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**WORLD TRADE IN CROCODILIAN SKINS,
1988-1989**

Prepared under contract
to the International Alligator and Crocodile Trade Study

by

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INTRODUCTION

Two previous reports for the International Alligator and Crocodile Trade Study have examined the world trade in crocodylian skins from 1980 to 1987. The present report is intended to analyse new information for 1988 and 1989, retaining information from previous years for comparative purposes. Because of the interaction between the trade in classic skins (alligators and true crocodiles) and the caiman skin trade, it was decided to include data on the latter, representing, as they do, the greater proportion of the world's crocodylian skin trade.

METHODS

This report is based on an analysis of the annual reports submitted by the Parties to CITES for the years 1988 and 1989. A list of annual reports received at the time of writing is given in Table 1. Notable reports not available were those of Australia, Indonesia and Thailand. In order to be comparable with previous IACTS reports, all trade in whole skins and sides of crocodylian species was analysed. One skin was taken to comprise two sides. Trade reported in units of weight, area or length was excluded. Where the number of skins reported by the importing country was different from the number reported by the exporting country, the higher of the two quantities was used. Gross exports from all countries were summed to show the gross world trade. Net imports, taken as the positive difference between gross imports and gross exports, were summed to give the net world trade. The quantity of skins originating in the major source countries within the range of each species was estimated by calculating net world trade for each reported country of origin (or export, where no origin was declared). This was slightly different from previous IACTS studies which used gross trade; however, many countries re-export substantial quantities of skins and so the net trade was considered to give a more reliable estimate of the total quantity of skins in trade.

Another departure from previous studies was the inclusion of data for *Caiman crocodylus*. The difficulties of calculating net trade in *Caiman* skins are discussed in the relevant section of the report. Exports of manufactured products (wallets, watchstraps, handbags, pairs of shoes, leather items and garments) of this species from Europe were also analysed.



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Table 1. CITES annual reports for 1988 and 1989 available in the database for this analysis.

<u>Country</u>	<u>1988</u>	<u>1989</u>	<u>Country</u>	<u>1988</u>	<u>1989</u>
Algeria	*	*	Madagascar	*	*
Argentina	*	*	Malawi	*	*
Australia	*		Malaysia	*	*
Austria	*	*	Malta	*	*
Bahamas	*	*	Mauritius	*	*
Belgium	*	*	Monaco	*	*
Bermuda	*	*	Morocco	*	*
Bolivia	*		Nepal	*	*
Botswana	*	*	Netherlands	*	*
Cameroon	*		Nicaragua	*	*
Canada	*	*	Niger	*	*
Cayman Is	*	*	Nigeria	*	*
Chile	*	*	Norway	*	
China	*	*	Pakistan	*	*
Colombia	*	*	Panama	*	*
Congo	*	*	Papua New Guinea	*	
Costa Rica	*	*	Paraguay	*	
Denmark	*	*	Portugal	*	*
Ecuador	*		Senegal	*	
Finland	*	*	Singapore	*	*
France	*	*	South Africa	*	*
Gabon		*	Spain	*	*
Germany, FR	*	*	Sri Lanka	*	*
German DR		*	St Lucia	*	
Ghana	*	*	Suriname	*	*
Greece	*	*	Sweden	*	
Greenland	*	*	Switzerland	*	*
Guinea	*	*	Tanzania	*	
Guyana	*		Togo	*	*
Hong Kong	*	*	Trinidad & Tobago	*	*
Hungary	*	*	Tunisia	*	*
India	*	*	UK	*	*
Indonesia	*		Uruguay	*	
Ireland	*	*	USA	*	*
Italy	*	*	USSR	*	*
Japan	*	*	Vanuatu		*
Jordan	*		Venezuela	*	
Kenya	*		Zaire	*	*
Liberia	*		Zambia	*	
Luxembourg	*	*	Zimbabwe	*	

Crocodylus acutus American crocodile

A total of only 60 skins of *C. acutus* were recorded in trade in 1988 and 1989, of which 59 were reported as exports by Switzerland as pre-Convention stock or originating in Argentina, a country outside the range of the species.

Table 2. Minimum world trade in *Crocodylus acutus* skins

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

Table 3. Minimum gross trade in *Crocodylus acutus* skins reported as exported from or originating in countries in which the species occurs

Origin	1983	1984	1985	1986	1987	1988	1989
Belize			1				
Guatemala			1		1		
Mexico	1	1	521	1			
Unknown	8				3		

Crocodylus cataphractus African Sharp-nosed or Slender-snouted Crocodile

Table 4. Minimum world trade in *Crocodylus cataphractus* skins

	1983	1984	1985	1986	1987	1988	1989
Gross	12679	2030	59	11	149	1193	570
Net	7615	2030			149	1193	570

Table 5. Minimum net trade in *Crocodylus cataphractus* skins reported as exported from or originating in countries in which the species occurs

Origin	1983	1984	1985	1986	1987	1988	1989
Congo	4967	2030		9		1193	559
Gabon	2044			1			
Nigeria					149		11
Sierra Leone				1			
Zaire			57				
Unknown			2				

The population of *C. cataphractus* in Congo was transferred to Appendix II in 1987 subject to an annual quota of 600. Exports were reported as 1193 in 1988 and 559 in 1989. It thus seems that skins from the 1988 quota were not exported until the following year. All were imported by France. The only other skins noted were 11 from Nigeria, seized on entry into the USA in 1989.

1. Introduction

2. Methodology

3. Results

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5. Conclusion

6. References

7. Appendix

8. Acknowledgements

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Crocodylus johnsoni Australian Freshwater Crocodile

Table 6. Minimum world trade in *C. johnsoni* skins

	1983	1984	1985	1986	1987	1988	1989
Gross	624	157			833	1281	676
Net	624	157			824	1274	676

The first recent exports of skins of *C. johnsoni* were authorised in 1987, after which they rose to a net figure of 1274 in 1988. The Australian annual report for 1989 was not available for this analysis which probably explains the low figure in that year. Almost all of the exports were to Japan in 1988. One as yet unsolved mystery is the reported import to the USA of 608 skins of *C. johnsoni* from Mali in 1987 and a further 34 skins in 1988 - both presumably errors, but it is strange that they should have been repeated in successive years.

Crocodylus moreletii Morelet's Crocodile

A total of 22 *C. moreletii* skins were reported in 1988 and 1989, almost all as illegal imports to the USA from Mexico.

Crocodylus niloticus Nile Crocodile

Table 7. Minimum world trade in *C. niloticus*

	1983	1984	1985	1986	1987	1988	1989
Gross	34879	6510	10533	19507	23548	31252	45626
Net	28983	6115	9378	18480	22974	27525	40253

Minimum net trade in *C. niloticus* has risen from 6115 in 1984 to 40,253 in 1989 (Table 7). The majority of these derived from the ranching programme in Zimbabwe but the other Appendix populations in African Countries accounted for a further 31,772 skins (Table 8). The main Appendix I skins traded have been from captive breeding operations in South Africa, whose output has risen to nearly 4560 in 1989.

Appendix I imports have included 45 from Guinea Bissau, seized on entry to Spain and 1843 from Mali reported to have been imported by France. There is no explanation of why France should have permitted such an import.

Most of the Appendix II imports have been within the agreed quotas (Table 10) but there were some notable exceptions. In 1989 France recorded the import of 4542 skins from Madagascar, and Italy imported a further 376. As the total quota for 1989 was 1000 skins, the EC countries reported imports of nearly five times the permitted quantity. Imports from Malawi also exceeded the quota, but by a smaller margin. The excess appears to have been due to the import of 500 skins reported by South Africa but not by Malawi. Exports from Tanzania exceeded the quota in 1988, but this may have been due to the inclusion of some skins from the previous year's quota.

The main importing country was France which took over half of the skins, but Japan was the second most important destination of skins in 1989. Most of the remaining skins were imported to other European countries, notably Belgium, Italy, Switzerland and Austria (Table 9).



Table 8. Minimum net trade in *C. niloticus* skins reported as exported from or originating in countries in which the species occurs.

Origin	1983	1984	1985	1986	1987	1988	1989
Appendix I populations							
Botswana*	2		4	10			
Ethiopia							1
Guinea Bissau							45
Mali							1843
Nigeria			3				1
South Africa*	25					1905	4560
Unknown					10	1	7
Appendix II populations							
Botswana				10	65	69	203
Cameroon						3	2
Congo				332	649	150	150
Kenya					150	1400	2501
Madagascar			4	676	3610	3177	4918
Malawi				503	572	1829	2603
Mozambique						795	1705
Sudan			2045	3453	3153	2526	6457
Tanzania				763	1724	2316	1751
Zambia			890	2954	3231	3739	2354
Zimbabwe	401	4272	5332	7217	7925	11609	14489

Table 9. Net imports of *C. niloticus* skins to major importing countries

* net exporter in this year

Importer	1985	1986	1987	1988	1989
Austria	196	148	151	468	1210
Belgium	595	195	3	1003	4012
Botswana				359	
France	7217	10543	19770	17390	25310
Germany, FR	23	426	303	348	
Italy	112	555	1609	4539	2988
Japan	284	1592	896	1456	4338
South Africa	*	921	*	90	
Spain	*	273	*		
Switzerland	242	1712	15	770	2206
UK				632	
USA	207	9	6	108	132

Date	Description	Amount
1890	Jan 1	
	Feb 1	
	Mar 1	
	Apr 1	
	May 1	
	Jun 1	
	Jul 1	
	Aug 1	
	Sep 1	
	Oct 1	
	Nov 1	
	Dec 1	
	Total	

Table 10. Export quotas for different populations of *Crocodylus niloticus* transferred to Appendix II under the special criteria set out in Resolutions Conf. 5.21 and 7.14.

* ranching programme accepted W = Wild R = Rached

		1986	1987	1988	1989	1990	1991	1992
Botswana	W		2000	2000	2000	*	*	*
Cameroon	W	20	100	100	100			
Congo	W	1000	150	150	150			
Ethiopia	W					20	20	20
	R					9300	8800	8800
Kenya	W	150	1000	1000	1000			
	R		4000	4000	4000	5000	6000	8000
Madagascar	W	1000	1000	3784	1000			
	R						2000	4000
Malawi	W	500	700	700	700	*	*	*
	R		200	1000	1600			
Mozambique	W	1000	1000	1000	1000	*	*	*
	R				3000			
Somalia	W					500	500	500
Sudan	W	5000	5000	5000	5000	5040		
Tanzania	W	1000	2000	2000	2000	1000	1000	
	R						4000	6000
Zambia	W	2000	2000	2000	2000	*	*	*
	R		1350	3600	6200			

Crocodylus novaeguineae New Guinea Crocodile

Table 11. Minimum world trade in *C. novaeguineae* skins

	1983	1984	1985	1986	1987	1988	1989
Gross	34983	34539	49097	43599	40830	41725	47818
Net	27352	29156	43027	33938	37890	34728	38235

Table 12. Minimum net trade in *C. novaeguineae* skins reported as exported from or originating in countries in which the species occurs.

Origin	1983	1984	1985	1986	1987	1988	1989
Indonesia	6975	7632	17331	5494	1227	10053	1460
Malaysia			115				
PNG	29471	21987	27916	29465	32071	24397	23621
Unknown	1106	592		3	59	426	85

Minimum net trade in skins of *C. novaeguineae* rose from 27,325 in 1983 to 38,325 in 1989. The majority of these skins were reported to have originated in Papua New Guinea, with lesser quantities from Indonesia. The low quantity from Indonesia in 1989 is probably because the Indonesian annual report was unavailable for this analysis. Information from elsewhere (Anon. 1991) suggests that permits were issued for the export of approximately 12,000 *C. novaeguineae* skins from Indonesia in 1989. The other factor which may have contributed to low trade figures was the holding of a reservation by Singapore. There have been reports of a substantial illegal trade in skins from Irian Jaya to Singapore which does not appear in the statistics. Singapore dropped its reservation for the species in 1990. Whereas previously Japan had been the main destination of skins of this species, France was the main importer in 1989.

***Crocodylus porosus* Saltwater Crocodile**

Table 13. Minimum world trade in *C. porosus* skins.

	1983	1984	1985	1986	1987	1988	1989
Gross	7169	6431	8062	8183	7684	11303	16526
Net	5398	5358	6497	5752	7166	10042	13902

Table 14. Minimum net trade in *C. porosus* skins reported as exported from or originating in countries in which the species occurs.

Origin	1983	1984	1985	1986	1987	1988	1989
Australia		100	98	400	499	1324	2508
Indonesia	345	200	1094	851	949	2670	4081
Malaysia	56						
Papua New Guinea	4562	5239	5005	3910	6506	5758	7404
Philippines							1
Singapore	3	74	74	948	71	57	
Thailand			300	14	400	450	
Unknown	529	46		2	6		1

Table 15. 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.

	1985	1986	1987	1988	1989	1990	1991
Wild				4000	3000	3000	3000
Ranched					2000	3000	5000

Minimum net trade in skins of *C. porosus* has increased from 5398 in 1983 to 13,902 in 1989. Skins from Papua New Guinea have fluctuated from 3910 to 7404 but those from Indonesia have increased from 200 in 1984 to 4081 in 1989 (Table 14). The country's population of this species was transferred to Appendix II in 1985 under a quota system, the quotas being shown in Table 15. Exports from Australia have also increased as the ranching programme has started to produce skins. Singapore held a reservation on this species until 1989 and so did not report trade before then. It is believed that additional skins have been illegally exported from Indonesia via Singapore. The majority of the skins have been imported to Japan, but France was the next most important destination (Table 16). The volume of the unreported trade is but

unknown was estimated to be 30,000 - 40,000 a year for both *C. porosus* and *C. novaeguineae* combined in 1987 (Ashley, 1989). It is to be expected that the withdrawal of reservations by Singapore will reduce the illegal trade.

Table 16. Net imports of *C. porosus* skins to major importing countries.

* Net exporter in this year

Importer	1985	1986	1987	1988	1989
France	2531	4107	3437	2835	5217
Italy	*	*	134	*	*
Japan	3132	1346	3210	6347	7984
Singapore	231	*	*	335	1
Switzerland	216	195	305	259	108
UK	362			*	*
USA				211	530

Crocodylus siamensis Siamese Crocodile

Table 17. Minimum world trade in *C. siamensis* skins

	1983	1984	1985	1986	1987	1988	1989
Gross		800	351	663	981	2050	1715
Net		800	351	605	981	2050	1714

Exports of *C. siamensis* from Thailand grew from 0 in 1983 to over 2000 in 1988. All are 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, imported to Italy. Since Thailand has not submitted annual reports for 1988 and 1989, all the trade was recorded by the importing countries. Output from the farm was said to be 2220 and 2700 in these two years respectively (Youngprapakorn *in litt.*, 1990).

Alligator mississippiensis American Alligator

Most skins of *Alligator mississippiensis* which enter world trade are exported from the USA to Europe for tanning and are subsequently reimported to the USA. Since neither of the usual measures of CITES trade (gross or net world trade) give an accurate estimate of the total production of skins, it is better to use gross exports from the USA. These are shown in Table 18 where it can be seen that they have risen from 20,000 in 1983 to nearly 80,000 in 1989. They originate mainly from Louisiana and Florida, from a combination of wild harvest, ranching and captive breeding. An alligator farming industry has recently become established in Texas and Georgia.

As in previous years, France and Italy have been the major destinations, importing about 60-80% of the gross exports from the USA (Table 19). Many skins are subsequently re-exported to the USA after tanning but the total quantity of skins retained in France and Italy was 29,150 in 1988 and 43,041 in 1989. This represents over half the gross exports.

Table 18. Exports of *Alligator mississippiensis* skins

	1983	1984	1985	1986	1987	1988	1989
Gross US exports	20069	21519	20718	33278	45184	51838	77810
Gross world trade	38997	32388	29467	43843	57458	66707	100492
Net world trade	16913	12968	13228	23907	33078	38705	61590

Table 19. Principal destinations of US exports of *A. mississippiensis* skins. The percentage of gross US exports is shown in brackets.

Destination	1983	1984	1985	1986	1987	1988	1989
France	10676	9236	9051	12947	28610	22989	38214
	(53%)	(43%)	(43%)	(39%)	(63%)	(44%)	(49%)
Italy	3981	5393	5590	12708	9455	19953	25546
	(20%)	(25%)	(27%)	(38%)	(21%)	(38%)	(19%)

***Caiman crocodilus* Spectacled Caiman**

The calculation of trade in *Caiman crocodilus* skins is very much more difficult than for other species of crocodylian because of the great variety of methods of reporting. Trade may be reported in any one of three subspecies and as either skins or sides. There are several instances where the same trade has 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. Total net trade calculated as above and therefore subject to these limitations has varied from 0.3 to 1.5 million between 1983 and 1989. Most of the trade in 1988 and 1989 is reported to have originated in Venezuela, Guyana, Colombia and Paraguay (Table 20). All of these countries except Paraguay have legal exports of skins and so the majority of trade reported to CITES since 1988 appears to have been legal. The Paraguayan skins were mostly re-exported from Argentina to Switzerland and subsequently France.

Europe is the major destination of *Caiman* skins recorded in CITES annual reports, Italy and France being the main importing countries (Table 21). However, there is believed to be a large volume of trade which is not recorded in these statistics. Pani (in prep., 1991) documented several instances where skins of *Caiman crocodilus* have been intercepted on import to Italy with inaccurate or forged documentation and believed that many more illegal shipments entered the country undetected.

Brazil has prohibited all exports of wildlife since 1967 and yet there is known to be much illegal hunting of caimans, particularly in the Pantanal in the south of the country. Skins are exported by a variety of routes but a large number have been intercepted in Paraguay. One large consignment was trans-shipped off the coast of Uruguay and tracked to its destination in the Far East in (Anon., 1988). Another shipment was intercepted in Belgium, en route from Argentina to Italy with false export documents (Anon., 1989). Aruba and the Netherlands Antilles are also known to serve as an outlet for Brazilian skins from the north of the continent, several hundred thousand skins having recently been located in warehouses there (Menghi, pers. comm.). Most of these clearly do not appear in the CITES statistics and alternative means must be used to trace their eventual destination. Retail shops in

Table 20. Reported countries of origin of *Caiman crocodilus* skins derived from CITES annual reports, 1983-1988.

Origin	1983	1984	1985	1986	1987	1988	1989
Argentina	8262	1668	1200	6000	54226	5654	1110
Bolivia	43500	15325	171457	27352	24182	166164	14423
Brazil		835					
Br Virgin Is			8000				
Canada	1						
Colombia	188094	108334	54644	35161	40708	82233	40010
Costa Rica	12				2000		
El Salvador	27982	174947	207644	118602	20066	7375	9173
France	28		4135		1		
F Guiana	7887		489				
Germany, FR	15			197			
Guatemala		116234	349685	26288	12851	33341	8587
Guyana	1130	72950	108408	41350	47905	76824	64768
Haiti	55						
Honduras		41705	59466		7907	15865	40
Hong Kong				6			
Indonesia	130			379	267		
Italy	300			50	632		
Japan	13		1940				
Korea, Rep.					409		
Mexico		1			1		2
Netherlands Antilles	4						
Nicaragua		1	246	210	863	100	75
Nigeria					187		
Panama	85155	18378	23845	253	66	76	210
PNG						4269	
Paraguay	909303	700028	212273	143635	45357	53707	11725
Peru	235			2855			
Singapore				15867	105393	37413	
S. Africa	4	1			183	150	
Spain			4				
Suriname	39				1		1
Switzerland		1076					
Taiwan		152		1133	1382		
Thailand			1				
UK	5151		154				
USA	3200			635	972		8
Venezuela		3487	125566	128095	73990	224650	154858
Zimbabwe		28					
Unknown	85906	79398	113711	58134	24891	86944	2175
TOTAL	1366406	1334548	1442868	606202	464440	794765	307165

Table 21. Minimum net imports of *Caiman crocodilus* skins to EC countries.

IMPORTER	1983	1984	1985	1986	1987	1988	1989	Av
Belgium	156	0	2955	0	0	0	84	456
Denmark	22	0	0	0	28	0	81	19
France	8370	365828	275285	140912	42124	102208	20600	136475
Germany, FR	212958	2200	32160	1478	2082	389	37980	41321
Greece	20	1161	385	429	234	0	0	318
Italy	430608	292738	661404	236342	117947	194346	7820	277315
Netherlands	367	15000	0	0	897	9	0	2325
Portugal	0	0	0	102	147	234	0	69
Spain	13755	13333	13722	25651	16242	4569	438	12530
UK	3276	672	4934	5223	1027	6163	4005	3614
Total	671515	692916	992830	412123	182715	309906	72997	474442

Table 22. Imports of crocodile skins (410112/4103.200-209) and crocodile leather (410512 and 410522/4107.210-201) recorded in Thailand Customs statistics (kg).

* January-October only.

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	*1990
SKINS														
Colombia											410	10444	17509	31108
PNG										4				
Singapore			1975		817	2422	3956	2387	2912	8384	88029	5415	8215	9486
USA					540									
Venezuela											10013	202997	43297	49654
Other								150					1413	
TOTAL			1975		1357	2422	3956	2537	2912	8388	98452	218856	70434	90248
LEATHER														
Colombia			78	87							15	168	793	1790
Italy			103	15							2			
Panama			90	70										
Singapore	2449	1152	1105	1008	205	190	45	146	86	11	26		645	1755
S. Africa			78	285					8					
USA				65									16	10
Venezuela												226	200	284

TOTAL	2449	1152	1454	1530	205	190	45	146	94	11	43	394	1654	3839
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Singapore and Thailand have been reported to have huge quantities of caiman skin products on sale and this trade may be facilitated by Singapore's having taken a reservation on *Caiman crocodilus* when it joined CITES in 1987. The reservation was withdrawn on 1 February 1992.

Singapore Customs statistics no longer specify crocodile skins separately, mixing them instead with skins of fish and other reptiles, but the Thai Customs statistics have a separate category for crocodile skins. These are shown in Table 22. Both skin and leather are reported but skin is by far the greater quantity. Imports rose rapidly from around 2-3 tonnes prior to 1985 to 219t in 1988. In the first ten months of 1990, some 90t were imported. The main sources have been Colombia, Singapore and Venezuela, suggesting that the skins have been of *Caiman crocodilus* rather than another species of crocodilian.

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 few exports of crocodilian skins to Thailand, although there were 14,000 in 1988 and 840 in 1989. It would appear that the remainder of the trade has taken place entirely outside CITES control. There is no reliable way to convert the trade reported by weight to numbers of skins because much depends on the cut and method of preservation. Dixon *et al.* (1988) estimated that the mean weight of *Caiman crocodilus* skins imported to Japan was 260g and, using this figure, the Customs statistics suggest imports of about 840,000 skins in 1988, 277,000 in 1989 and over 362,000 skins in 1990. This is far in excess of the legal trade reported to CITES.

Most of the skins imported to Europe are manufactured into leather goods for use within Europe or for export. Net exports of the main categories of manufactured products from Italy and France in 1988 and 1989 are shown in Tables 23-26, showing the declared countries of origin. Over these two years, France exported a total of 914 wallets, 1,379,059 watchstraps, 380 pairs of shoes, 954 handbags, 55,417 leather items and 132 garments. Italy exported 14,418 wallets, 127,838 watchstraps, 251,076 pairs of shoes, 35,493 handbags, 178,191 leather items and 1908 garments.

It is difficult to predict with accuracy how many leather products can be manufactured from a given number of skins and moreover a certain, possibly large, percentage of the products are retailed within Europe. Thus there is little useful that can be said about the quantities of products exported. However, the proportions of skins and products reported from different countries of origin are more instructive. The countries from which the constituent skins were said to have originated bear some resemblance to those from which skins were imported (Tables 27-28) but there are some notable differences in the proportions from each source. Figure 1 shows the numbers of skins imported to France from different countries in the period 1987-89 and the numbers of products from different declared origins exported in 1988 and 1989. The majority of products were said to have originated in Venezuela, Guyana and Colombia, but one of the main sources of skins was Paraguay which hardly features in the exports of products. A similar comparison for Italy is shown in Figure 2, where an even larger discrepancy is apparent. The great majority of products were said to have been made from skins of Venezuelan and Colombian origin, but the majority of skins imported derived from Bolivia, with substantial quantities from Paraguay and Argentina. As Venezuela, Colombia and Guyana all have management programmes for *C. crocodilus*, they are widely known as legal sources of skins. It is possible that they were declared as the source of the skins for re-exported manufactured products because this causes fewer administrative problems on import. The more contentious sources, such as Paraguay, Argentina and Bolivia appear to be under-represented. This may well be related to the USA Endangered Species Act, which prohibits imports of *Caiman crocodilus yacare*, a species which occurs in the latter three countries.

Figure 1. Declared origins of skins of *Caiman crocodilus* imported to France in 1987-89 and of manufactured products exported in 1988-89.

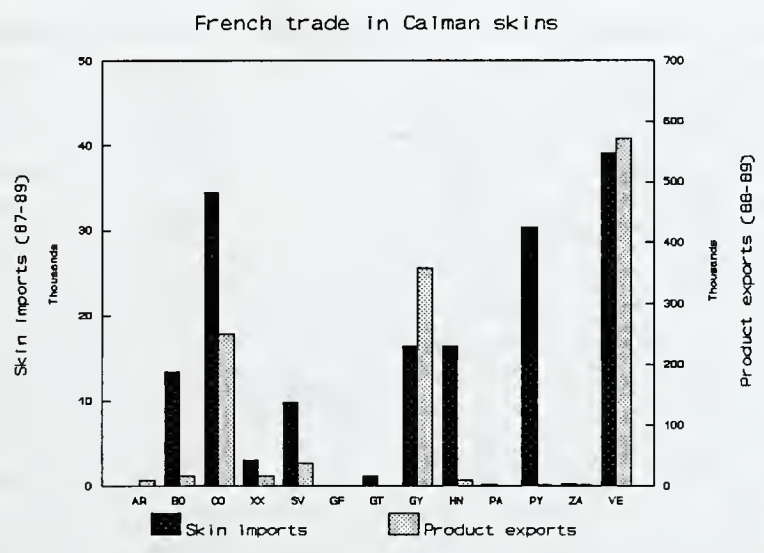


Figure 2. Declared origins of skins of *Caiman crocodilus* imported to Italy in 1987-89 and of manufactured products exported in 1988-89.

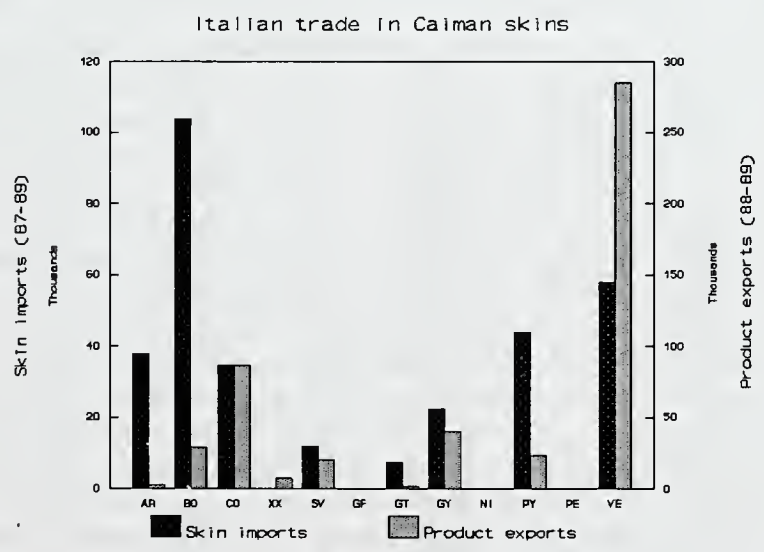


Table 23. Net export from Italy in 1988 of products manufactured from *Caiman crocodilus* skin from different declared countries of origin.

Country of origin	Wallets	Watch Straps	Shoes	Hand bags	Items	G'ments
Argentina		750	1297	324		2
Bolivia	6	26165	23	148	599	
Colombia	1088		29928	8839	11765	24
French Guiana			693			
Guatemala	3		766	35	256	
Guyana	1299		18319	6951	12736	89
Honduras					4	
Nicaragua	1			7		
Indonesia			62			
Panama			309	190	291	
Paraguay	230	20806	520	239	788	8
Peru			21			
El Salvador	568		5384	913	1658	
South Africa				2		
Sudan					1	
Venezuela	2975	13434	59755	5002	33567	330
Zambia				5		
Unknown		4580	168	93	1573	
Total	6170	65735	117245	22748	63238	453

Table 24. Net export from Italy in 1989 of products manufactured from *Caiman crocodilus* skin from different declared countries of origin.

Country of origin	Wallets	Watch Straps	Shoes	Hand Bags	Items	G'ments
Argentina	3		60			
Bolivia	43			104	2404	
Columbia	1005		12408	5493	15746	30
France			42			
French Guiana			1072			
Guatemala	286		191	84	148	1
Guyana	2370		47152	3823	19929	366
Honduras					216	
Hong Kong						
Indonesia			6		49	
Italy			42			
Panama		1680	18	37	8	
PNG				2	10	
Paraguay	400		33	88	270	2
El Salvador	234		9670	1367	376	
USA		0			30	
Venezuela	3907	60423	62820	1670	39897	1056
Unknown			317	77	277	

Total	8248	62103	133831	12745	79360	1455
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Table 25. Net export from France in 1988 of products manufactured from *Caiman crocodilus* skin from different declared countries of origin.

Country of origin	Wallets	Watch Straps	Shoes	Handbags	Items	G'ments
Argentina		9985		22	16	
Australia		30				
Bolivia				58	348	
Cameroon		13				
Colombia		55287		102		
France		158516				
Guatemala		873			183	
Guyana	4	149042	127	375	4342	48
Honduras		5042		1	849	
Japan		255				
PNG		28	29	43	24	
Paraguay				66	439	
El Salvador				1		
South Africa						
Thailand					81	
Venezuela	4	13527		181	1122	9
Zimbabwe					4	
Unknown		6346	9	1	6	
Total	8	398944	165	850	7414	57

Table 26. Net export from France in 1989 of products manufactured from *Caiman crocodilus* skin from different declared countries of origin.

Country of origin	Wallets	Watch Straps	Shoes	Handbags	Items	Garments
Argentina			54		15	
Australia						
Bolivia		17063		5	157	
Cameroon		20		77		
Colombia	235	188527			5695	26
Guatemala		21				
Guyana	434	200145	83		4171	17
Honduras		3669		2	105	
Indonesia					21	
Mali		792				
PNG		905				
Paraguay	37				97	
El Salvador					37427	
South Africa		1545				
Thailand		2				
USA						2
Venezuela	200	557957	64	16		19
Viet Nam		45				11
Unknown		9424	14	4	315	
Total	906	980115	215	104	48003	75

Table 27. Declared countries of origin of skins of *Caiman crocodilus* imported to France, 1983-89.

	1983	1984	1985	1986	1987	1988	1989	Av
Argentina	461	10861						1617
Bolivia	274	10240	77935	46795	12998		508	21250
Colombia	2757	45398		5294		34050	457	12565
Unknown	1068	67717		20		3021	18	10263
El Salvador			5203	4540	6184	360	3313	2800
French Guiana			489					70
Guatemala		9980	43008		142	246	877	7750
Guyana		34105	34612	16746		9385	6969	14545
Honduras		41705	53150	211	2940	13455		15923
Panama	3811	181	22500	132			111	3819
Paraguay		140556	10	49966	5691	24720		31563
South Africa					183	150		48
Venezuela		5086	38379	17208	13986	16822	8347	14261
Total	8370	365828	275285	140912	42124	102208	20600	136475

Table 28. Declared countries of origin of skins of *Caiman crocodilus* imported to Italy, 1983-89.

	1983	1984	1985	1986	1987	1988	1989	Av
Argentina		1568			37818			5627
Bolivia	40690	13384	38716	27853	2000	101682		32046
Colombia	128533	15669	2485	835		34641		26023
Unknown	48024	68	61110	58103				23901
El Salvador	2479	91833	157575	17707	11905			40214
French Guiana	5000							714
Guatemala		76390	263848	6763	7367			50624
Guyana		34453	67903	5575	1623	13311	7704	18653
Nicaragua				7	5		75	12
Paraguay	205882	59052	1071	17344	43854		41	46749
Peru				2852				407
Venezuela		322	68697	99303	13375	44712		32344
Total	430608	292738	661404	236342	117947	194346	7820	277315

Other species

There has been no reported trade in 1988 and 1989 in skins of the following species:

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

One skin of *Melanosuchus niger* was reported seized on entry to the USA in 1989.

DISCUSSION

Table 29. Minimum net trade in classic crocodylian skins reported in CITES annual reports.

* Gross exports from the USA

	1983	1984	1985	1986	1987	1988	1989	Total
<i>A. mississippiensis</i> *	20069	21519	20718	33278	45184	51838	77810	270416
<i>C. acutus</i>	559	106	573	27	4	1	59	1329
<i>C. cataphractus</i>	7615	2030			149	1193	570	11557
<i>C. intermedius</i>								0
<i>C. johnsoni</i>	624	157			824	1274	676	3555
<i>C. niloticus</i>	28983	6115	9378	18480	22974	27525	40253	153708
<i>C. novaeguineae</i>	27325	29156	43027	33938	37890	34728	38235	244299
<i>C. palustris</i>					3			3
<i>C. porosus</i>	5398	5358	6497	5752	7166	10042	13902	54115
<i>C. moreletii</i>		4	1	1	244	18	4	272
<i>C. rhombifer</i>								0
<i>C. siamensis</i>		800	351	605	981	2050	1714	6501
<i>G. gangeticus</i>								0
<i>T. schlegelii</i>								0
Total	90573	65245	80545	92081	115419	128669	173223	77332

The world trade in classic crocodylian skins is summarised in Table 29. There has been an overall increase in the reported trade from 65,245 in 1984 to over 173,000 in 1989. As has been outlined for the individual species, this increase has been due to the development of controlled management programmes in several countries around the world. As a result of these changes, *C. novaeguineae* was overtaken by *A. mississippiensis* as the main species in trade in 1987 and again by *C. niloticus* in 1989. There is inevitably a further trade in classic crocodylian skins which takes place outside CITES controls, but there is little evidence for it. The principal areas of concern are Indonesia, where illegal harvesting of *C. porosus* and *C. novaeguineae* continues, and Madagascar, where the export quotas have been exceeded by almost a factor of five.

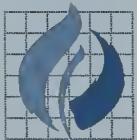
The trade in Caiman skins is still far less well regulated and the majority of this is believed not to be under the control of CITES. Documented trade was in the region of 800,000 in 1988, falling to some 300,000 in 1989, although the data are less complete for that year. However, there is evidence of a similar quantity of skins entering Thailand in 1988 without any CITES control. Europe is the major destination for legal Caiman skins, although there is evidence that some skins illegally enter the Community. There is a substantial tanning and manufacturing industry in Europe, particularly Italy and France, and crocodile skin products are re-exported to destinations all around the world. It is doubtful if the declared origins of the products are correct in all cases.

Since 1987, several countries that previously had export quotas for Nile Crocodile skins, have adopted ranching programmes and increased their output accordingly. A new resolution (Conf. 7.14) was passed in 1989 redefining the special criteria under which populations of Appendix I species could be transferred to Appendix II. One of the chief features of this is the imposition of a time limit on such quota schemes of a maximum of four years before ranching programmes must be instituted.

The phenomenal growth in the supply of skins for legal trade has had a serious impact on the price of skins and must place in question the economic viability of

Year	Population	Area
1900	100	100
1910	150	150
1920	200	200
1930	250	250
1940	300	300
1950	350	350
1960	400	400
1970	450	450
1980	500	500
1990	550	550
2000	600	600

Year	Population	Area
1900	100	100
1910	150	150
1920	200	200
1930	250	250
1940	300	300
1950	350	350
1960	400	400
1970	450	450
1980	500	500
1990	550	550
2000	600	600



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