

International
Alligator
Crocodile
Trade
Study



International Alligator/Crocodile Trade Study (IACS)
June, 1998

Forward and Overview
by
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World trade in classic hides reached a total of 447,010 skins in 1994 and when increased domestic trade in the American Alligator is considered in 1995, total trade again exceeded 400,000 classics. This record volume of classics approaches the historic high of about a half million hides a year estimated to have occurred in the late 1950's and early 1960's. And as has been predicted in IACS and other reports, the rapid increase in supply without adequate attention to expanding demand is resulting in significant economic pressure within the industry.

Millions of dollars have been spent to develop the research, management and enforcement guidelines necessary to establish sustainable use programs for crocodilians. But relatively little has been spent to market, promote and educate consumers worldwide. Even more classic crocodilians can be produced, and not just the American Alligator and Nile

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Crocodile which combined made up 87 percent of the total trade of classics in 1994-95. Many other species could increase production and participate in the sustainable use contribution to commerce and conservation.

But preliminary 1996 trade data begins to document the supply and demand predictions that must also be a part of realistic sustainable use programs. We have proven through research, management and enforcement the sustainability of crocodilian resources and proven the economic incentive can benefit both people and wildlife. We have not proven the sustainability of a world market capable of absorbing at least 500,000 classic hides a year and more than one million caiman skins at a reasonably profitable level to producers. Admittedly, current economic difficulties in the Pacific Rim and Japan have magnified this problem. And there is no doubt some market expansion in watchstraps, western boots, small leathergoods and the U.S. product demand in general is occurring. But it does not replace a historic market like Germany that at one time used about 100,000 classics a year and had more than 20 handbag manufacturing companies. Today Germany is reduced to three handbag makers, using less than 5

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percent of that volume and a consumer base that is reluctant to carry any wildlife product in public.

When that reality is combined with the negative images of wildlife products discussed in the last IACTS Report at Heathrow, Gatwick, Hong Kong and other international airports as well as the procrastination of industry and government to recognize the need for better promotion or education, the result is a great conservation program based on economic incentives that may not be commercially viable for many producers. This is a tragedy and is avoidable. But not without a concerted effort to better explain the concepts of sustainable use (not endangered or illegal), remove the politically incorrect stigma of carrying a wildlife product, encourage more manufacturing, retailing and purchasing of finished products (promotion and price) and focus industry and governments on the reality of market sustainability as well as that of renewable natural resources.

The idea this can be done in a short time or with a silver bullet promotion is off base. More should have been done incremental for the last ten years when all signs pointed to the rapidly increasing supply but a sluggishly expanding

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demand curve with a narrow consumer base tied to only a few countries. It is not difficult now to see for example how dramatic the impact on wild alligator hide prices are when the Japanese do not purchase as many handbags and the Italians do not make enough shoes or other products that can use large scale patterns. The impact on programs for other crocodile species can be more devastating with little investment potential if markets remain tight or decline further.

The point is that more market stability is difficult without a more diversified marketplace. And that requires more manufacturers producing a product at a price that more retailers and consumers will buy. Impediments to those sales (misinformation, misleading customs displays, incorrect buyer beware ads, etc.) must be removed and more independent conservation experts must step forward and publicly explain the benefits of sustainable use. Frankly, they should start wearing or carrying the products themselves and dispense with the hypocrisy of understanding the sustainable use concept, but not accepting responsibility for providing any economic incentive to make it work.

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As predicted in the previous IACTS Report, not much time remains to make a better effort at promotion and education. General economic crisis has magnified the current problems, but they were coming anyway by the year 2000 if hide supply continued its rapid pace without more attention to product demand and the impediments to it.

It is important these points be raised above all others in this IACTS Report. The classic trade has grown from 65,245 skins in 1984 to more than 400,000 in 1995. But the strain is apparent in the initial 1996 data and will be even more evident when the 1997 reports are filed.

The following table summarizes the classic trade for 1994-95.

Alligator	283,458	63%	220,535	55%
Nile Crocodile	106,560	24%	123,709	31%
New Guinea Crocodile	32,680	7%	21,476	6%
Saltwater Crocodile	20,021	5%	21,476	6%
All others	4,291	1%	9,420	2%
TOTAL	447,010		398,377	

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The alligator declined below 60% for the first time since 1990 with a significant increase for the Nile Crocodile. There still may be some double counting of Nile hides due to backstrap trade and reporting differences, but the overall increase is apparent. Likewise the Siamese Crocodile trade also increased significantly in 1995 to 5470 hides but that may not be sustained if the current Pacific Rim economic crisis continues. In general the coming data for 1996-98 may need to be averaged for a complete picture because the market slowdown during that period shifted some exports between years. But the point is the value of the classic trade declined when the threshold of 400,000 skins was reached. And as predicted, the classic trade could not reach the historic high of 500,000 skins profitably without significant market expansion.

The impact on the caiman trade with a less valuable hide will be even more dramatic and already the data is confusing. While our previous estimate of about 1 million caiman in trade was verified with 1,055,187 reported in 1995, the almost doubling of exports from Colombia since 1993 to 946,914 or 90% of the total caiman trade is extraordinary.

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Particularly since the reliance on captive production was certain to increase costs and potentially undermine other ranching programs with more conservation value in the region. This needs to be carefully reviewed, not only in light of the economic viability of programs in Colombia, but the potential impact on other caiman management programs. Can this level of captive production and export be maintained? Why did Brazil dramatically decline from 43,574 in 1994 to only 370 in 1995 and what has happened to the 75 registered ranches there? Are there options to mitigate the financial impacts on Colombian farmers and are there ranching options that can be considered?

It is also significant that this IACTS Report does not document recent infractions of CITES import/export requirements. But persistent questions about the origin of some caiman shipments and the relationship of exporting countries needs to be reviewed and clarified.

Overall though the progress of implementing sustainable use strategies for caiman after the elimination of CITES reservations and implementation of universal tagging has been

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good considering the complexity of the trade. The major producing countries of Brazil, Colombia and Venezuela though could help sort out the remaining questions. Some may simply be double counting from some countries who report exports as frames or skins and others who report imports as sides or flanks.

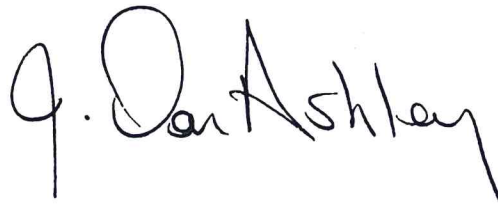
But the significant decrease in exports from Bolivia and Paraguay from 1986-88 levels and the implementation of a ranching program in Brazil should have resulted in more substantial exports by now for Brazil. With the exception of 43,574 skins in 1994, this has not occurred and the dramatic decline to 370 skins in 1995 is inexplicable unless the market decline or export data shift between years is responsible. A review though would clarify much of this confusion and better support sustainable use programs for caiman in the region.

It is also clear that more in-depth analysis of both classic and caiman trade data would help monitor the implementation of sustainable use programs. Unfortunately, the request the last two years to increase research funding to WCMC resulted in a decrease when Florida again chose not to match the

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Louisiana contribution to the Project. Florida has declined again this year, with a request for a more simplified "market report" approach to trade data. Unfortunately this again misses the point of a trade study that has for 15 years provided an independent review of trade data as well as implementation of sustainable use programs for crocodilians. Louisiana will consider an increase to WCMC for further analysis, particularly for implementation of CITES universal tagging, import/export reporting guidelines, the caiman trade and infraction reports of all crocodilians in trade.

This is a critical time for crocodilian sustainable use programs and each one is ultimately dependent on all of them producing economic and conservation benefits to people and wildlife. IACTS has monitored the ups and downs since 1984 and recommends that the issues discussed here be immediately addressed. The difference will be whether the century turns in favor of sustainable use or documents its economic decline.

Handwritten signature of J. Don Ashley in black ink.

WORLD TRADE IN CROCODILIAN SKINS, 1994-1996

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Crocodile Trade Study

by the

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Introduction

The data used in this report have largely been obtained from the WCMC *CITES Trade Database*. WCMC maintains this database on behalf of the CITES Secretariat.

To date, four reports have previously been prepared for the International Alligator and Crocodile Trade Study. These examined the international trade in crocodilian skins from 1980 to 1993. The present report is intended to analyze new information for the years 1994 to 1996, retaining information from previous years for comparative purposes.

Following on from previous studies and because of the importance of the trade in caimans, this report presents information on trade levels in both classic skins (alligator and true crocodiles) and caimans.

Methods

This updated report is based on an analysis of the annual reports submitted by the Parties to CITES for the years 1994 to 1996. A list of annual reports received 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 analyzed. Two sides are considered to be equivalent to one skin. Trade reported in units of weight, area or length has been excluded. Where the number of skins reported by the importing country is different from the number reported by the exporting country, the higher of the two quantities has been used. Gross exports from all countries have been summed to show the gross world trade. Net imports, taken as the positive difference between gross imports and gross exports, have been summed to give the net world trade. Where the number of re-exported skins (of specific crocodilian populations) is greater than the number of skins directly exported, these skins have been included in the figures given in this report, assuming there is no record of the skins having been previously reported in trade. The quantity of skins originating in the major source countries within the range of each species has been estimated by calculating net world trade for each reported country of origin (or export, where no origin was declared). This is slightly different from some previous IACTS studies that used gross trade; however, many countries re-export substantial quantities of skins and so the net trade is considered to give a more reliable estimate of the total quantity of skins in trade.

Limitations of data

There are a few instances where countries that are major sources or destinations of crocodiles have yet to submit annual reports for the relevant years to WCMC, particularly with regard to 1996. Parties to CITES are obliged to submit their annual reports to the Secretariat by October of the year following the relevant reporting year. All 1996 reports should therefore have been submitted by October 1997 but, at the time of writing (April 1998), several reports that should contain important crocodilian trade data have still not been submitted, including Australia, Ethiopia, France, Honduras, Japan, Kenya, Paraguay, Thailand, Zambia and Zimbabwe. If there is a possibility that these reports will drastically alter the statistics, this has been commented upon during the analysis. It is, however, possible to obtain most of the statistics because, even if an annual report has not yet been submitted by an exporting country, in many cases the corresponding details will have been submitted by the importing country, and vice versa.

The use of net trade figures rather than gross trade figures should provide an estimate of the minimum number of skins of each species traded by individual countries. However, it is likely that there is still some double counting of some transactions of skins due to different reporting methods employed by the two relevant countries or, in some cases, reporting errors. For instance, in 1994 Hong Kong reported

exporting 45 *Alligator mississippiensis* skins to the USA but the USA reported importing 45 m² of skins from Hong Kong. However, perusal of tabulations comparing the import and export data for **1994-1996** indicate that this type of problem is unlikely to seriously affect the figures for any species during this period.

A universal tagging system for crocodilian skins was adopted by CITES several years ago. If the provisions of this system were being implemented fully and if CITES annual reports for all Parties were produced on time and were comprehensive and accurately compiled there would be no need to carry out a net trade analysis to estimate the total numbers of skins in international trade. However, none of these reporting requirements is adequately dealt with at the moment, e.g. at the tenth meeting of the Conference of the Parties to CITES the Secretariat noted that they were 'not aware whether all countries permitting re-export of raw, tanned, and/or finished crocodilian skins have implemented an administrative system for the effective matching of imports and re-exports' (Anon. 1997d).

The difficulties of calculating net trade in *Caiman* skins are discussed in the relevant section of the report.

Table 1. CITES annual reports for 1988-1996 available in the database for this analysis.

Country	1988	1989	1990	1991	1992	1993	1994	1995	1996
Algeria	*	*					*	*	*
Argentina	*	*		*	*	*	*	*	*
Australia	*	*	*	*	*	E	*	*	
Austria	*	*		*	*	*	*	*	*
Bahamas	*	*				*		*	
Bangladesh				*	*	*	*		
Barbados							*	*	*
Belgium	*	*	*	*	*	*	*	*	*
Belarus									*
Belize				*	*	*	*		
Benin				*	*	*	*		
Bermuda	*	*	*	*		*	*		
Bolivia	*				*	*	*	*	
Botswana	*	*	*	*	*	*	*	*	*
Brazil		*	*	*	*	*	*	*	
Brunei Darussalam					*	*	*		
Bulgaria				*	*	*	*	*	
Burkina Faso				*	*	*	*	*	
Burundi				*	*	*			
Cameroon	*	*	*	*					
Canada	*	*	*	*	*	*	*	*	*
Cayman Is	*	*	*	*		*	*		
Central African Republic	*	*					*	*	
Chad				*	*	*	*	*	*
Chile	*	*	*	*	*	*	*	*	*
China	*	*	*	*	*	*	*	*	*
Colombia	*	*	*	*	*	*	*	*	*
Congo	*	*	*	*	*	*	*	*	*
Costa Rica	*	*		*		*	*	*	*
Cuba				*	*	*	*	*	*
Cyprus					*	*	*		
Czech Republic				*	*	*	*	*	*
Denmark	*	*	*	*	*	*	*	*	*
Dominican Republic		*	*	*	*	*	*	*	*
Ecuador	*	*	*	*	*		*	*	*
Egypt					*	*			
El Salvador				*	*	*		*	
Equatorial Guinea								*	
Estonia						*	*	*	*
Ethiopia			*	*	*	*	*	*	
Falkland Islands						*	*		
Finland	*	*	*	*	*	*	*	*	*
France	*	*	*	*	*	*	*	*	
Gabon		*	*	*	*		*	*	*
Gambia				*	*	*	*	*	*
Germany	*	*	*	*	*	*	*	*	*
Ghana	*	*	*	*	*	*	*	*	*
Gibraltar						*	*	*	

Country	1988	1989	1990	1991	1992	1993	1994	1995	1996
Greece	*	*		*	*	*	*	*	*
Greenland	*	*	*	*	*				
Guatemala		*	*			*	*	*	*
Guinea	*	*		*	*	*	*		
Guyana	*			*	*	*	*	*	*
Honduras								*	
Hong Kong	*	*	*	*	*	*	*		
Hungary	*	*	*	*	*	*	*	*	*
India		*	*	*	*	*	*	*	*
Indonesia	*	*	*	*	*	*	*	*	*
Iran		*		*	*	*	*	*	*
Ireland	*	*	*	*		*	*	*	*
Israel		*	*	*	*	*	*	*	
Italy		*	*	*	*	*	*	*	*
Japan	*	*	*	*	*	*	*	*	
Jordan	*	*	*						*
Kenya	*	*	*	*	*	*	*	*	
Korea Rep. of						*	*	*	
Liberia	*								
Liechtenstein	*	*	*	*	*	*	*		
Luxembourg	*	*	*	*	*	*	*	*	*
Madagascar	*	*		*	*	*	*	*	*
Malawi	*	*		*	*	*	*	*	*
Malaysia	*	*	*	*	*	*	*	*	*
Mali					*	*	*	*	*
Malta	*	*	*	*	*	*	*	*	*
Mauritius	*	*	*	*	*	*	*	*	
Mexico				*	*	*	*	*	*
Monaco	*	*	*	*	*		*		
Morocco	*	*	*	*	*	*	*	*	*
Mozambique	*	*	*	*	*	*	*	*	*
Namibia					*	*	*	*	*
Nepal	*	*	*	*	*	*	*	*	
Netherlands	*	*	*	*	*	*	*	*	*
Netherlands Antilles						*	*		
New Caledonia						*	*	*	
New Zealand		*	*	*	*	*	*	*	*
Nicaragua	*	*	*	*	*	*	*	*	*
Niger	*	*		*	*	*	*	*	
Nigeria	*	*				*	*	*	*
Norway	*	*	*	*	*	*	*	*	
Pakistan	*	*	*	*	*	*			
Panama	*	*	*	*	*	*	*	*	
Papua New Guinea	*	*	*		*	*	*	*	*
Paraguay	*	*	*	*	*	*	*	*	
Peru					*	*	*	*	
Philippines		*		*	*	*	*	*	*
Poland				*	*	*	*	*	*
Portugal	*	*	*	*	*	*	*	*	*
Russian Federation	*	*		*	*	*	*	*	
Rwanda		*							

Country	1988	1989	1990	1991	1992	1993	1994	1995	1996
Senegal	*	*		*	*	*	*	*	*
Seychelles				*	*	*	*	*	
Sierra Leone									*
Singapore	*	*	*	*	*	*	*	*	*
Slovak Republic				*	*	*	*	*	
South Africa	*	*	*	*	*	*	*	*	*
Spain	*	*	*	*	*	*	*	*	*
Sri Lanka	*	*	*	*	*	*	*	*	
St Kitts and Nevis							*	*	
St Lucia	*			*	*	*	*		
Sudan		*	*	*	*		*	*	*
Suriname	*	*	*	*	*	*	*	*	*
Sweden	*	*	*	*	*	*	*	*	*
Switzerland	*	*	*	*	*	*	*	*	*
Tanzania	*	*	*	*	*	*	*	*	*
Thailand			*	part	*	*	*	*	
Togo	*	*	*	*	*	*	*	*	*
Trinidad & Tobago	*	*	*	*	*	*	*	*	*
Tunisia	*	*	*	*	*	*	*	*	*
Turks and Caicos						*	*		
Uganda				*	*	*	*		
United Kingdom	*	*	*	*	*	*	*	*	*
United Arab Emirates					*	*	*		
Uruguay	*			*	*	*	*		
USA		*	*	*	*	*	*	*	*
Vanuatu		*	*		*	*	*		
Venezuela	*	*	*	*	*	*	*	*	*
Vietnam							*	*	
Zaire	*	*	*	*	*	*	*	*	*
Zambia	*			*	*		*	*	
Zimbabwe	*	*	*	*	*	*	*	*	

part partial report

E Exports only

Species accounts

Crocodylus acutus American Crocodile

No trade has been reported in *Crocodylus acutus* since 1989. The 59 skins recorded in 1989 and the single skin recorded in 1988, were reported as exports by Switzerland as pre-Convention stock or originating in Argentina, a country outside the range of the species. No skins originating from range countries have been recorded since 1987 (Table 2).

Table 2. Minimum world trade in *Crocodylus acutus* skins, 1983-1996

	1983	1984	1985	1986	1987	1988	1989	1990-1996
Gross	599	106	573	27	4	1	59	0
Net	599	106	573	27	4	1	59	0

Table 3. Minimum gross trade in *Crocodylus acutus* skins reported as exported from or originating in range states, 1983-1996

Origin	1983	1984	1985	1986	1987	1988-1996
Belize			1			
Guatemala			1		1	
Mexico	1	1	521	1		
Unknown	8				3	

Crocodylus cataphractus African Sharp-nosed Crocodile

Table 4. Minimum world trade in *Crocodylus cataphractus* skins, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross	11	149	1193	570	544	464	76	0	57	0	0
Net		149	1193	570	544	464	76	0	57	0	0

* Data deficient

Table 5. Minimum net trade in *Crocodylus cataphractus* skins reported as exported from or originating in range states, 1986-1996

Origin	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Congo	9		1193	559	554	459	76	0	57		
Gabon	1										
Nigeria		149		11							
Sierra Leone	1										
Zaire											
Unknown											

*Data deficient

The population of *Crocodylus cataphractus* in Congo was transferred back from Appendix II to Appendix I in 1992. The population had, from 1987-1991, been subject to an annual quota of 600. In 1991 and 1992 exports were reported as 464 and 76 respectively. All of the skins were imported by France and the only country of export was Congo. In 1993 zero trade was reported.

In 1994 a total of 57 skins were reported as exported by Congo, 51 imported by Japan and 6 by Mexico. There was no trade reported in 1995 or 1996.

Crocodylus johnsoni Australian Freshwater Crocodile

Table 6. Minimum world trade in *Crocodylus johnsoni* skins, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross		833	1281	904	993	895	1872	3983	2810	4742	664
Net		824	1274	794	988	884	1863	3661	2167	3848	664

* Data deficient

The first recent exports of skins of *Crocodylus johnsoni* were authorised in 1987. Net exports have risen from 884 in 1991 to a peak of 3848 skins in 1995. Singapore was the largest importer of skins in 1990, 1991 and 1992, the percentage of gross trade being 60%, 85% and 90% respectively. Exports to Japan have declined over this period, imports accounting for 13% of gross trade in 1991, 8.5% in 1992 and 0.1% in 1993. In 1993, Singapore reported re-exporting 320 skins to the Republic of Korea, making the latter the second largest importing country of *Crocodylus johnsoni* skins in that year.

Singapore continued to be the principal importer in 1994 (62% of total trade) and 1995 (68%) but in 1996 virtually the only reported trade was 651 skins exported from Singapore to the Republic of Korea.

Crocodylus moreletii Morelet's Crocodile

A total of 52 *Crocodylus moreletii* skins were reported between 1988 and 1996, almost all as illegal imports to the USA from Mexico or Honduras. Single skins, in 1992 originating in Guatemala, in 1995 in Mexico, and in 1996 in Belize, were reported to have been imported by the United States. In 1996 both France and the United States reported importing 10 skins of captive-bred origin from Mexico.

Crocodylus niloticus Nile Crocodile

Table 7. Minimum world trade in *Crocodylus niloticus*, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross	19507	23548	31253	46480	43306	56284	85055	114438	131083	140988	33144
Net	18480	22974	27526	41097	39701	46324	71038	95358	106560	123709	25781

* Data deficient

Total net trade in *Crocodylus niloticus* increased from a low of 6115 in 1984 to a peak of 123,709 in 1995, with currently available CITES figures showing a drop to 25,781 in 1996. However, it should be

noted that the 1996 annual reports of several African countries were not available for this review, including Cameroon, Ethiopia, Guinea, Kenya, Uganda, Zambia and, most significantly, Zimbabwe.

Figures provided by the Crocodile Farmers' Association of Zimbabwe (Anon., 1997) indicate that 38,416 skins were exported in **1996**, suggesting that the net total in Table 7 should be at least 52,000 - still a significant decrease compared with **1995**.

In 1991, net exports from populations other than Zimbabwe's accounted for only 8989 skins; rising to 27,568 in 1992, to 44,001 in 1993 and a peak of 60,908 in **1994** (Table 8). This rise was due largely to the increase in exports from South Africa, Zambia, Madagascar and Mozambique, whose net exports grew consistently from 1991 to **1995**. In 1993, net exports from these countries accounted for 26,407 of the total Appendix II skins traded. The majority of the remaining 1993 skins (17,594 in total) were exported by Kenya, Uganda, Mozambique and Malawi (Table 8).

Minimum net trade in skins from South Africa rose sharply (5296 in 1990 to 29,287 in **1995**) after the population was transferred to Appendix II in 1992. The quota of 1000, agreed to under Resolution Conf. 7.14, is a utilization quota to allow hatchlings from the Natal Parks Board Utilization programme to be raised for their skins. This quota has, on occasion, been misconstrued as an export quota. The population was maintained in Appendix II, with a ranching programme, under Resolution Conf. 3.15 and Conf. 8.22 in 1995. It is not clear why the figure for **1996** is so low.

Skin exports from Madagascar increased to 4589 in **1996** after declining to 885 in 1990. Skins from Ethiopia also increased in 1993, when the majority were imported by Japan and the Republic of Korea, and in **1995** when all were imported by Singapore.

In Israel, two farms registered as captive-breeding programmes have been established: the Gan-Shmuel Crocodile Farm in 1988 and the Fazaal Crocodile Farm in 1991. The manager of the latter commented that 'the farm intends to produce 11,250 skins over the period 1992-1996' (Luxmoore, 1992). Skins from Israel, which were reported as Appendix I, originating in Kenya and Zimbabwe, have recently appeared in the CITES Statistics. In 1993, 1055 were reported as exported to Singapore; in 1994, Singapore reported the same number from Israel - it seems likely that these records refer to the same batch of skins but this cannot be confirmed because different Israeli export permit numbers were involved. France imported 1960 skins in **1994** and 348 in **1995** from this source, and Italy imported 944 skins in **1996**.

Namibia's population of the species is in CITES Appendix I. As of 1992, there were thought to be two commercial farms in Namibia, the original stock being imported from Botswana (Luxmoore, 1992). In 1993, Namibia reported exporting 543 captive-bred Appendix I skins; in **1994** 276 were exported to South Africa (which re-exported 76 to Italy) and 1 to Germany; in **1995** 300 were exported to France (which re-exported 100 to Singapore, 215 to South Africa and 1 to Germany; in **1996** 210 were exported to South Africa.

Most of the Appendix II exports from 1991-**1996** were within the agreed quotas, but there were some exceptions. In 1991, Sudan had a quota of zero skins, but 700 skins were imported by Germany and 153 were imported by Japan (re-exports from Italy). In response to an enquiry by the Secretariat, evidence was provided that the 700 skins were actually from the Sudan's 1990 export quota (Anon., 1994a). In 1992, a quota of 8000 skins was granted to Sudan to facilitate the export of a stockpile of skins. The skins were tagged, documented and exported under the supervision of an independent observer. In total, 7900 skins were exported to Egypt and, on 11 July 1992, the inclusion of the population in Appendix I entered into force. The skins imported by Egypt could not be re-exported after 11 July 1992, and because

of the small local market for crocodile skin products, most of the skins have been stored in depots (Anon., 1994a). No data on exports from Sudan in 1993 was available.

In 1993, skins from Uganda appeared in the CITES trade statistics for the first time since the suspension of skin exports in 1974. In 1992, Uganda's population was transferred to Appendix II, subject to an export quota. The quota of 2500 was exceeded by 1519 skins in 1993; the 4019 skins were all exported to Hong Kong. However, as no skins were exported in 1992, it is possible that the skins produced in 1992 were not traded until the following year. At that time there was believed to be one commercial crocodile farm in Uganda (Luxmoore, 1992). In **1994** 9086 skins were exported but in **1995** and **1996** there was none. The total of 13,105 skins, if divided by 2500, the annual quota, accounts for the allowable exports for 1992-**1996** with a surplus of 605 skins.

Table 8. Minimum net trade in *C. niloticus* skins reported as exported from or originating in range states, 1988-1996

Ranching programme accepted (see for the years in which ranching was accepted for the different populations)

Origin	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Appendix I populations									
Botswana#									
Ethiopia#		1							
Côte d'Ivoire				3					3
Ghana					2	1			
Guinea				28				100	
Guinea Bissau		45							
Mali		1843							
Namibia					162	543	277	516	210
Nigeria		1	4			1			
Somalia						App. I			
South Africa#	1905	4562	5296	3070					
Unknown	1	7	5	60	1	1			
Appendix II populations									
Botswana	68	1890	882	719	1034	3414	687	358	349
Cameroon	3	2		4		6			
Congo	150	150	10						
Ethiopia			2075	7	6	751	2	2005	
Kenya	1400	2550	2296	650	875	4021	4258	7128	300
Madagascar	3177	4928	885	989	1459	1810	3905	3390	4589
Malawi	1829	2603	1070	2389	266	2036	1732	1150	636
Mozambique	795	1707	590	484	3057	4366	3160	4063	523
Somalia				76					
South Africa					8641	13982	28768	29287	2488
Sudan	2526	6460	6629	854	7910	?			1
Tanzania	2316	1754	1555	982	84	475	348	928	1304
Uganda						4019	9086		
Zambia	3738	2354	2296	1140	3346	8575	8962	21063	2443
Zimbabwe	11607	14127	16678	34869	43932	50356	45294	53842	11949
TOTAL App. II	27,609	38,525	34,966	43,163	70,880	94,357	106,202	123,214	24,582

* Data deficient

Table 9. Export quotas, excluding hunting trophies, for populations of *Crocodylus niloticus* transferred to Appendix II under the special criteria set out in Resolutions Conf. 5.21 and Conf. 7.14, 1988-1998

		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Botswana	W	2000	2000	*	*	*	*	*	*	*	*	*
Cameroon	W	100	100	0	0	I	I	I	I	I	I	I
Congo	W	150	150	0	0	I	I	I	I	I	I	I
Ethiopia	W			70	70	70	*	*	*	*	*	*
	R			9300	8800	8800			8600~	8600~	6595	5257
Kenya	W	1000	1000				*	*	*	*	*	*
	R	4000	4000	5000	6000	8000	8000	8000				
Madagascar	W	3784	1000			N 100	N 100	N 100	N 200	N 200	N 200	N 200
	R				2000	3000	4000	4300	4500	5000	4500	7000
Malawi	W	700	700	*	*	*	*	*	200~	200~	200~	200
	R	1000	1600						3000~	3000~	3000~	3000
Mozambique	W	1000	1000	*	*	*	*	*	*	*	*	*
	R		3000									100
Somalia	W			500	500	500			I	I	I	I
South Africa	R					1000	1000	1000	*	*	*	*
Sudan	W	5000	5000	5040	0	(8000) I	I	I	I	I	I	I
Tanzania	W	2000	2000	1000	1000	N 400	N 200	N 200	N+T 1100	N+T 1100	N + T 1100	N + T 2167
	R				4000	*	*	*				
Uganda	R					2500	2500	2500	2500	2500	2500 + 25 N	2500 + 25 N
Zambia	W	2000	2000	*	*	*	*	*	*	*	*	
	R	3600	6200									
Zimbabwe	W											T 150

* = ranching programme accepted

~ = quota established by country concerned, not adopted by CITES

() = stockpile export quota

I = population transferred to Appendix I

N= wild nuisance specimens

T = trophy

R = ranches

W = wild

Table 10. Net imports of *Crocodylus niloticus* skins to major importing countries, 1988-1996

Importer	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Austria	468	1210	142	71	40	33	3	4	2
Argentina				275					
Australia				1	198	288	2244	860	
Belgium	1003	4012	3943	3	4	3		3	1
Brazil									1
Canada							3		2
China						2192	9098	12299	2844
Denmark							3		
Egypt					7900				2
Finland								9	
France	17390	25352	18186	28304	8982	5451	13079	16592	3867
Germany	349	#	1810	996	433	389	250	818	432
Greece							1	350	
Hong Kong				87	317	6485	5458	1760	980
Ireland								1	
Italy	4539	3188	1574	2943	1162	8225	640	1304	2272
Japan	1456	4716	12831	7475	20949	25008♣	31636	22330	2354
Korea Rep.					69	1858	1987	2046	1383
Malaysia							70		
Mauritius									5
Mexico							10		212
New Zealand								1	
Portugal								1	
Russian Federation							2		
Saudi Arabia							1		
Senegal							27		
Singapore				6761	31957	52851♣	35533	36981	7998
Slovenia							752		
Spain	62	#	6	5	173	283	20	133	35
Sweden							1		
Switzerland	770	2206	307	1391		6			
Thailand						210	1150		170
UK	632	#	10	132	4	140	147	6	
USA	108	284	85	112	820	320	57	387	638

* Data deficient

= net exporter in this year

♣ The figures given for Singapore and Japan have been derived from their records of import. As described in the second paragraph of this section, page 7, these figures have been inflated because of reporting inconsistencies.

Table 10 shows the major importing countries of *Crocodylus niloticus* and the volume of skins imported. Table 11 provides a breakdown of these imports, showing the major destinations and their source countries. In 1991, the main importing country was France, which took 49% of total world exports: the second largest importer was Japan, which received 12%, and the third largest, Singapore, received 11%. Most of the remaining skins were imported by other European countries, notably Italy, Germany and Switzerland (Table 10). In 1993, a totally different picture emerged. France only imported 5451 skins, a drop in imports of over 22,000 skins. Singapore became the principal destination of *C. niloticus* skins, their imports rising from 6761 in 1991 to over 52,000 in 1993. Japan was still the second largest importer, the volume of their imports rising sharply, from 7475 in 1991 to over 25,000 in 1993. Some other importing countries became more important in 1993, including Hong Kong, imports to which rose from 87 in 1991 to 6485 in 1993 (the majority from Uganda and Zimbabwe), and the Republic of Korea, which imported 1858 skins in 1993, mostly from Zimbabwe.

In 1994-1996 the pattern of imports remained similar, with Singapore, Japan and France the major importers, but with China overtaking Hong Kong and Korea as the fourth most important country

Table 11. Trade in *Crocodylus niloticus* skins, giving main destination countries, main source countries and the number of skins imported, 1993-1996

		1993	1994	1995	1996*
Main importers	Sources	net imports	net imports	net imports	net imports
Australia	Malawi		19		
	Mali		2000		
	South Africa		220		
	Sudan		4		
	Zimbabwe		1	860	
China	Botswana		203	1	
	Mozambique		950		
	Zambia		3500	3800	
	Zimbabwe		4894	8498	2844
France	Botswana		150	355	
	Israel		1960	348	
	Kenya		4129	6528	
	Madagascar	1295	3287	2467	1920
	Malawi	900		750	434
	Morocco			150	
	Mozambique	1202	1042	1042	1
	Namibia			300	
	South Africa	210	2942	3088	
	Tanzania	453	346	915	1185
	Zambia			1013	
	Zimbabwe	1391		1321	332
Germany	Namibia		1	1	
	South Africa		173	291	
	United States				313
	Zimbabwe		186	556	420

		1993	1994	1995	1996*
Main importers	Sources	net imports	net imports	net imports	net imports
Greece	South Africa			350	
Hong Kong	Malawi		6		
	Mozambique			240	
	South Africa		450	1151	75
	Tanzania		18	50	
	Uganda	4019	4817		
	Zaire		10		
	Zambia		34		
	Zimbabwe	2464	164	355	905
Italy	Israel				944
	Kenya	4170		100	
	Madagascar			252	500
	Malawi	400	200	200	
	Mozambique		202		
	Namibia		76		
	South Africa	3647	454	840	
	Zambia			19	
	Zimbabwe			210	836
Japan	Botswana	1522	314	263	
	Ethiopia	427			
	Madagascar		2	6	
	Malawi	732	1510	200	200
	Mozambique		967		
	South Africa	3964	12042	8791	1372
	Tanzania				100
	Zaire		10		
	Zambia		1316	1707	120
	Zimbabwe	18442	13844	12772	561
Korea, Rep. of	Ethiopia		190		
	South Africa			400	136
	United States		60	30	
	Zaire		45		
	Zambia			20	
	Zimbabwe		1708	1595	1247
Mexico	South Africa				200
Singapore	Botswana	743	219		347
	Ethiopia			2005	
	Israel	1055	1055		
	Kenya	262	129	300	300
	Madagascar	515	620	670	2069

		1993	1994	1995	1996*
Main importers	Sources	net imports	net imports	net imports	net imports
Singapore	Mozambique	3159	957	3021	477
	Namibia			100	
	South Africa	10012	12523	934	1070
	Uganda		4269		
	Zaire		213		
	Zambia	8379	4479	10999	2415
	Zimbabwe	28712	27290	31280	10573
Slovenia	Zimbabwe		740		
South Africa	Botswana		316		
	Kenya		15		
	Malawi		1	200	
	Namibia		276	215	210
	South Africa		2104	30	5
	Tanzania		1		
	Zambia		1658	2506	
	Zimbabwe		117		
Switzerland	Chad		30		
	Mali		100		
	South Africa		70		
	Zimbabwe		104	44	
Thailand	Zimbabwe		1150		170
United States	Botswana			1	4
	Côte d'Ivoire				3
	Madagascar			60	100
	Mozambique		1		1
	South Africa			1	6
	Sudan				1
	Tanzania			4	
	Zambia		2	210	
	Zimbabwe		52	86	535

* Data deficient

Crocodylus novaeguineae New Guinea Crocodile

Table 12. Minimum world trade in *Crocodylus novaeguineae* skins, 1987-1996

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross	40830	41725	57451	62260	36036	30954	31651	34206	27991	4128
Net	37890	34728	42993	47674	32165	26408	22503	32680	23237	2758

* Data deficient

Minimum net trade in skins of *Crocodylus novaeguineae* rose from 27,325 in 1983 to a peak of 47,674 in 1990 and declined to 23237 skins in 1995 (and a provisional figure of 2758 skins in 1996).

As mentioned in the previous IACTS Report, the 1991 figures for gross and net world trade were lower than expected, and it was thought that this might have been due to the lack of the Papua New Guinea annual report for that year. Additional 1991 data, provided by importers (the PNG 1991 annual report still unavailable), increased gross exports for 1991 by 3645. The main farming operation, Mainland Holdings Pty, held 82% of the farmed stock of *C. novaeguineae* in Papua New Guinea at that time. Due to the drop in skin prices, Mainland Holdings decreased the proportion of *C. novaeguineae* in favour of increased stocks of *Crocodylus porosus*; this was in case of further instability in the market for the skins of the former species (Fernandez and Luxmoore, 1995).

Table 13. Minimum net trade in *Crocodylus novaeguineae* skins reported as exported from or originating in range states, 1986-1996

Origin	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Indonesia	5494	1227	10053	14314	19128	9776	8304	6085	9422	10	777
PNG	29465	32071	24397	27062	29682	22346	13856	19131	22629	19549	2476
Unknown	3	59	426	85	1	173	84	2195			155

* Data deficient

The majority of the skins traded from 1991-1996 were reported to have originated in Papua New Guinea (Table 13), although the number of skins exported from both Papua New Guinea and Indonesia declined in this period. However, net exports of skins reported to have come from unknown countries of origin rose from 173 in 1991 to 2195 in 1993; in 1993, these skins were reported by Singapore as re-exports to the Republic of Korea (1758) and to China (437). It is difficult to ascertain the volume of world trade in *Crocodylus novaeguineae* skins because in both 1992 and 1993 the number of re-exported skins of Indonesian origin is far greater than the number of skins which were directly exported. This is quite common and indeed all the net trade figures given in this report incorporate skins which were re-exported with no record of the skins having previously been reported in trade. It is worth noting this here because the discrepancy in the numbers is quite significant. The net trade figures for 1992 and 1993, in Table 12 above, include the re-exported skins, in the event that they were not reported as direct exports/imports. Table 13 shows the net trade figures to be 8304 and 6805 in 1992 and 1993 respectively. However, the net export figures for skins originating in Indonesia, discounting the re-exports, are as low as 1601 in 1992 and 2995 in 1993. The export quota for Indonesian skins was increased from 20,000 in 1988 to 25,000 in 1991. In January 1994, Indonesia took the decision to impose a moratorium on the export of *Crocodylus novaeguineae*, following a recommendation of the Animals Committee in relation to species subject to significant trade levels. The Management Authority of

Indonesia was requested to send to the CITES Secretariat a copy of the new regulations established under Act No. 5 of 1990 to enforce the management programme (Anon., 1995a).

Table 14. Major importers of *Crocodylus novaeguineae* skins and the numbers imported, 1994-1996

	1994 imports		1995 imports		1996 imports*	
Country	Net	Gross	Net	Gross	Net	Gross
Australia	986	994	454	463	0	0
China	0	0	2583	2583	0	100
Hong Kong	554	720	0	356	0	0
Japan	24721	24759	18138	20099	1458	2143
Korea (Rep.)	231	231	973	973	899	899
Singapore	5577	5947	0	2490	0	585
Taiwan	2	2	566	566	0	0
USA	591	591	272	272	401	401

* Data deficient

Net exports from Taiwan totalled 3465 in 1992. These were all exported to Japan. No country of origin was given for these skins and from the CITES data it appears that Taiwan only imported 186 skins from 1991-1993, the majority being from Papua New Guinea.

Net imports to Japan amounted to 26,237 in 1991, 20,568 in 1992, 12,900 in 1993, 24,721 in **1994**, 18,138 in **1995** and 1458 in **1996** (Table 14). The majority of these skins were direct imports from Papua New Guinea: 18,910 (1991), 13,358 (1992), 16,197 (1993). In 1990 Japan became the most important destination for skins. Their gross imports of skins increased by over 50% in that year to 31,405, then declined to 18,244 in 1993, with 24,759 in **1994** and 20,099 in **1995**. Singapore was the second largest importer in 1991, with a gross figure of 3695 and is the only country whose imports remained fairly consistent during the period, with 2490 skins in **1995**. France, once the largest importer (1989), did not feature at all as an importer of *Crocodylus novaeguineae* skins from 1992-1996.

In Papua New Guinea, in February 1992, Labe Mesa from South Sea Foods Pty Ltd was convicted of illegal possession of 4 Freshwater Crocodile skins. The same company, on 21 February 1992 was fined for attempting to export freshwater crocodile skins, acquired illegally by an unauthorised buyer and possession of 16 illegal skins (13 were oversized - over 51 cm belly width) (Anon., 1992b).

***Crocodylus porosus* Saltwater Crocodile**

Table 15. Minimum world trade in *Crocodylus porosus* skins, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross	8183	7684	11303	17677	15838	15755	14140	20590	25493	25219	1270
Net	5752	7166	10042	15928	13036	14590	12648	18781	20021	21476	1139

* Data deficient

Minimum net trade in skins of *Crocodylus porosus* increased from 5398 in 1983 to 21,476 in **1995**. Papua New Guinea remained the major source of these skins, net trade having grown from 6910 in 1990 to 12,908 in **1995**, although there was a decline in **1996**. Mainland Holdings Pty, the main farming operation in Papua New Guinea, held 85% of the farmed stock of *Crocodylus porosus* in the country at

that time. It increased the proportion of *Crocodylus porosus* compared with *Crocodylus novaeguineae* on the farm, as a result of the drop in skin prices and instability in the market for *C. novaeguineae* skins (Fernandez and Luxmoore, 1995).

Australia became the second major source of skins, net exports increasing from 2655 in 1990 to 7448 in 1995 (Table 16). Australia's annual report for 1996 was not available for this study, but it is reported that 15,000 skins of this species were exported in that year (Anon. 1998).

Table 16. Minimum net trade in *Crocodylus porosus* skins reported as exported from or originating in range states, 1986-1996

Origin	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Australia	400	499	1324	2634	2655	2865	3749	6561	5875	7448	106
Indonesia	851	949	2670	4224	2095	2279	1354	1721	3346		
Malaysia					446	222	127		270	398	120
Papua New Guinea	3910	6506	5758	8204	6910	8170	5347	8529	10032	12908	30
Philippines				1							
Singapore	948	71	57			645	1570	439	2036	2247	755
Thailand	14	400	450		450	350		1	1	671	130
Unknown	2	6			2	58	16	384			

* Data deficient

Table 17. Export quotas for the Indonesian population of *Crocodylus porosus* transferred to Appendix II under the special criteria set out in Resolutions Conf. 5.21 and 7.14

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Wild	2000	2000	4000	4000	3000	3000	2700	1500	1500	5000	6000	6000
Ranched					2000	3000	7000	7000	7000	1500	1500	1500

Indonesia's, population of *Crocodylus porosus* was transferred to Appendix II in 1985 under a quota system, the quotas being shown in Table 17. In 1992, 1476 wild skins were exported from Indonesia, which was within the agreed quota; an additional 10 skins had no recorded source and the rest were captive-bred. In 1993, the reporting was poor, with many skins having no recorded source or the source recorded as unknown; only 322 skins in trade were reported as wild. Although the 1995-1997 export quotas for Irian Jaya were agreed at the 9th meeting of the Conference of the Parties, the Indonesia Management Authority informed the Chairman of the IUCN/SSC Crocodile Specialist Group, in June 1994, that it intended to impose a voluntary moratorium on exports of crocodile skins until the management procedures it was developing were in place (Anon., 1994b). In 1994 3346 skins were reported as exports, but there was none in 1995-1996.

Table 18. Net imports of *Crocodylus porosus* skins to major importing countries, 1988-1996

Importer	1988	1989	1990	1991	1992	1993	1994	1995	1996*
China						1500		52	52
France	2835	5425	1989	5946	4110	4601	4950	6175	
Hong Kong							267	102	6
Italy	#	#	#	21	2	156	18	2	232
Japan	6347	8729	9853	7320	6897	8849	8251	12516	547
Korea (Rep. of)							182	367	28
Mexico							169	152	
Panama						233			
Singapore	335	192	#	#	#	1370	3003		
Switzerland	259	108	750	17	54	#			
USA	211	530	52	2	330	987	3061	662	

Net exporter in this year

* Data deficient

Japan was the largest importer of skins from 1988-1996, net imports increasing steadily from 7320 in 1990 to 12,516 in 1995, but decreasing to 547 in 1996. France was the next most important destination; however, its net imports decreased from 5946 in 1991 to 4601 in 1993, but then climbed to 6175 in 1995 before dropping to zero in 1996 (Table 18).

Switzerland increased its imports of this species seven-fold from 1989 to 1990, but in 1991 net imports declined to 17; in the same year Switzerland imported 1391 skins of *Crocodylus niloticus* (Table 10), which could account for this reduction. Switzerland became a net exporter of *C. porosus* skins (220) in 1993.

From 1990-1992 Singapore was a net exporter of skins (Table 16) but in 1993 net imports totalled 1370, most of the skins being imported from Australia. Singapore re-exported most of the skins which originated in Indonesia and Papua New Guinea to Japan, France and China, whilst only re-exporting approximately 10% of the Australian skins; practically all to France. Singapore held a reservation on this species until 1989 and so did not report trade before then. An analysis of a WCMC CITES comparative tabulation (which compares reported imports against reported exports) showed that Singapore was recording the trade.

Some skins from Appendix I populations have recently been imported into the European Union: France imported 101 from Singapore in 1994 and 153 in 1995; Italy imported 130 from Thailand in 1996.

Crocodylus rhombifer Cuban Crocodile

Table 19. Minimum world trade in *Crocodylus rhombifer* skins, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross	0	0	0	0	0	0	0	0	0	99	40
Net	0	0	0	0	0	0	0	0	0	99	40

* Data deficient

In **1995** trade in skins of *Crocodylus rhombifer* was recorded for the first time in recent years. In that year Japan imported 99 skins of captive-bred origin from Cuba, and in **1996** Italy imported 40 skins from Cuba which were reported as captive-bred for commercial purposes.

Crocodylus siamensis Siamese Crocodile

Table 20. Minimum world trade in *Crocodylus siamensis* skins, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross	663	981	2050	1715	2808	1400	102	23	2067	5470	557
Net	605	981	2050	1713	2808	1400	102	23	2067	5326	557

* Data deficient

Exports of *Crocodylus siamensis* from Thailand grew from 0 in 1983 to 5326 in **1995**. In 1989 all were said to derive from the Samutprakan Crocodile Farm and all were imported to Japan, with the exception of 400 in 1988 and 600 in 1989, the latter being imported by Italy. Output from the farm was said to be 2700 in 1989 (Luxmoore, 1992). Japan was again the largest importer of skins in 1990, accounting for 85% of gross trade. Italy and the US imported the remaining skins. Since Thailand did not submit an annual report for 1989, all the trade was recorded by the importing countries for that year. There was little reported trade in *Crocodylus siamensis* in 1992 and 1993. All imports in 1991 and 1992 were reported by Japan. In 1993, of the 23 skins exported by Thailand, 19 were imported by Singapore, 2 were imported by Japan and the remaining two were re-exported from Italy to Austria. Thailand reported the skins exported to Singapore in 1993 as being for educational purposes.

In **1994** Singapore imported 1642 skins, Japan 403 and France 22, all from Thailand. In **1995** Singapore imported 4904 skins, Japan 542 (including 142 via Singapore) and Hong Kong 10, again all from Thailand. In **1996** Japan imported 500 skins from Singapore, Australia 30 from Singapore and Germany imported 30 from Thailand.

Alligator mississippiensis American Alligator

Most skins of *Alligator mississippiensis* that enter world trade are exported from the USA to Europe for tanning, and many are subsequently re-imported by the USA. Neither of the usual measures of CITES trade (gross or net world trade) give an accurate estimate of the total production of skins, and this is best shown by examining gross exports from the USA.

Gross exports from the USA rose from 20,000 in 1984 to 283,000 in **1994** but then dropped to 155,000 in **1996** (Table 21). It can be seen therefore, that although the volume of skins exported continues to rise, the rapid growth seen in the period 1988-1990 has not been so evident. The skins originate mainly in Louisiana and Florida, from a combination of wild harvest, ranching and captive breeding.

Table 21. Exports of *Alligator mississippiensis* skins, 1986-1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Gross US exports	33278	45184	51838	77810	125483	146829	160986	218477	283458	220535	155061
Gross world trade	43843	57458	66707	100511	150962	183213	222911	291345	384674	293959	224264
Net world trade	23907	33078	38705	61586	114735	133866	150620	195889	255529	203226	104056

* Data deficient

Table 22. Principal destinations of exports of *Alligator mississippiensis* skins from the United States, 1987-1996

Country	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
France	28610 (63%)	22989 (44%)	38221 (49%)	57211 (45%)	42558 (29%)	64920 (40%)	82535 (37%)	105693 (37%)	120327 (55%)	78451 (51%)
Italy	9455 (21%)	19953 (38%)	25546 (32%)	37503 (30%)	62712 (43%)	31124 (19%)	36588 (17%)	52250 (18%)	37525 (17%)	32286 (21%)
Japan					22240 (15%)	38842 (24%)	52309 (24%)	71788 (25%)	40294 (18%)	16524 (10%)
Singapore								43153 (15%)		19458 (13%)
Switzerland					11491 (8%)	20696 (13%)	21515 (10%)	1656 (0.6%)	627 (0.3%)	3850 (2%)

* Data deficient

The percentage of gross US exports is shown in brackets

As in most of the previous years, France was the major destination of skins, importing a higher percentage of gross exports from the USA than any other country in the period **1994-1996** (Table 22). In 1992, Japan replaced Italy as the second largest importer, and Japan's imports rose from 22,240 in 1991 to 71,788 in **1994**; imports apparently subsequently declined in **1996** to 16,524 skins (but note that Japan's 1996 CITES annual report had not been received when this analysis was carried out). Gross imports to Switzerland almost doubled from 1991-1993, but then declined during **1994-1996**.

Israel exported 827, 986, 1495, 1036 and 668 skins of captive-bred origin from 1991 to **1995**, respectively. No country of origin of these skins was provided and all were imported by France. An initial stock of 120 *Alligator mississippiensis* animals were obtained by a farm in Israel from Florida farms in 1981 (Luxmoore, 1992).

Table 23 lists additional countries whose imports of US skins have risen during the period 1991-1996. The quantities imported by these countries may not be very large at present but the figures have been included in this section for comparison in future IACTS studies.

Table 23. Additional countries importing at least 1000 skins of *Alligator mississippiensis* in one year from the USA during 1991-1996

Country	1991	1992	1993	1994	1995	1996*
Canada				430	2660	83
Chile		80	2571			
Colombia		437	3475	546	44	93
Hong Kong	1179	1151	4931	209	739	145
Republic of Korea	23	432	3013	222	70	184
Mexico	76	1127	1050	1377	758	574
Panama				1940		3127

* Data deficient

Table 24 shows that some of the skins imported by the major importers are subsequently re-exported to the USA after tanning, but over 60% of the skins are retained in France, Japan, Italy and Switzerland.

Table 24. Major trade in *Alligator mississippiensis* skins, 1991-1996

	1991	1992	1993	1994	1995	1996*
GROSS US EXPORTS	146829	160986	218477	283458	220535	155061
Gross imports to France of US skins	42558	64920	82535	111426	123174	80126
Gross exports from France of US skins	10179	21765	27847	36445	19976	30849
Skins retained in France	32379	43155	54688	74981	103198	49277
Gross imports to Italy of US skins	62712	31124	36588	60697	42097	32937
Gross exports from Italy of US skins	14570	13289	16272	16586	15981	17374
Skins retained in Italy	48142	17835	20316	44111	26116	15563
Gross imports to Japan of US skins	22240	38842	52309	74897	42636	16866
Gross exports from Japan of US skins	983	1186	4370	7970	3650	148
Skins retained in Japan	21257	37656	47939	67017	38986	16718
Gross imports to Switzerland of US skins	11491	20696	21515	22540	22790	11925
Gross exports from Switzerland of US skins	4917	6970	4669	9446	6198	1281
Skins retained in Switzerland	6574	13726	16846	13094	16592	10644
Total retained by above countries	108,352	112,372	139,789	199,203	184,892	92,202
Percentage of US exports	(74%)	(70%)	(64%)	(70%)	(84%)	(59%)

* Data deficient

Caiman crocodilus Spectacled Caiman (including *C. yacare*)

As stated in previous IACTS studies, the calculation of trade in *Caiman crocodilus* skins is much more difficult than for other species of crocodilian, because of the various methods of reporting trade that are employed. Trade may be reported as *Caiman* spp. or under various subspecific names; the Yacare Caiman *C. yacare* is included here to facilitate comparison with previous reports and all reported trade in these two species has been grouped together. Trade may be reported as either skins or sides, and in some instances what are clearly the same specimens have been recorded as 'skins' by the exporter and 'sides' by the importer (or vice versa). Thus, although the normal practice is to divide the number of sides by two to obtain the number of skins, this cannot be relied on to reflect the trade accurately in all cases.

Total net trade calculated as above (and therefore subject to these limitations) varied from a minimum of 300,000 to a maximum of 1,300,000 million (1985) during the period 1983 to 1996. Net exports from 1989 to 1995 grew from 293,929 to 1,055,187 but then declined to 782,567 in 1996 (Table 25).

The majority of skins traded between 1991 and 1996 originated in Colombia and Venezuela. Colombia's net exports grew from 129,521 in 1990 to 946,914 in 1995. More recently, on 1 March 1997, the CITES Management Authority lifted its export restriction on specimens of *Caiman crocodilus* more than '1.20 cm' in length [an error for 1.2 m]. The stocks in this category at that time were about 1500 skins of *C. c. crocodilus* and 58,500 of *C. c. fuscus* (Anon., 1997b).

Skins from Venezuela declined from 117,687 in 1990 to 65,856 in 1995. Imports of Venezuelan skins to Switzerland and Japan, both major importers of Venezuelan skins, declined as their imports of Colombian skins rose. Japan imported 99% of its skins from Venezuela in 1991, 67% in 1992 and 42% in 1993. Switzerland imported 63% of caiman skins from Venezuela in 1991, 50% in 1991 (although the absolute number had increased) and just 17% in 1993.

Skins from unknown countries of origin were the third largest source in 1992 and 1993. Up until 1989 many thousands of skins were reported as derived from unknown countries of origin. The numbers fell in 1990 and 1991 but rose again to 47,549 in 1992 and 44,378 in 1993. All of the skins reported in this way had been re-exported from Singapore. In 1992 skins were re-exported mainly to the Republic of Korea and Taiwan, with the majority to the former (39,160 skins). Of the total number of re-exported skins, 1780 were reported by Singapore as wild, 45,436 as pre-Convention and 307 with no source at all. Of the 1993 skins, 36,717 were exported to the Republic of Korea, 6168 were exported to Taiwan and 1488 to Japan. Singapore reported the skins exported to Japan as wild and the remainder as pre-Convention. The Republic of Korea became a Party to CITES on 7 October 1993. Singapore's reservation on the species was withdrawn on 1 February 1992.

Nicaragua was the third largest source of skins in 1990 and 1991 and in 1996. Presumably this increase was a result of the introduction of management programmes and the setting of export quotas (WCMC *et al.*, 1993). In 1993, 1994 and 1995, Nicaragua was the fourth largest source of skins, although total net trade fluctuated from 24,720 in 1991 to 14,121 in 1993, reached a peak of 32,577 in 1994 and declined to 8583 in 1995. The main importers of Nicaraguan skins in 1991, in order of importance, were Germany, Italy, Singapore and Taiwan; however, in both 1992 and 1993 Italy imported no Nicaraguan skins (Table 28). In 1992 Singapore's imports of Nicaraguan skins fell by over half and in 1993 Singapore increased its total skin imports from Colombia to 96% (from 63% in 1991). In 1994-1996 the USA was the only importer of skins directly from Nicaragua.

Skins from Paraguay, previously one of the major sources, dropped from 11,725 in 1989 to zero in 1991, but in 1992 net trade amounted to 5806, the majority of which were re-exported from Switzerland to France (5634). There has been an export ban on skins of caiman from Paraguay since 14 May 1992 (CITES Notification 225). Direct imports of skins from this population and re-exported skins from Thailand, Taiwan, Singapore and the Republic Korea were banned from import into the EU from 14 May 1992 until June 1997 under Commission Regulation (EEC) 3626/82. On 2 September 1992, over 50,000 Spectacled Caiman *Caiman crocodilus* skins were seized by police from a tannery in Luque, near Asuncion, Paraguay (Anon., 1992c). However, exports continued in **1993-1996** with 10,932, 19,793 and 1080, respectively.

On 28 December 1992, Customs in Uruguay seized 85,370 Caiman skins at the port of Montevideo. The shipment, which originated in Colombia (and possibly also in Venezuela) was worth an estimated US\$1 million. The skins had been stored in a container at Aruba, transferred to Curaçao in the Netherlands Antilles and were bound for Singapore. There was no permit with the shipment (Anon., 1993). In April **1996** the CITES Secretariat received from the General Direction of Customs of Uruguay a copy of the final judgment passed by a court in Uruguay. The caiman skins had been definitively confiscated and assigned to the Customs to be sent for auction (Anon., 1997c).

In 1992 in Bolivia, the De-centralized Technical Unit of the Centre for the Development of Forestry announced that they would auction or burn 3900 seized wildlife hides. *Caiman yacare* hides were to be included in the 3522 seizures to be auctioned (Anon., 1992a).

On 14 March **1995**, E. C. Silberstein was found guilty of the illegal export of more than 5000 caiman skins to Europe from Argentina. Silberstein had attempted to export the skins to Italy via Belgium in 1989 using a false re-export certificate based on a permit that had been issued legally by Bolivian authorities for another shipment of skins, two years earlier. On arrival in Antwerp, Customs officials found 10 times the number of skins than was recorded on the re-export certificate. In his defence, Silberstein claimed the increased weight of the shipment was a result of chemicals used to treat the skins, a fact described by technical advisors as impossible. A total of 1626 whole skins and 3922 flanks were recorded; most of these were Spectacled Caiman, but a few Broad-nosed Caimans *C. latirostris* and Black Caimans *Melanosuchus niger* were also identified (Anon., 1995c).

In April **1995** the CITES Management Authority of Paraguay informed the Secretariat of seizures of illegal skins made in various parts of the country in March 1995. These included seizures containing 70, 28 and 12 bales of *Caiman* spp. skins, respectively (Anon., 1997c).

The volume of skins exported by Bolivia also declined, from 11,039 in 1990 to four in 1993 and zero in **1994-1996**. In 1992, 2696 skins were re-exported by France to Switzerland. Bolivian *Caiman yacare* skins have been banned from import into the European Union since 10 July 1991.

Net exports of Caiman skins from Guyana decreased from 10,503 in 1990 to 2886 in 1993, with continuing small numbers from **1994-1996**. This was presumably as a result of the temporary suspension of wildlife exports, imposed on 13 May 1993.

Under *Lei No. 5197* of 3 January 1967 Brazil had prohibited all exports of wildlife. A revision of the regulation in the late 1980s permitted the export of caiman skins produced from ranching operations. In 1989 the Brazilian Government authorized 17 caiman farms, with the proviso that animals must be kept for 6 months before being sold (Luxmoore, 1992). In 1990 legal net trade in skins was 265, the majority being exported to the USA. In 1993 legal trade rose to 7523 with 6000 being exported to Panama and

1506 to Italy; all were reported as captive-bred *Caiman yacare*. In **1994** exports rose to 43,574 with 43,500 exported to Paraguay, but in **1995** the exports fell again to 370, with a further drop to 132 in **1996**. By **1994** IBAMA had registered 75 ranching operations that were producing skins of *Caiman c. crocodilus* and *Caiman yacare* (Anon., 1994c). No recent information on the status of these operations has been published.

Table 26 shows minimum net imports of *Caiman crocodilus* skins to Europe, Africa, Asia, the Americas and Oceania. From 1988 to 1992 Europe was generally the most important regional destination for the trade, with Italy, France and Switzerland being the largest importers. However in 1993, **1994** and **1996** Asia dominated the trade (about 60% of the total trade). Singapore and Japan were the principal destinations from 1988-1992, but in **1995** China was the major importer, followed by Japan, Thailand and the Republic of Korea; in **1996** Singapore again dominated the trade, followed by Thailand, the Republic of Korea and Japan.

Thailand reports its overseas trade by country of origin rather than country of consignment and it is possible that the skins represent re-exports rather than direct exports from Venezuela or Colombia. CITES statistics record sporadic exports of crocodilian skins to Thailand. There were 14,000 in 1988 and 1098 in 1989 with no exports being recorded again until 1992 and 1993, with the numbers increasing from **1994-1996**.

Table 27 gives the declared counties of origin of skins of caiman imported to France, 1987-**1996** and Table 28 gives the same for Italy, 1987-**1996**.

Table 25. Reported countries of origin of exported *Caiman crocodilus* skins, 1986-1996

Origin	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Argentina	6000	54226	5654	1110	3831	105					
Austria									62		
Bolivia	27352	24182	166164	13915	11039	2768	2724	4			
Brazil				7	265	30	233	7523	43574	370	132
China									1190		
Colombia	35161	40708	82233	31168	91386	129521	208669	477606	685471	946914	727776
Costa Rica		2000									
Cuba										12	302
Ecuador					2						
El Salvador	118602	20066	7375	8268	938	2106	4	106		1	
France		1			6				200		80
Germany	197					50					
Guatemala	26288	12851	33341	8587	2513	12	13		62		
Guyana	41350	47905	76824	49289	10503	6556	6496	2886	685	1526	2650
Honduras		7907	15865	40	2001			799		2000	6000
Hong Kong	6					16					
Indonesia	379	267				1		3			
Italy	50	632			140	194	44				
Japan					6						
Korea, Rep. of		409						313	30		
Mexico		1		2				1300			2
Nicaragua	210	863	100	75	15050	24720	21014	14121	32577	8583	11240
Nigeria		187									
Panama	253	66	76	210	353					2005	
Papua New Guinea			4269			5	7				3
Paraguay	143635	45357	53707	11725	642	6		5806	10932	19793	1080
Peru	2855							1			
Singapore	15867	105393	37413					3659	9240	8126	1194
South Africa		183	150					15			
Suriname		1		1							
Switzerland										1	
Taiwan	1133	1382									
Thailand									1550		
UK						759					
USA	635	972		8			28	3013	30		
Venezuela	128095	73990	224650	170347	204206	117687	123594	87314	73909	65856	32108
Vietnam						400					
Unknown	58134	24891	86944	2176	41	822	47549	44378	2		
TOTAL	606202	464440	794765	296917	342922	285758	410375	648847	859514	1055187	782567

* Data deficient

Table 26. Minimum net imports of *Caiman crocodilus* skins to principal destination countries, 1988-1996

	1988	1989	1990	1991	1992	1993	1994	1995	1996*
EUROPE									
Austria	29657	31078	30865	6737	369	3419	8338	174	68
Belgium	0	0	183	40	552	36	44	0	0
France	88570	7972	22359	51874	96928	52152	51757	109436	14745
Germany	75	0	1	9908	20625	33028	6318	41571	7480
Italy	160553	33494	100206	48200	57529	73758	98296	313698	87904
Portugal	234	0	0	110	100	0	3	6	0
Spain	4569	0	5582	5254	3229	7444	10235	11797	8784
Switzerland	66683	50048	21915	55996	94885	29412	23913	9714	30153
UK	5570	3180	16280	5000	1	263	0	0	0
TOTAL	266,263	94,695	189,068	183,120	274,324	232,381	198,924	486,400	149,134
AFRICA									
Madagascar	0	0	0	0	0	0	0	2460	0
Malawi	0	0	0	0	0	0	0	271	0
Mauritius	0	0	0	0	0	0	60	390	0
South Africa	0	0	0	0	0	0	210	289	585
TOTAL	0	0	0	0	0	0	271	3410	585
ASIA									
China	0	6	0	105	77	3832	43649	171155	46427
Hong Kong	16894	6195	5609	11982	21480	10288	26405	0	634
Japan	217266	103244	103048	38431	23380	43232	141860	145398	56016
Korea, Rep.	1132	2794	0	4	39287	60448	71061	71808	58512
Lebanon	0	0	0	0	0	0	0	1554	0
Malaysia	0	0	0	0	0	0	50	205	1050
Singapore	7849	15210	23666	24006	16419	233989	172477	6688	177704
Taiwan	3747	2324	393	2377	10309	8004	12070	0	596
Thailand	14000	1098	0	0	3500	38287	43610	74887	134108
TOTAL	260,888	130,871	132,716	76,905	114,452	398,070	511,194	471,695	475,059
AMERICAS									
Canada	10586	5034	6214	2745	8216	11303	12744	11208	0
Honduras	0	0	0	0	0	0	0	3000	21647
Mexico	0	0	0	0	0	0	1366	30046	56425
Panama	0	0	2100	4018	7801	32881	44379	0	12344
USA	72552	19582	6353	16137	3547	8488	74366	46618	63112
TOTAL	83138	24616	14667	22900	19564	52672	132680	90872	153534

	1988	1989	1990	1991	1992	1993	1994	1995	1996*
OCEANIA									
Australia	0	0	0	0	0	0	62	2	2

* Data deficient

Table 27. Declared countries of origin of skins of *Caiman crocodilus* imported to France, 1987-1996

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Bolivia	12998		508							
Brazil								232	510	
Colombia		34050		8064	40796	96886	45018	70983	146503	15622
Cuba										2
El Salvador	6184	360			75					
Guatemala	142	246	694	120	12	3		378		
Guyana		9385	544		3148		1494	685		
Honduras	2940	13455								
Panama			111	173						
Paraguay	5691	24720					5634			
South Africa	183	150								
Venezuela	13986	16822	6096	14002	7844			1290	585	
Unknown		3021	18							
Total	42124	102208	9960	24349	51875	96889	52146	73568	147598	15624

* Data deficient

Table 28. Declared countries of origin of skins of *Caiman crocodilus* imported to Italy, 1987-1996

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*
Argentina	37818									
Bolivia	2000	101682								
Brazil			6	4			1506	1417	110	102
Colombia		34641		38274	31820	36734	41121	76952	256965	92829
El Salvador	11905				1512					
Guatemala	7367							208		
Guyana	1623	13311	16704	1514	196			262	754	1650
Nicaragua	5		75	9500	5000			530		
Paraguay	43854		36						17793	355
Venezuela	13375	44712	16674	48915	9673	20795	31131	42762	38208	15232
Unknown									22000	
Total	117947	194346	35478	100193	59966	57529	72252	122131	335830	110168

* Data deficient

Other Species

There has been no reported trade from 1991 to 1996 in skins of the following species:

Crocodylus intermedius Orinoco Crocodile, *Crocodylus palustris* Mugger Crocodile, *Gavialis gangeticus* Gharial, *Tomistoma schlegelii* False Gharial.

One skin of *Melanosuchus niger* was reported seized on entry to the USA in 1989. In April 1995 the CITES Management Authority of Paraguay informed the Secretariat of seizures of illegal skins made in various parts of the country in March 1995. These included two chalecos of *Melanosuchus*.

Local trade in black caiman in Amazonia, formerly restricted to dried and salted meat and sold as fish, is expanding to include skins. Recent reports from researchers in the region suggest that the trade in meat now occurs all year round and may involve several hundred tonnes a year. Until recently skins were discarded, but there are reports that buyers in Colombia are requesting that the skins be collected. Studies by Ronis da Silveira in Brazil suggest that the impact of this harvest may be somewhat mitigated as it is concentrated on sub-adult males found in the more open habitat (Anon., 1995b).

Ecuador's proposal to transfer *Melanosuchus niger* to Appendix II for ranching was approved at the Ninth Meeting of the Conference of the Parties to CITES (November 1994) subject to two conditions:- a zero quota be established until a management system was in place and that the IUCN/SSC CSG review the system and make recommendations on changes to the export quota. A schedule for the development of a ranch has been approved by the National Directorate of Natural Areas and Wildlife (INEFAN).

Discussion

The overall volume of world trade in classic crocodilian skins, as summarized in Table 30, increased from 65,245 in 1984 to 447,010 in 1994 but then decreased to 186,021 in 1996. As has been outlined for the individual species, the increase was due to the development of controlled management programmes in several countries around the world. This involved *Alligator mississippiensis* in the United States (where skins are derived from a combination of ranched and wild harvest); *Crocodylus niloticus* in Zimbabwe and in South Africa (where skins have first been obtained from ranching programmes as recently as 1992); and *Crocodylus porosus* in Papua New Guinea and Australia where, again, the increase was due to the success of ranching. World trade in skins of *Crocodylus novaeguineae*, many of which are derived from wild harvest, has shown a declining trend since 1991.

In 1993, total minimum net trade amounted to nearly 360,000 skins and in 1994 reached a peak of 447,000 skins. The increase in the number of skins traded between 1990 and 1992 was lower than for the period 1987 to 1989, but rose by 85,000 in 1993. This was probably due to the drop in world prices of crocodile skins in 1992. The instability in world prices has led to the diversification of products exported and also in Thailand, for example, the transformation of farming operations into zoos (Manop Lauprasert, pers. comm., 1995).

Table 29. Minimum net trade in classic crocodilian skins reported in CITES annual reports, 1987-1996

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996*	Total
<i>Alligator mississippiensis</i> #	45184	51838	77810	125483	146829	160986	218477	283458	220535	155061	1485661
<i>Crocodylus acutus</i>	4	1	59								64
<i>C. cataphractus</i>	149	1193	570	554	464	76		57			3063
<i>C. intermedius</i>											0
<i>C. johnsoni</i>	824	1274	794	988	884	1863	3661	2167	3848	664	16967
<i>C. moreletii</i>	244	18	4	1					3	21	291
<i>C. niloticus</i>	22974	27526	41097	39701	46324	71083	95358	106560	123709	25781 ¹	600113
<i>C. novaeguineae</i>	37890	34728	42993	47674	32165	26408	22503	32680	23237	2758	303036
<i>C. palustris</i>	3			3							6
<i>C. porosus</i>	7166	10042	15928	13036	14590	12648	18781	20021	21476	1139 ²	134827
<i>C. rhombifer</i>									99	40	139
<i>C. siamensis</i>	981	2050	1713	2808	1400	102	23	2067	5470	557	17171
<i>Gavialis gangeticus</i>											0
<i>Tomistoma schlegelii</i>											0
Total	115,419	128,670	180,968	230,248	245,082	273,167	358,803	447,010	398,377	186,021	2561338

* Data deficient

Gross exports from the USA

¹ Net trade should be at least 52,000 (see note on Zimbabwe's trade in *Crocodylus niloticus*)

² Net trade should be at least 16,000 (see note on Australia's trade in *Crocodylus porosus*)

The growth of ranching and captive-breeding programmes has increased international competition. The increasing production of *Alligator mississippiensis* and *Crocodylus niloticus* has had marked effects on trade in other classic skins. *Crocodylus novaeguineae*, once the main species in trade, was superseded by *A. mississippiensis* in 1987 and by *Crocodylus niloticus* in 1991. In the United States, Louisiana alone produced 128,300 farmed skins and 23,500 wild skins in 1993.

The increase in trade in *Crocodylus niloticus* skins has been largely due to the success of the ranching operations in Zimbabwe. Total minimum net exports grew from around 6,000 in 1984 to 123,000 in 1995; in this year nearly half of the skins derived from Zimbabwe. Skin exports from other countries, particularly Kenya, Mozambique, South Africa and Zambia also showed a general rising trend over this period. Most of the Appendix II exports have been within agreed quotas.

Minimum net trade in skins of *Crocodylus novaeguineae* reached a peak of 47,674 in 1990 and declined to 2758 in 1996.

Trade in skins of *Crocodylus porosus* declined from nearly 16,000 in 1989 to 12,648 in 1992 but rose again to 21,000 in 1995. The main producer of these skins was Papua New Guinea. Combined stocks on all farms in Papua New Guinea declined from a peak of 42,500 to 38,000 in 1994 (15,649 *Crocodylus porosus* and 22,444 *Crocodylus novaeguineae*). As a result of the deterioration in the price of live *Crocodylus porosus*, there was an increase in the share of grade I and grade II wild skin exports in 1994. The purchasing conditions that have evolved since 1992 in this farm, have thus been targeted towards discouraging trade in *C. novaeguineae* (Fernandez and Luxmoore, 1995).

The import market, as well as the export market, underwent some changes from 1991 to 1996. Asia became the principal destination of classic skins.

Singapore was the main importer of *Crocodylus johnsoni* skins from 1990-1995, importing 90% of all exported skins in 1993; correspondingly, imports to Japan declined over this period to 0.1% in 1993. Singapore was also the principal destination of *Crocodylus niloticus* skins, imports rising by approximately 45,000 from 1991 to 1993. Japan was the second largest importer of *C. niloticus* skins, with imports rising to 31636 in 1994. France imported 49% of total world exports in 1991 but only 5% (a drop of over 22,000 skins) in 1993. Singapore imported skins from only two sources in 1991: Guinea and Zimbabwe, but in 1993 it imported skins from eight source countries.

Japan was the largest importer of *Crocodylus novaeguineae* skins during the period 1991-1996. France, once the major destination of these skins (in 1989) was no longer a significant importer. Japan was the major importer of *Crocodylus porosus* skins since 1988, with imports rising steadily from 6347 in that year to 12,516 in 1995. France was the second most important destination, importing 6175 in 1995.

France, Italy, Japan, Singapore and Switzerland were the main importers of skins *Alligator mississippiensis*.

In 1988, trade in Caiman skins was in the region of 800,000, which declined to a minimum of 285,758 in 1991. However, reported trade then grew to 410,375 in 1992 and 1,075,187 in 1995. This growth was largely the result of an enormous increase in reported exports from Colombia, amounting to more than double from 1992 to 1993. Europe (Italy, France, Switzerland) and Asia (Singapore, Japan, Hong Kong, China and the Republic of Korea) were the major destinations for Caiman skins. There is a substantial tanning and manufacturing industry in Europe, particularly in Italy, France and Switzerland, and crocodile skin products are re-exported to destinations all around the world.

There have been few reported incidents of illegal trade activities from 1992 to 1996. Where this information was available, it has been included under the relevant species sections. There had been concerns about CITES not being implemented in Italy and Thailand. In 1991, the CITES Standing Committee proposed a CITES Trade Ban with Thailand and in 1992, one with Italy. It was recommended that Parties adopt stricter domestic measures in accordance with Article XIV, paragraph 1 of the Convention. These bans were lifted in April 1992, for Thailand, and in February 1993, for Italy.

International trade in crocodile skins was threatening wild populations in many countries in the 1960s and 1970s. The rapid and increasing growth since the late 1980s caused problems associated with over-production. The characteristics associated with this growth in the 1990s included: increasing international competition, instability in world skin prices, and the reduction of the number of populations of species important in trade. Smaller captive-breeding operations, especially those that trade in the less economically important species, are facing economic problems. In many cases, this has led to bankruptcy and the subsequent closure of farms and selling of stock, the value of which may have been much reduced. Other establishments chose not to sell their stock, or were unable to, and instead converted their establishments into tourist attractions or zoos.

Changes to the CITES listings of crocodilians, 1975-1997
(taken from WCMC, 1998)

CROCODYLIA					
CROCODYLIA spp.	II*		04/02/77		Includes/Incluida/Inclut Alligatoridae, Crocodylidae & Gavialidae
ALLIGATORIDAE					
<i>Alligator mississippiensis</i>	I		01/07/75		
	II		28/06/79		Included with/Incluida en/Inclus dans CROCODYLIA spp.
<i>Alligator sinensis</i>	I		01/07/75		
<i>Caiman crocodilus apaporiensis</i>	I		01/07/75		Syn./Sin./Syn. <i>C. sclerops apaporiensis</i>
<i>Caiman crocodilus crocodilus</i>	II		01/07/75		
	II		04/02/77		Included with/Incluida en/Inclus dans CROCODYLIA spp.
	II/r	SG	28/02/87		
	II/w	SG	15/02/92		
<i>Caiman crocodilus fuscus</i>	II		01/07/75		
	II		04/02/77		Included with/Incluida en/Inclus dans CROCODYLIA spp.
<i>Caiman latirostris</i>	I**		01/07/75		
	I/r	IT	31/12/79		
	I/w	IT	01/01/84		
	II*		18/09/97		Popn of /Población de/Pop. d'AR
<i>Caiman yacare</i>	II		01/07/75		Syn./Sin./Syn. <i>C. crocodilus yacare</i> ; Includes/Incluida/Inclut <i>C. crocodilus matogrossiensis</i> , <i>C. crocodilus paraguayensis</i>
	II		04/02/77		Included with/Incluida en/Inclus dans CROCODYLIA spp.
<i>Melanosuchus niger</i>	I		01/07/75		
	I/r	FR	09/08/78		
	I/w	FR	10/12/84		
	I**		16/02/95		All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II*		16/02/95		Popn of EC (subject to quota from 1997)/Población de la UE (sujeta a cupo desde 1997)/Pop. d'EC (contingentée à partir de 1997); Included with/Incluida en/Inclus dans CROCODYLIA spp.
<i>Palaeosuchus palpebrosus</i>	II		01/07/75		
	II		04/02/77		Included with/Incluida en/Inclus dans CROCODYLIA spp.
<i>Palaeosuchus trigonatus</i>	II		01/07/75		
	II		04/02/77		Included with/Incluida en/Inclus dans CROCODYLIA spp.
CROCODYLIDAE					
<i>Crocodylus acutus</i>	II		01/07/75		
	I		28/06/79		Popn of /Población de/Pop. d'US
	I/r	CH	28/06/79		
	II		28/06/79		All popns except those listed on I/Todas las poblaciones excepto las incluidas en el Apéndice I/Toutes pop. sauf celles de I
	I		06/06/81		Remaining popns/poblaciones restantes/Pop. restantes
	I/w	CH	06/06/81		
<i>Crocodylus cataphractus</i>	I		01/07/75		
	I/r	FR	09/08/78		
	I/r	IT	31/12/79		
	I/r	ZM	22/02/81		
	I/r	AT	27/04/82		
	I/w	IT	01/01/84		

	I/w	FR	10/12/84	
	I/w	ZM	26/08/87	
	I		22/10/87	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		22/10/87	I → II: popn of/población de/pop. de CG
	I/w	AT	06/01/89	
	I		11/06/92	II → I: popn of /población de/pop. de CG; All popns again on I/Todas las poblaciones en el Apéndice I/Toutes pop. retransférées à I
<i>Crocodylus intermedius</i>	I		01/07/75	
<i>Crocodylus johnsoni</i>	II		01/07/75	Syn./Sin./Syn. <i>Crocodylus johnstoni</i>
	II		04/02/77	Included with/Incluida en/Inclus dans CROCODYLIA spp.
<i>Crocodylus moreletii</i>	I		01/07/75	
<i>Crocodylus niloticus</i>	I		01/07/75	
	I/r	BW	12/02/78	
	I/r	FR	09/08/78	
<i>Crocodylus niloticus</i> (cont.)	I/r	IT	31/12/79	
	I/r	ZM	22/02/81	
	I/r	ZW	17/08/81	
	I/r	SD	24/01/83	
	I		29/07/83	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		29/07/83	I → II: popn of/población de/pop. de ZW
	I/w	IT	01/01/84	
	I/w	FR	10/12/84	
	I		01/08/85	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		01/08/85	I → II: popns of/poblaciones de/pop. de CG, CM, KE, MW, MZ, SD, TZ, ZM; Subject to quota: popn of MG/Sujeta a cupo población de MG/Contingentée à partir pop. de MG; Still on II: popn of ZW/Aún en II: población de ZW/Encore à II: pop. de ZW
	II/r	AT	01/08/85	
	I		03/01/87	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	I/r	AT	03/01/87	Transfer of BW popn to II with export quotas/Transferencia de la población de BW al Apéndice II con cupos de exportación/Transfer de la pop. du BW à II avec quotas d'exportation
	II		03/01/87	I → II: subject to quota: popn of BW/sujeta a cupo población de BW/contingentée à partir pop. de BW; Still on II: popns of /Aún en II: poblaciones de/Encore à II: pop. de CG, CM, KE, MW, MZ, SD, TZ, ZM, ZW; Subject to quota: popn of MG/Sujeta a cupo población de MG/Contingentée à partir pop. de MG
	I/w	ZW	02/04/87	
	I/w	ZM	26/08/87	
	II/w	AT	06/01/89	
	I		18/01/90	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		18/01/90	I → II: subject to quota: popns of/sujeta a cupo poblaciones de/contingentée à partir pop. d'ET, SO (1990-92); Ranched popns of/poblaciones criadas en granjas de/pop. élevées en ranch de BW, MW, MZ, ZM; Still on II: popns of/Aún en II: poblaciones de/Encore à II: pop. de CG, CM, KE, SD, TZ, ZW;

				Subject to quota: popn of MG/Sujeta a cupo población de MG/Contingentée à partir pop. de MG
	I/w	SD	26/04/90	
	I/w	AT	26/09/90	
	I/w	BW	26/10/90	
	I		11/06/92	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		11/06/92	II → I: popns of/poblaciones de/pop. de CG, CM I → II: popn of/población de/pop. de ZA; Subject to quota: popn of UG/Sujeta a cupo población de UG/Contingentée à partir pop. de UG; Ranched popns of/poblaciones criadas en granjas de/pop. élevées en ranch de ET, KE, TZ; Still on II: popns of/Aún en II: poblaciones de/Encore à II: pop. de SD, ZW; Subject to quota: popns of/Sujeta a cupo poblaciones de/Contingentée à partir pop. de MG, SO (1990-92); Ranched popns of/Poblaciones criadas en granjas de/Pop. élevées en ranch de BW, MW, MZ, ZM
	I		11/07/92	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		11/07/92	II → I: popn of SD/población de SD/pop. de SD; Still on II: popns of /Aún en II: poblaciones de/Encore à II: pop. de ZA, ZW; Subject to quota: popns of/Sujeta a cupo poblaciones de/Contingentée à partir pop. de MG, SO (1990-92), UG; Ranched popns of/Poblaciones criadas en granjas de/Pop. élevées en ranch de BW, ET, KE, MW, MZ, TZ, ZM
<i>Crocodylus niloticus</i> (cont.)	I		16/02/95	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II		16/02/95	Ranched popns of/Poblaciones criadas en granjas de/Pop. élevées en ranch de ZA; Still on II: popn of ZW/Aún en II: población de ZW/Encore à II: pop. de ZW; Subject to quota: popns of/Sujeta a cupo poblaciones de/Contingentée à partir pop. de MG, UG; Ranched popns of/Poblaciones criadas en granjas de/Pop. élevées en ranch de BW, ET, KE, MW, MZ, TZ, ZA, ZM
	I**		18/09/97	All popns except those listed on II/Todas la poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	II*		18/09/97	Ranched popn of/Población criadas en granjas de/Pop. élevées en ranch de MG, UG; Subject to quota: part of popn of TZ /Sujeta a cupo parte de la población de TZ/Contingentée à partir partie de pop. de TZ. Still on II: popns of ZW/Aún en II: poblaciones de ZW/Encore à II: pop. de ZW; Subject to quota: part of popns of/Sujeta a cupo parte de las poblaciones de/Contingentée à partir partie de pop. de TZ; Ranched popns of/Poblaciones criadas en granjas de/Pop. élevées en ranch de BW, ET, KE, MG, MW, TZ (part/parte/partie), UG, ZA, ZM.
<i>Crocodylus novaeguineae</i>	II		01/07/75	Except subspecies/Excepto las subespecies/Sauf la sous-espèce <i>mindorensis</i>
	II		04/02/77	Included with/Incluida en/Inclus dans CROCODYLIA spp.
	II/r	SG	28/02/87	
	II/w	SG	31/08/90	

<i>Crocodylus novaeguineae mindorensis</i>	I		01/07/75	Syn./Sin./Syn. <i>Crocodylus mindorensis</i>
<i>Crocodylus palustris</i>	I		01/07/75	
<i>Crocodylus porosus</i>		II	01/07/75	
	I		28/06/79	II → I: All popns except those listed on II/Todas las poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
	I/r		CH 28/06/79	
	I/r		DE 28/06/79	
	I/r		FR 28/06/79	
		II	28/06/79	Popn of /Población de/Pop. de PG
	I/r		IT 31/12/79	
	I/r		JP 04/11/80	
	I/r		AT 27/04/82	
	I/w		DE 02/07/82	
	I/w		CH 01/01/83	
	I/r		TH 21/04/83	
	I/w		IT 01/01/84	
	I**		01/08/85	All popns except those listed on II/Todas las poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
		II*	01/08/85	I → II: popn of /población de/pop. d'AU. ID. Still on II: popn of PG/Aún en II: población de PG/Encore à II: pop. de PG
		II/r	AT 01/08/85	
	I/r		SG 28/02/87	
		II/r	SG 28/02/87	
	I/w		TH 17/08/87	
	I/w		AT 06/01/89	
		II/w	AT 06/01/89	
	I/w		JP 30/11/89	
	I/w		SG 31/08/90	
<i>Crocodylus rhombifer</i>	I		01/07/75	
<i>Crocodylus siamensis</i>	I		01/07/75	
	I/r		TH 21/04/83	
	I/w		TH 17/08/87	
<i>Osteolaemus tetraspis</i>	I		01/07/75	
	I/r		FR 09/08/78	
	I/w		FR 10/12/84	
	I		22/10/87	All popns except those listed on II/Todas las poblaciones excepto las incluidas en el Apéndice II/Toutes pop. sauf celles de II
		II	22/10/87	Popn of/Población de/Pop. de CG
	I		11/06/92	II → I: popn of/población de/pop. de CG; All popns again on I/Todas las poblaciones en el Apéndice I/Toutes pop. retransférées à I
<i>Tomistoma schlegelii</i>	I		01/07/75	
GAVIALIDAE				
<i>Gavialis gangeticus</i>	I		01/07/75	

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