88 to Italy. A further 90 skins were exported to Italy in 2002, 165 to Italy and Germany in 2003 and 215 mostly to Germany and Japan in 2004. In 2005 exports increased to 2752 with most of the skins going to Mexico (56 per cent) and Italy (36 per cent).

Caiman yacare Yacaré

Table 7 shows the fluctuations in exports of *C. yacare* skins from the major producing countries between 1992 and 2004. Trade data for earlier years was presented in IACTS reports 2000 and 2002.

Argentina: reported exports began in 2004 with one skin from a ranch going to Hong Kong. This was followed in 2005 by 1291 skins going to Mexico, Singapore and the United States.

Bolivia: reported exports of 28,170 skins in 2001 but the figures increased significantly to 63,725 skins in 2002. Subsequent exports decreased to 43,028 in 2003 and further to 34,878 in 2004. Exports in 2005 increased to 51,330.

Brazil: reported exports of 6048 skins in 2002, 12,851 in 2003 and 7004 in 2004. Most of the skins were destined for Mexico with some to the United States of America. No report has been received from Brazil for 2005 but the United States reported importing 620 skins on permits whose numbers suggest they were issued that year.

Paraguay: regular exports of wild-collected skins have occurred since 1994. Paraguay reported exports of 2980 skins in 2001, 9038 in 2002 and 4409 in 2003 but voluntarily imposed a moratorium on exports of wildlife in September 2003 as a result of a technical mission from the CITES Secretariat.

Table 7. Reported trade in *Caiman yacare* skins, 1992-2005

Exporter	1992	1993	1994	1995	1996	1997	1998
Argentina	0	0	0	0	0	0	0
Bolivia	0	0	0	0	0	15,961	1757
Brazil	233	7034	43,573	366	536	4961	295
Paraguay	0	3	5466	17,206	725	503	4445
Total	233	7037	49,039	17,572	1261	21,155	6497

Exporter	1999	2000	2001	2002	2003	2004	2005
Argentina	0	0	0	0	0	1	1291
Bolivia	0	4116*	28,170	63,725	43,028	34,878	51,330
Brazil	615	1763	978	6048	12,851	7004	620*
Paraguay	0	9750	2980	9038	4409	0	0
Total	615	15,629	32,128	78,811	60,288	41,882	53,241

Key: * Figure derived from import data

Other Species

There has been no reported commercial exports from origin countries between 2000 and 2005 of skins of the following species: *Crocodylus cataphractus*, *C. intermedius*, *C. palustris*, *Alligator sinensis*, *Melanosuchus niger*, *Palaeosuchus palpebrosus*, *P. trigonatus*, *Gavialis gangeticus* or *Tomistoma schlegelii*. The United States of America reported the seizure of one skin of *Crocodylus cataphractus* from France, of unknown origin, in 2000, and Gabon exported one skin, two stuffed specimens and four leather items of that species as personal items to France in 2002. The United Kingdom exported five pre-Convention leather items of *C. palustris* to Switzerland, also in 2002, and one to Argentina in 2003.

Trade in Live Animals

As noted in previous IACTS reports, the commercial export of live crocodilians outside of their range States poses a potential threat to the natural biological diversity of the importing countries. The effect these alien animals may have on native populations of crocodilians is inestimable should they establish breeding populations, a serious possibility given suitable environmental conditions and habitat. It has also noted that the continued growth of the crocodilian farming industry would probably mean that such exports would continue for the time being.

Live crocodilians are traded for many reasons. Enthusiasts popularly keep young animals as personal pets; circuses and zoos regularly exhibit such creatures, farms and ranches import animals to supplement their gene pool and some are imported in order to strengthen wild populations. This variety of use, and the limited number of possible purpose codes used in CITES annual reports, means that some conclusions drawn from analysis of CITES data are only tentative. For example, the purpose code 'T' which indicates a commercial transaction would apply equally if the animals were destined for either the pet trade or the farming industry. Below we consider the reported trade on a species by species basis.

Alligator mississippiensis

Israel reported exporting nine animals to Spain in 2002 and a further 94 in 2003. Spain similarly reported importing nine animals in 2002 but 105 in 2003. In 2004 Spain reported importing 151 from Israel whereas Israel only reported 94. Another 10 animals were reported by Israel as being exported to Ukraine in both 2003 and 2004. No further trade was reported in 2005. There were limited exports (< 50 per annum) from the United States of America during the period under study, mostly destined for zoos.

Alligator sinensis

China reported exporting 30 to Japan in 2000, 64 to Czech Republic, Denmark and Spain in 2001, 10 to Japan in 2002 and a further 16 to Japan in 2003. The only trade in 2004 was two imported by Canada from the United States and no further trade was reported in 2005. All animals traded were captive-bred specimens.

Caiman crocodilus

Guatemala reported exporting 3300 *Caiman crocodilus crocodilus* to the United States in 2000 and 470 *C. c. fuscus* to Spain in 2003. All specimens were reported to have been bred in captivity. In 2002 Guatemala reported exporting 205 hybrid *C. c. crocodilus* x *C. c. fuscus* to the United States.

Guyana reported exporting 4161 animals in 2001, 4298 in 2002, 3373 in 2003, 2797 in 2004 and 4087 in 2005, all presumably destined for the pet industry. All were wild-caught and the main destinations were Europe, Japan and North America.

Suriname regularly exports wild-caught animals for the pet industry: 94 in 2001, 420 in 2002, 102 in 2003 and 39 in 2004. The main destinations used to be Europe and North America, however in 2002, 2003 and 2004 most of the animals were destined for the Russian Federation. No report has been received from either the Russian Federation or Suriname for 2005 and no other country has reported any imports.

Venezuela reported exporting 3000 to Thailand and 4500 to Taiwan, Province of China, in 2000, all of ranched stock. Exports to the latter destination increased to 11,100 in 2001, 10,512 in 2002 and 11,140 in 2003. The United States reported importing animals from Venezuela in 2001 and 2003. China reported importing 4000 live captive-bred specimens of C. c. crocodilus from Thailand in 2000 but it is not known if they originated in Venezuela and it has not been possible to confirm the transaction via the annual reports of Thailand. In 2005, Spain reported importing 150 captive-bred individuals, but not report has been received from Venezuela.

Caiman yacare

Guatemala reported exporting 50 captive-bred specimens to the United States in 2000 and Paraguay reported exporting 200 wild caught specimens to Canada, who also reported the import, in 2002.

Melanosuchus niger

Fifteen captive-bred specimens were exported from Ecuador to Denmark in 2004.

Palaeosuchus palpebrosus

Guyana has an export quota of 500 live wild specimens annually and reported exporting 352 in 2002, 480 in 2003, 381 in 2004 and 311 in 2005. The animals all appear to be for the pet industry with the main importing country being the United States. Smaller quantities go to Canada, Europe, Japan, Malaysia, Mexico, the Republic of Korea, the Russian Federation and Ukraine.

Palaeosuchus trigonatus

As with *P. palpebrosus*, Guyana has an export quota of 500 live wild specimens annually and reported exports of 224 in 2002, 354 in 2003, 210 in 2004 and 293 in 2005. The main importing country was the United States, with smaller quantities going to Canada, Europe, Japan, Malaysia and Thailand.

Crocodylus mindorensis

In 2002 the Philippines reported exporting six animals to Australia for breeding purposes, their source being listed as 'F'. No further trade in this species has been reported.

Crocodylus moreletii

In 2000 Mexico reported exporting 100 captive-bred animals to Spain and a further 10 to Germany. Four more were reported being exported to Spain in 2001 and in 2003 five were exported to Canada and another 10 to Indonesia. Twelve were exported to Morocco in 2004 and a further 30 in 2005.

Crocodylus niloticus

South Africa is the main importer of live specimens of this species, importing mainly from the neighbouring range States of Botswana, Mozambique and Namibia. Although 2003 saw the first major import from Kenya, this has not been repeated subsequently. Details are shown in Table 8.

Table 8. South Africa's imports of live *Crocodylus niloticus* 1997-2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Botswana	1700	2050	3827	3300	3670	720	0	0	0
Kenya	0	0	0	0	0	0	4000	0	0
Mozambique	0	4000	0	49	0	7000	5600	25,000	24,200
Namibia	800	2150	0	2603	1000	1100	0	1000	0
Zimbabwe	0	0	0	0	0	50	6	0	0
Total	2500	8200	3827	5952	4670	8870	9606	26,000	24,200

The 2006 annual report has already been received from Mozambique and indicates exports of 29,000 animals to South Africa and a further 20,000 to Zimbabwe in that year. Zimbabwe reported exporting 120 wild-caught specimens to Mauritius in 2003 and there are imports from South Africa numbering several hundreds reported by Namibia, the Republic of Korea and Spain during the period under study.

Crocodylus palustris

India reported exporting 40 captive-bred animals to Bangladesh in 2005 for zoo purposes.

Crocodylus porosus

China was the main destination for this species in 2000 with 65 reported as exports by Malaysia, 210 by Myanmar and 330 by Thailand. In 2001 Singapore reported exporting 299 to Thailand but trade has declined since then. In 2003 Thailand reported exporting 20 to Japan and 10 to the Republic of Korea and in 2004 Bangladesh reported importing 75 from Malaysia. In 2005 Japan reported importing 20 from the Philippines, Malaysia five from Singapore, Spain 10 from Malaysia and the United States two from Australia; Thailand reported exporting 20 to China.

Crocodylus siamensis

China began importing this species from Thailand in 1997 and from Cambodia in 2000 and, as shown in Table 9, has imported over 264,000 live specimens from Cambodia, Thailand and Viet Nam in the nine-year period to 2005. Thailand also reported exporting 1000 animals to Viet Nam in 2004. As noted in the section on skins, Cambodia has six crocodile farms, and Thailand 17, registered with the CITES Secretariat for the commercial production of this species.

Table 9. China's imports of live *Crocodylus siamensis* 1997-2005

Exporter	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cambodia (direct)	0	0	0	10,000	6272	26,746	0	5000	0
Cambodia (via Viet Nam)	0	0	0	3000	10,300	8333	640	0	0
Thailand (direct)	2128	5078	44,622	26,475	12,679	10,148	17,300	30,250	23,696

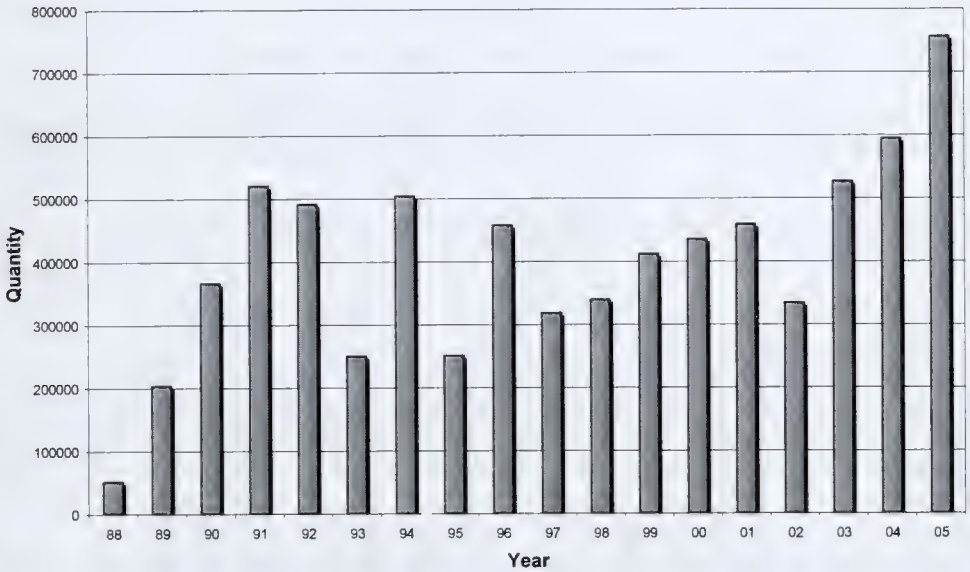
Thailand (via Viet Nam)	0	0	0	0	500	750	0	0	0
Viet Nam (direct)	0	0	0	0	0	0	7700	3200	9300
Total	2128	5078	44,622	39,475	29,751	45,977	25,640	38,450	32,996

Trade in other by-products

a. Meat

Figure 8 shows total world exports as reported in CITES annual reports from 1988 to 2005 and indicates that between 1989 and 2002 the amount traded globally fluctuated around 400 tonnes yearly. Since that time however exports have increased sharply and amounted to over 750 t in 2005. Since 1988 there have been major fluctuations in the countries and species involved. Until 1992 the main species in trade was *Alligator mississippiensis* from the United States, particularly to Taiwan, Province of China, Japan, Canada and the United Kingdom. No exports to Taiwan, Province of China, have been reported since 1994 and export levels have fallen since 1995 (see Figure 9) with the main importers currently being Canada and Hong Kong. Since 1993, exports of *Crocodylus niloticus*, particularly from South Africa and Zimbabwe have increased steadily from less than two t in 1992 to a peak of over 425 t in 2005. Although initial analyses suggested decreases in 2004 and 2005, this proved to be the result of severe under-reporting by Zimbabwe and the data from importing countries, particularly Hong Kong, have been used to calculate the total figures. The main destinations for the African production are Europe (particularly Belgium, Germany, Netherlands, Switzerland and the United Kingdom), Hong Kong and China, however in 2004 and 2005 some exports went to Japan. It appears that all of Zambia's production has been exported via South Africa, however it is unclear if Zambia exported any significant quantity in 2005 and South Africa reported no re-exports that year. Some imports from Israel and the United Republic of Tanzania have been reported but not since 1996. Figure 9 compares the exports from North America with those of Africa.

Figure 8. Global exports of crocodilian meat 1988 – 2005



Exports from Indonesia of meat of both *Crocodylus novaeguineae* and *C. porosus* appeared to be increasing up to 2000 however since then the only exports appear to have been 666 kg in 2001, 628 kg in 2002, 666 kg in 2003, none in 2004 and 500 kg in 2005. All the exports were destined for Hong Kong apart from that in 2005 that went to Taiwan, Province of China.

Australia's exports of *Crocodylus porosus* increased from 53 t in 2000 to 57 t in both 2001 and 2002 but then fell slightly to 49 t in 2003, then to just over 13 t in 2004. In 2005 there appears to have been a slight increase to 18 t. Although recent problems with the Australian annual reports may suggest that recent data are underestimated, it is possible that the apparent decrease is the result of crocodile meat becoming more popular for local consumption. Apart from occasional exports to Europe the main destinations for Australia's production were China, Japan, Malaysia, Hong Kong and Taiwan, Province of China. In 2004 and 2005 there were quite substantial exports to New Zealand while no meat was exported to China or Hong Kong in 2004 and only small quantities in 2005. Singapore exports small quantities, less than 1 t annually to Hong Kong.

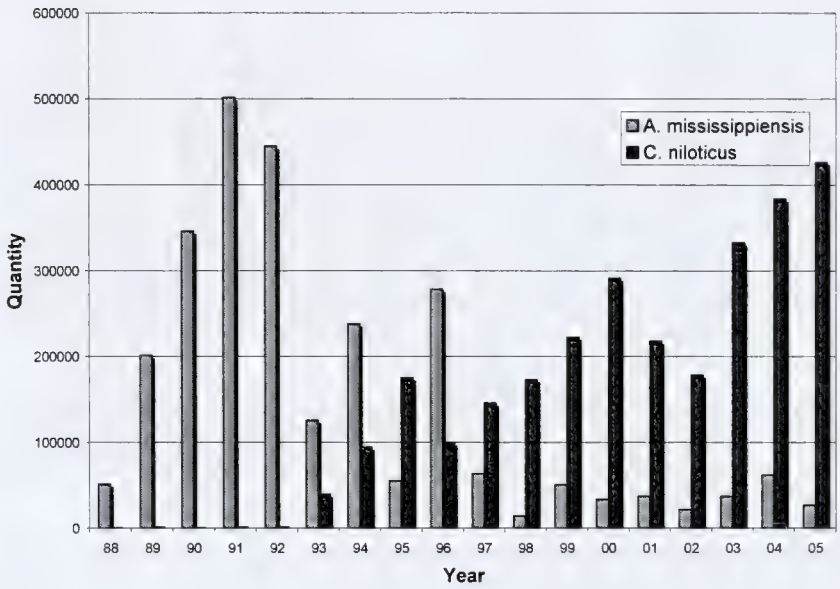
Exports of meat from Papua New Guinea are usually of mixed shipments of both *Crocodylus novaeguineae* and *C. porosus*, and have averaged almost 60 t annually between 1996 and 2003. Apart from a few kilograms exported to Belgium in 1996 and Japan in 2002, Australia is the sole importer and reported importing 45 t in 2004 and a further 60 t in 2005, further strengthening the argument for Australia's own production to be mainly consumed locally.

Thailand is currently almost the only exporter of *Crocodylus siamensis* and exports have averaged about 35 t annually between 1999 and 2003. In 2004 exports increased to over 68 t and again massively to almost 140 t in 2005. The annual Thailand report describes the product as both 'meat' and 'meat and bone' and the main importing countries are China, Hong Kong, the Republic of Korea and Taiwan, Province of China. In 2005 Viet Nam reported exporting 100 kg to Switzerland (for which the two-letter

ISO-code is CH) however this may indicate an error in the Viet Nam annual report as the more likely destination is China (for which the two-letter ISO-code is CN).

There have been small exports by Mexico of meat of *Crocodylus moreletii* amounting to 432 kg in 2000, 3550 kg in 2002 and 1000 kg in 2003. No trade in meat of this species was reported in 2001, 2004 or 2005. Apart from 50 kg reported as an export to Spain in 2002, the sole importer has been Japan.

Figure 9. Comparison of exports of meat of *Alligator mississippiensis* and *Crocodylus niloticus*



b. Teeth

Australia is the world's foremost user of crocodile teeth and between 1999 and 2005 imported nearly 321,000. Most of the teeth were *Crocodylus porosus* from the operations in Malaysia, Papua New Guinea and Singapore. In 2003 Australia imported over 3000 teeth of *Alligator mississippiensis* from the United States, and another 8967 in 2004. In 2005 Thailand reported exporting 2000 teeth of *C. siamensis* to Australia. The Republic of Korea reported importing 2000 teeth of *A. mississippiensis* from the United States in 2005.

Declared dollar value

Although CITES annual reports do not usually contain information concerning the value of the trade or of individual shipments, the United States has included this information since 1997. This figure is not necessarily accurate but can used by UNEP-WCMC to identify typographic errors in the report, for example where it is suspected that a decimal point has been omitted. There is great fluctuation amongst the reported values as may be expected and no indication of the size or quality of the skins is provided, indeed for caiman species flanks may have been reported as whole skins to further complicate the issue. Many of the values are nonsensical and may be the result of a typographic error in that field of the report;

these have been ignored in the analysis below. Table 10 shows the average declared value per skin (in $US) of exports of *Alligator mississippiensis* and the reported value of re-imports of these skins from Europe, Mexico and Asia after tanning. Although the original value of exports fluctuates from year to year, the value of the re-imports has been considerably higher, as one would expect.

Table 10. Reported US dollar value of *Alligator mississippiensis* skins 1997-2005

	1997	1998	1999	2000	2001
Exports from USA	103.7	77.8	97.6	102.9	100.8
Re-imports by USA	143.0	116.3	140.0	179.4	169.5

	2002	2003	2004	2005	
Exports from USA	101.4	106.4	112.5	142.6	
Re-imports by USA	108.6	124.6	144.9	168.3	

Table 11 compares the reported average value per skin of Colombian *Caiman crocodilus fuscus* imported directly from Colombia and via third countries. The source of re-exported skins varies from year to year but the majority are imported directly from Colombia or via Singapore. It is interesting to note that India was first reported as a re-exporter in 2004. The declared value of the direct imports from Colombia has remained at almost $US between 2002 and 2005, and has generally been higher than the value of skins from Singapore.

Table 11. Reported US dollar value of Colombian *Caiman crocodilus fuscus* skins 1997-2005

Exporter/Re-exporter	1997	1998	1999	2000	2001	2002	2003	2004	2005
Colombia	39.3	38.6	39.7	37.4	43.5	50.7	49.9	46.8	50.6
European Community	53.2	81.3	25.2	68.5	24.7	63.8	-	-	28.0
Mexico	-	-	52.4	43.5	49.1	41.5	38.0	-	97.8
Panama	52.0	27.1	-	20.2	59.2	-	54.4	-	-
Singapore	48.9	48.6	44.7	42.5	43.8	39.9	47.8	43.4	43.1
Switzerland	24.3	-	61.4	28.6	29.5	25.0	-	29.5	33.9
Thailand	-	48.6	49.4	45.8	52.2	56.5	32.6	54.0	53.8

Infractions of CITES

Information on seizures are supposed to be recorded in CITES annual reports but is frequently omitted, perhaps because the relevant authorities involved, i.e. the Customs officers making the seizures and the CITES Management Authorities producing the annual reports seldom liaise closely. Furthermore, the data recorded by Customs rarely allows the goods to be identified at the species level. Most of the seizures that are reported are of tourist items such as dried heads, whole stuffed baby crocodiles, etc. and personal imports of manufactured leather goods. It should be noted that most of the data reflect the diligence of Customs officers inspecting tourist luggage and do not indicate problem areas for the crocodilian industry. In addition, many of the items seized on import are subsequently released to the importer when adequate permits have been obtained.

Of the more significant items reported in recent years, the United States reported seizures of 10 back skins of *Crocodylus niloticus* from Zimbabwe and 150 Appendix-I *C. porosus* skins from Singapore in 2000, 2000 skins of *Caiman crocodilus fuscus* from Colombia and a further 399 from Panama in 2001. The United States also reported seizures of two skulls of *Crocodylus rhombifer* from Cuba, four

bodies of *C. siamensis* from Cambodia and eight manufactured items of *Osteolaemus tetraspis* from Equatorial Guinea and Nigeria in 2004. Spain reported the seizure of 300 skins of *Caiman crocodilus fuscus* from Colombia in 2002 and Luxembourg reported a seizure of 650 backskins of *Crocodylus* niloticus from Zimbabwe in 2003. In 2002 the United Kingdom seized a shipment of 10 live *Osteolaemus tetraspis* from Niger. In 2004 Uruguay reported re-exporting 13,330 skins of *Caiman crocodilus fuscus* to Bolivia, Japan, Mexico, Taiwan, Province of China, and Thailand from a seizure made many years previously. In 2005 a further 26,673 skins were re-exported from Uruguay to Mexico.

Discussion and recommendations

The overall volume of world trade in classic crocodilian skins and caimans from 1996 to 2005 is summarised in Table 12 and based, wherever possible, on country of export data. There are uncertainties regarding the overall total figures because of the lack of annual report data from certain key countries, particularly Kenya, Nicaragua, Panama, Papua New Guinea, Switzerland and Venezuela. However it is hoped that the estimates made using import country data are sufficient to indicate close approximations to actual exports. Some diversification in the trade began in 2001 with two different species entering the market, captive-bred *Crocodylus acutus* from Colombia and subsequently Honduras, and *Caiman latirostris* from Argentina. Trade in these species continues and appears to be increasing. The first exports in recent years of wild *Caiman crocodilus crocodilus* skins from Guyana occurred in 2001 and continued through 2005 while 2005 saw the first recent exports of ranched *Caiman yacare* from Argentina.

The increase in exports of *Alligator mississippiensis* from the United States of America noticed in 2001, although not sustained in 2002, has remained high between 2003 and 2005 Exports of *Crocodylus niloticus* appear to have remained steady at between 140,000 and 160,000 skins yearly since 2000 with Madagascar, South Africa, Zambia and Zimbabwe being the main suppliers. *Crocodylus novaeguineae* form Papua New Guinea appeared to increase in 2004 according to both exporters and importers data, and *C. porosus* trade continued to be stable, possibly increasing in 2005. Thailand's exports of *C. siamensis*, which had ranged between 1679 and 5459 between 1996 and 2002 showed a sharp increase to over 28,000 between 2003 and 2005. Viet Nam also began exporting significant numbers of skins of this species in 2005. Trade in caiman skins peaked in 2000 but fell by 30 per cent between 2001 and 2002. A slight recovery has been observed since, particularly as a result of increased exports from Bolivia and Venezuela. Overall the total number of skins entering international trade in 2005 was in excess of 1.34 million, slightly in excess of the previous highest year, 2000, the year that saw the peak in exports of caiman from Colombia. It should be noted that he figure for 2005 may be need adjustment when more annual report data are received.

Table 12. Reported trade in crocodilian skins 1996-2005

Species	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Alligator mississippiensis	163,936	198,649	206,620	239,944	249,155	343,116	237,840	341,734	368,409	356,393
Crocodylus acutus	0	0	0	0	0	100	630	830	227	204
C. johnsoni	1641	194	309	45	10	0	2	0	0	65
C. moreletii	20	146	193	2	1228	2430	1591	997	549	855
C. niloticus	>67,528	89,568	79,717	133,339	147,311	150,797	159,970	148,553	140,497	150,982
C. novaeguineae	14,234	33,012	25,491	22,191	23,233	30,634	30,749	27,308	39,796	34,063*
C. porosus	19,651	18,554	24,123	15,971	25,791	28,164	24,278	26,564	30,728	38,752*
C. rhombifer	40	0	2	0	0	0	0	0	2	0
C. siamensis	3186	5452	1679	5459	2417	4422	3580	10,982	20,930	31,517
subtotal	270,236	345,575	338,134	416,951	449,145	559,663	458,640	556,968	601,138	612,841*

Species	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Caiman crocodilus crocodilus	26,346	37,084	35,580	32,571	38,155	25,510*	22,709	34,636	70,722	72,647*
C. crocodilus fuscus	656,585	475,053	691,348	777,791	840,993	710,113	552,077	572,059	621,691	605,119*
C. latirostris	0	0	0	0	0	88	90	165	215	2752
C. yacare	1261	21,115	6497	615	15,629	32,128	78,811	60,288	41,882	53,241*
subtotal	684,192	533,252	733,425	810,977	894,777	767,839	653,687	667,148	734,510	733,759*
Grand total	954,428	878,827	1,071,559	1,227,928	1,343,922	1,327,502	1,112,327	1,224,116	1,335,648	1,346,600*

* = data deficient

Significant improvement in the reporting of crocodilian trade continues, however the absence of annual reports from some of the producer countries and Switzerland renders analysis of the trade more difficult than it need be. Switzerland continues to report overall totals rather than on a shipment by shipment basis but are no longer a major direct importer of skins.

In previous IACTS reports we have commented upon the importance of export permit numbers for accurate cross matching of shipments but still very few countries have adopted the recommended permit number format that identifies the year of permit issuance (see CITES Resolution Conf. 12.3 (Rev. CoP13)).

Standardisation of the terminology used to describe parts of crocodilian skins has been recommended in the past in order to reduce the danger of double-counting and subsequent overestimation of trade levels. There has been considerable improvement in this area but we continue to recommend this standardisation.

Similarly, we urge CITES Parties to pay greater attention to accurate reporting of the source of the material and suggest, for crocodilians, it should be possible for analytical purposes, to combine codes C, D and F to cover farming operations, and O and U to cover unknown source. We believe the move by the CITES Authorities in the United States to report ranched alligators as being wild is a retrograde step that will hinder wildlife management programmes.

We continue to recommend that countries with large-scale farming operations should establish strict monitoring and management programmes for their wild crocodilian populations, and any farming of non-native species should be strictly regulated to ensure there are no escapes into the wild. Although breeding in captivity can alleviate pressure on wild populations it can also remove the incentive to preserve them.

The following recommendations made in previous IACTS reports remain valid:

- It is **recommended** that *the CITES Secretariat and the Chairman of the Standing Committee should contact Parties in June of each year to remind them of their reporting obligations under Article XIII, paragraphs 6 and 7.*

- UNEP-WCMC **recommends** that *Parties adopt the recommendations of Resolution Conf. 12.3 (Rev. CoP13) concerning the format of permit numbers as soon as possible.*

- UNEP-WCMC would **recommend** that *wherever possible, Parties report the actual quantities of skins being traded.*

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