UNEP-WCMC technical report

World trade in crocodilian skins 2021-2023

Prepared as part of the International Alligator and Crocodile Trade Study

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UN environment programme
WCMC

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Spectacled Caiman (*Caiman crocodilus*) by guentermanaus/Adobe Stock

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All crocodilians are listed in either Appendix I or Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and many are found in international trade for the leather and fashion industry, for meat, and as live animals for breeding operations, food, the pet industry, and zoos. This report shows the changing trends in the species involved in this trade since 2014 with special emphasis on the years 2021 to 2023, the most recent three-year period for which there are reasonably complete data.

The species involved in the skin trade are the 'classics' such as *Alligator mississippiensis*, *Crocodylus acutus*, *C. moreletii*, *C. niloticus*, *C. novaeguineae*, *C. porosus* and *C. siamensis*, and the caimans such as *Caiman crocodilus crocodilus*, *C. c. fuscus*, *C. latirostris* and *C. yacare*. More recently, black caiman *Melanosuchus niger* has entered the skin trade. Between 2014 and 2020 overall global trade appeared to decline, mainly due to a collapse of the South American caiman trade as the industry moves towards higher value skins. Some species weathered this decline, notably American alligator from the United States of America (hereafter referred to as the United States), Nile crocodile from Southern Africa, and Siamese crocodile from Thailand and Viet Nam. Since 2014 the total number of crocodilian skins traded globally has declined but 4.3 million skins were reported in trade over the three-year period 2021-2023. There were dramatic declines in all aspects of the trade in crocodilians in 2020 because of restrictions put in place to control the global pandemic of COVID-19, however trade levels in some species, notably *C. porosus* and *C.* siamensis, showed signs of recovery in the three following years.

Live animal trade involves relatively few individuals except for the Far Eastern trade in Siamese crocodile *C. siamensis*. These animals are bred in captivity in Cambodia, Thailand, and Viet Nam, and until 2019 were exported in large numbers to China where they are consumed as food. This trade was not continued since then, probably because of COVID-19.

Crocodilian meat is traded widely but is particularly favoured in the Far East, especially China and Hong Kong Special Administrative Region of China (hereafter referred to as Hong Kong SAR); the top species in trade in the period 2021-2023 continued to be *C. niloticus*, *C. porosus* and *C. siamensis.*

Introduction

This report, the thirty-first produced by UNEP-WCMC for the International Alligator and Crocodile Trade Study (IACTS), examines the international trade in crocodilian skins, with a particular focus on the years 2021 to 2023, but also refers to trends since 2014. It also attempts to identify and highlight problem areas such as apparent discrepancies in reporting and to recommend, where possible, workable solutions. The data used have been obtained from the CITES Trade Database maintained by UNEP-WCMC on behalf of the CITES Secretariat, with additional information provided by the Crocodile Farmers Association of Zimbabwe. Price data were sourced from CITES annual reports submitted by the United States 2014-2018 and from the United States Fish and Wildlife Service (USFWS) Office of Law Enforcement online repository 2019-2020.

As in previous IACTS reports, this report presents an overview of global trade levels in classic skins (alligators and true crocodiles) and caimans, and a detailed species-by-species analysis of the trade in skins and other products such as live animals, meat, and teeth. All species within the order Crocodylia are listed in either Appendix I or II of CITES. Of those species specifically mentioned in this report as being in commercial trade, the following are listed in Appendix I: *Crocodylus acutus*, *C. moreletii*, *C. niloticus*, *C. porosus*, *C. siamensis*, *Caiman latirostris* and *Melanosuchus niger*; although all these species (excluding *C. siamensis*) have populations currently listed in Appendix II.

Data included

This report is based on an analysis of the annual reports submitted by the Parties to CITES for 2014 to 2023 and, where appropriate, data from outside of this period are presented to provide historical context. A list of annual reports for 2021-2023 that were available at the time of analysis (April 2025) is provided (Table 1). Additional data provided by FAO and the Crocodile Farmers Association of Zimbabwe (CFAZ) have been used where the annual report data are missing or thought to be incomplete.

All direct, commercial trade[1] in whole skins and sides, live animals, meat, and teeth of crocodilian species has been analysed, with two sides being considered equivalent to one skin; trade in skins reported in other sub-units, such as 'tails', or in units of weight, area, or length, have been excluded. Re-exports have not been included in the estimation of annual production. The figures and tables contain information on trade from all sources, including captive-breeding, ranching and wild specimens, unless otherwise specified. Wherever possible, data reported by the producer countries have been used in preference to that reported by importing countries. This is because there may be a time lag between when the export and the import are reported, which could lead to the same skins being counted in different years and thus an overestimation of trade volume. However, where producer countries have failed to submit annual reports, or where exporter-reported trade volumes are substantially less than those reported by importers, importers' data have been used. The report discusses the key species in trade in taxonomic order, reviewing global trade trends before focussing on trends in trade from individual exporting countries.

[1] For this analysis, 'commercial trade' includes CITES purpose code T, and may also include codes P, H, Z, and Q.

Limitations of data

Incomplete data due to late submission of, or failure to submit, CITES annual reports remains an impediment to conducting trade studies using CITES trade data. Measures have been taken by the CITES Standing Committee to improve compliance with the reporting provisions of the Convention. These have included reminders being sent by the Secretariat on behalf of the Standing Committee and a recommendation to suspend trade in CITES-listed species should a Party fail, without providing sufficient justification, to submit reports for three consecutive years (Resolution Conf. 11.17 (Rev. CoP18)). Despite these efforts, some Parties fail to submit annual reports on a regular basis.

According to Resolution Conf. 11.17 (Rev. CoP18), annual reports for trade in 2023 should have been submitted by 31 October 2024. However, at the time of analysis (April 2025), several reports for the years 2021-2023 that might contain important crocodilian data had not yet been received by the CITES Secretariat. These include Australia (2022 and 2023), Brazil (2021 and 2023), Madagascar (2021), Bolivarian Republic of Venezuela (2021 and 2023), and Zimbabwe (2023).

The accuracy of the data is a further limitation to analysis of the trade. The quality of some annual reports was poor as evidenced by comparisons of exporter- and importer-reported data and data obtained from other sources; occasionally skins have been misreported as bodies or live animals, while skin pieces, such as back strips, necks, flanks, and tails, have often been reported as whole skins. Since most of the countries trading in crocodilian skins report on a shipment-by-shipment basis, and many importers' reports include the exporters' permit numbers, importer-reported data can be cross-referenced with the original export permit information to keep reporting or typographical errors to a minimum. This type of checking is also useful for cross-referencing end-of-year trade, where an export may be reported in one year and the import of the same shipment reported the following year.

Analysing annual reports is also complicated by the inconsistent way in which the reports are compiled. According to CITES Notification to the Parties No. 2025/021 Annex 1, Parties may base their report simply on the permits and certificates that have been issued if they are unable to report on the actual number of specimens that entered or left the country. However, reporting based on permits issued, or a combination of actual trade and permits issued, may lead to overestimates of trade volume as permits are frequently issued for quantities exceeding those which are traded and indeed, some of the permits may expire without being used. Most Parties still fail to provide any details concerning the basis on which their annual reports are compiled.

Improvement in the reporting of crocodilian trade continues; however, the absence of annual reports from certain key producer countries as noted above, continues to be a hindrance to timely analysis of the trade.

Table 1. CITES annual reports for 2021-2023 available for analysis[2]

Country	2021	2022	2023
Afghanistan	-	-	-
Albania	✓	✓	✓
Algeria	✓	✓	✓
Andorra		✓	✓
Angola	✓	✓	✓
Antigua and Barbuda	✓	-	-
Argentina	✓	✓	✓
Armenia	✓	✓	✓
Australia	✓	-	-
Austria	✓	✓	✓
Azerbaijan	✓	-	-
Bahamas	-	-	-
Bahrain	✓	✓	✓
Bangladesh	✓	✓	✓
Barbados	✓	✓	✓
Belarus	✓	✓	✓
Belgium	✓	✓	✓
Belize	✓	✓-	✓-
Benin	✓	✓	✓
Bhutan	✓	✓	✓
Bolivia	✓	✓	✓
Bosnia and Herzegovina	✓	✓	✓
Botswana	✓	✓	✓
Brazil	-	✓	-
Brunei Darussalam	✓	✓	✓
Bulgaria	✓	✓	✓
Burkina Faso	✓	-	-
Burundi	✓	-	-
Cambodia	✓	✓	✓
Cameroon	✓	✓	✓
Canada	✓	✓	✓
Cabo Verde	✓	✓	✓
Central African Republic	✓	-	-
Chad	✓	-	-
Chile	-	✓	✓
China	✓	✓	✓
Colombia	✓	✓	✓
Comoros	✓	✓	-
Congo	✓	✓	✓
Costa Rica	✓	✓	✓
Côte d'Ivoire	✓	✓	✓
Croatia	✓	✓	✓
Cuba	✓	✓	✓
Cyprus	✓	✓	✓
Czech Republic	✓	✓	✓
Democratic Republic of the Congo	✓	✓	✓
Denmark	✓	✓	✓
Djibouti	-	-	-
Dominica	✓	-	-
Dominican Republic	✓	✓	✓
Ecuador	✓	✓	-
Egypt	✓	-	-
El Salvador	✓	✓	✓
Equatorial Guinea	✓	✓	✓
Eritrea	✓	✓	✓
Estonia	✓	✓	✓
Eswatini	✓	✓	✓
Ethiopia	✓	✓	✓
Fiji	✓	-	-
Finland	✓	✓	✓
France	✓	✓	✓
Gabon	✓	✓	-
Gambia	✓	✓	-
Georgia	✓	✓	✓
Germany	✓	✓	✓
Ghana	✓	✓	-
Greece	✓	✓	✓
Grenada	-	-	-
Guatemala	✓	✓	-
Guinea	✓	✓	✓
Guinea Bissau	-	-	-
Guyana	✓	✓	✓
Honduras	✓	✓	✓
Hong Kong SAR	✓	✓	✓
Hungary	✓	✓	✓
Iceland	✓	-	-
India	✓	✓	✓
Indonesia	✓	✓	✓
Iran, Islamic Republic of	✓	✓	✓
Iraq	✓	✓	✓
Ireland	✓	✓	✓
Israel	✓	✓	-
Italy	✓	✓	✓
Jamaica	✓	✓	✓
Japan	✓	✓	-
Jordan	-	-	✓
Kazakhstan	✓	✓	✓
Kenya	✓	✓	✓
Kuwait	✓	✓	-
Kyrgyzstan	✓	✓	✓
Lao P.D.R.	✓	✓	✓
Latvia	✓	✓	✓
Lebanon	-	✓	✓
Lesotho	✓	✓	✓
Liberia	-	-	-
Libya	✓	✓	-
Liechtenstein	✓	✓	-
Lithuania	✓	✓	✓
Luxembourg	✓	✓	✓

[2] CITES annual reports received by UNEP-WCMC by 10 March 2025 were included in the analysis.

Country	2021	2022	2023
Macao, SAR	✓	✓	✓
Madagascar	-	✓	✓
Malawi	-	✓	✓
Malaysia[3]	✓	✓	-
Maldives	✓	✓	✓
Mali[4]	-	-	-
Malta	✓	✓	✓
Mauritania	✓	✓	✓
Mauritius	✓	✓	✓
Mexico	✓	✓	✓
Monaco	✓	✓	✓
Mongolia	✓	✓	✓
Montenegro	✓	✓	-
Morocco	✓	✓	✓
Mozambique	✓	✓	✓
Myanmar	✓	✓	-
Namibia	✓	✓	✓
Nepal	✓	✓	✓
Netherlands	✓	✓	✓
New Zealand	✓	✓	✓
Nicaragua	✓	✓	-
Niger	✓	✓	✓
Nigeria	✓	✓	-
North Macedonia	✓	✓	-
Norway	✓	✓	✓
Oman	✓	✓	-
Pakistan	✓	✓	✓
Palau	✓	-	-
Panama	✓	✓	✓
Papua New Guinea	✓	✓	✓
Paraguay	✓	✓	✓
Peru	✓	✓	✓
Philippines	✓	✓	✓
Poland	✓	✓	✓
Portugal	✓	✓	✓
Qatar	✓	✓	-
Republic of Korea	✓	✓	✓
Republic of Moldova	-	-	✓
Romania	✓	✓	✓
Russian Federation	✓	✓	✓
Rwanda	✓	-	-
Saint Kitts and Nevis	✓	✓	-
Saint Lucia	✓	-	-
Saint Vincent and the Grenadines	✓	✓	✓
Samoa	✓	✓	✓
San Marino	✓	-	✓
Sao Tome and Principe	-	-	-
Saudi Arabia	✓	✓	✓

Country	2021	2022	2023
Senegal	✓	✓	✓
Serbia	✓	✓	-
Seychelles	-	✓	-
Sierra Leone	✓	-	-
Singapore	✓	✓	✓
Slovakia	✓	✓	✓
Slovenia	✓	✓	✓
Solomon Islands	✓	✓	✓
Somalia	-	-	-
South Africa	✓	✓	✓
Spain	✓	✓	✓
Sri Lanka	✓	✓	✓
Sudan	✓	✓	✓
Suriname	✓	✓	-
Sweden	✓	✓	✓
Switzerland	✓	✓	-
Syrian Arab Republic	✓	-	-
Tajikistan	✓	✓	-
Thailand	✓	✓	✓
Togo	✓	✓	✓
Tonga	✓	✓	-
Trinidad and Tobago	✓	✓	✓
Tunisia	✓	✓	✓
Türkiye	✓	✓	✓
Uganda	✓	✓	✓
Ukraine	✓	✓	✓
United Arab Emirates	✓	✓	✓
United Kingdom of Great Britain and Northern Ireland	✓	✓	✓
United Republic of Tanzania	✓	✓	✓
United States of America	✓	✓	✓
Uruguay	✓	✓	✓
Uzbekistan	✓	✓	✓
Vanuatu	✓	✓	✓
Venezuela, Bolivarian Republic of	-	✓	-
Viet Nam	✓	✓	✓
Yemen	✓	✓	-
Zambia	✓	✓	✓
Zimbabwe	✓	✓	-

Key: ✓ = report available; - = report not available

[3] Malaysia has submitted its annual report for 2023, however this was not available for the analysis due to ongoing queries with the country at the time.

[4] Mali's annual reports for 2021 and 2023 were not available at the time of analysis but have since been received.

Overview of global trade in crocodilian skins

The overall volume of world trade in classic crocodilian and caiman skins has been variable over the 10-year period 2014 to 2023, with an average of 1.41 million skins[5] exported annually (Table 2; Figure 1). Since 2014 overall global trade has generally appeared to be decreasing (Figure 1), but since 2020 there have been increases in some species, particularly *Crocodylus porosus* and *C. siamensis* from Thailand and Viet Nam. Trade in skins of *Alligator mississippiensis* from the United States has fluctuated regularly but averaged almost 500,000 skins over the period and *Crocodylus niloticus* skins from southern Africa averaged nearly 250,000 skins. Exports of *Caiman crocodilus fuscus* from Colombia has averaged 400,000 skins yearly while *C. crocodilus crocodilus* from Venezuela have fallen to very low levels since 2020. *C. yacare* exports from Bolivia and Brazil averaged 54,000 skins per year. Overall, exports of 'classic' skins averaged 929,000 and of caimans, 483,000 over the ten-year period. Most of the crocodilian industry showed a steep fall in 2020 whilst countries took action to combat the global pandemic caused by COVID-19. In 2021, trade appeared to be picking up again, particularly with *C. niloticus. C. novaeguineae, C. porosus,* and *Caiman crocodilus fuscus,* and this trend continued in 2022 and 2023, mainly due to large exports of *Crocodylus siamensis* exported by Viet Nam.

Some changes to the species in trade began in the early 2000s with two different species entering the market: captive-bred *Crocodylus acutus* from Colombia and Honduras, and in 2019, Cuba, and *Caiman latirostris* from Argentina and Brazil. Trade in these species continues, but in relatively small quantities. The first exports in recent years of wild *Caiman crocodilus crocodilus* skins from Guyana began in 2001 and continued until 2018, while 2005 saw the first exports of ranched *Caiman yacare* from Argentina.

Crocodylus novaeguineae production peaked in 2015 but decreased to approximately one-fifth that level between 2017 and 2019, and further to just over 2,000 skins in 2020. Less than 2,000 skins were exported from Papua New Guinea in each of 2022 and 2023 and none at all from Indonesia. Trade in *C. porosus* remained steady at between around 50,000 and 70,000 skins yearly and peaked at over 100,000 skins in 2016. The volume has decreased subsequently to a low of just over 40,000 skins in 2020 but picked up again in the following three years. Trade in *C. siamensis* averaged 101,230 skins over the decade peaking at over 432,241 in 2022. Viet Nam has been the producer of the most skins of this species since 2020.

The following sections provide a more detailed review of each species and the primary exporter countries involved in the skin trade.

Table 2. Direct, commercial global exports of skins from the main taxa, 2014-2023.

Taxon	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Alligator mississippiensis	485,884	428,521	553,371	463,466	596,258	507,496	472,822	449,191	552,259	464,455
Crocodylus acutus	2,262	3,353	3,233	5,040	5,295	8,187	2,291	1,697	5,671	894
Crocodylus moreletii	2,031	1,291	1,640	3,000	4,088	421	0	200	2,062	170
Crocodylus niloticus	282,859	278,094	317,121	250,150	230,312	260,239	159,967	238,473	230,314	219,638

[5] Individual 'Species Accounts' provide details of the source of the data on which the figures for each species and country are based.

Taxon	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Crocodylus novaeguineae	24,982	39,070	14,022	7,649	8,790	8,023	2,192	2,445	1,408	1,972
Crocodylus porosus	67,979	69,470	102,759	72,171	75,774	67,510	42,913	50,752	58,047	64,078
Crocodylus siamensis	48,557	58,558	33,349	35,407	55,825	19,761	48,495	70,830	432,241	209,281
Subtotal of 'classic' skins	**914,554**	**878,357**	**1,025,495**	**836,883**	**976,342**	**871,637**	**728,680**	**813,588**	**1,282,002**	**960,488**
Caiman crocodilus crocodilus	35,196	30,594	22,328	41,402	41,071	17,251	6,732	3,788	8,186	5,990
Caiman crocodilus fuscus	738,401	530,357	368,515	315,338	370,807	365,957	244,569	316,230	477,909	299,891
Caiman latirostris	8,893	8,610	5,525	3,652	2,811	3,909	10,356	2	4	0
Caiman yacare	94,456	128,203	52,709	65,243	31,953	43,956	13,509	22,227	69,705	21,379
Melanosuchus niger	290	584	0	0	1,044	0	0	0	0	528
Subtotal of caiman skins	**877,236**	**698,348**	**449,077**	**425,635**	**447,686**	**431,073**	**275,166**	**342,247**	**555,804**	**327,788**
Grand total	**1,791,790**	**1,576,705**	**1,474,572**	**1,262,518**	**1,424,028**	**1,302,710**	**1,003,846**	**1,155,835**	**1,837,806**	**1,288,276**

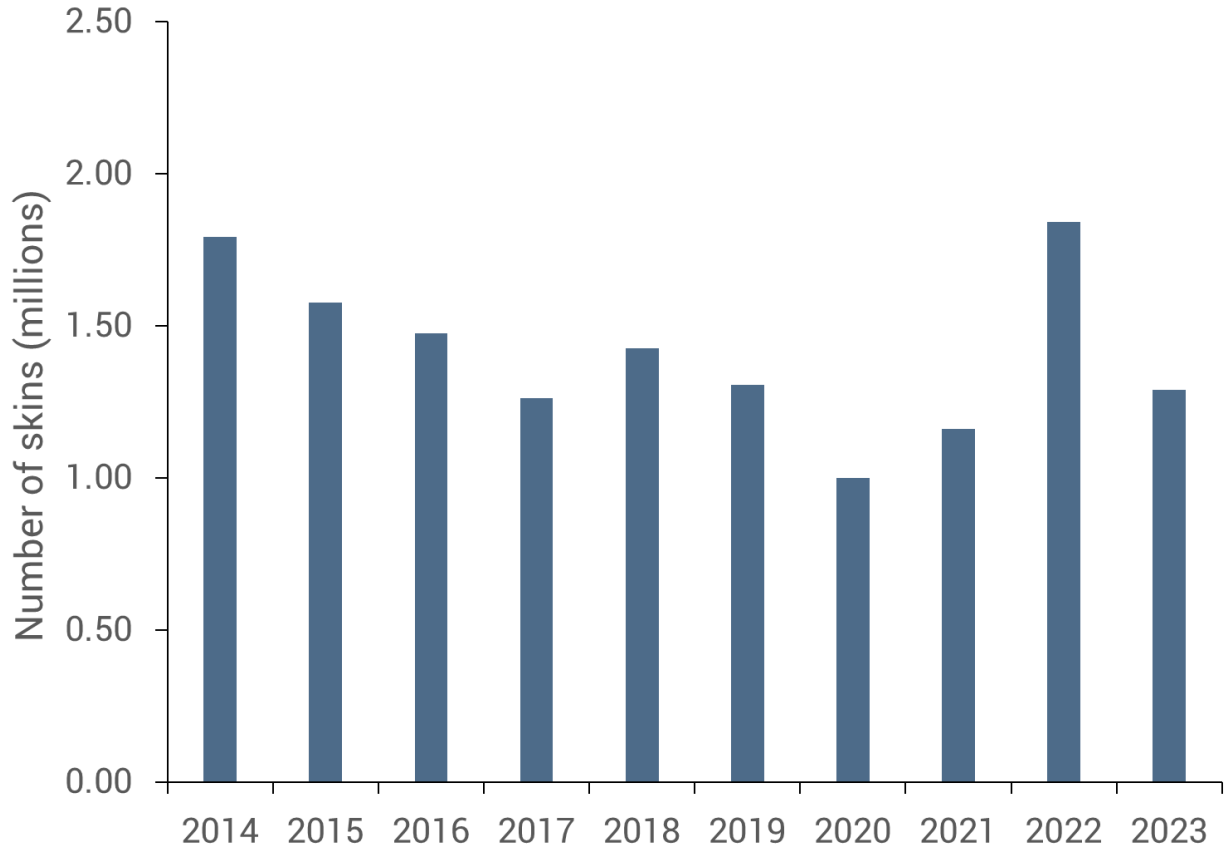

Figure 1. Direct, commercial global exports of crocodilian skins, 2014-2023.

Species accounts

Crocodylus acutus American Crocodile

Colombia has nine farms registered with CITES for production of this species, which was listed in Appendix I until 2017; the population of the Integrated Management District of Mangroves of the Bay of Cispata, Tinajones, La Balsa and Surrounding Areas, Department of Córdoba was transferred to Appendix II in 2017. Skin exports began in 2001 with 100 skins from captive-bred animals going to France. Exports of small numbers of skins have continued, rising to 8,182 in 2019. Exports fell in 2020 and 2021 but increased again to 5,671 in 2022, before decreasing to 894 in 2023. The main importer in the period under review was Mexico, followed by the Republic of Korea. In 2022 Viet Nam reported importing 1,743 skins.

Cuba reported exporting five skins from ranched individuals to Italy in 2019, but no further trade has been reported.

Honduras has one registered breeding operation for this species and the first reported trade was of 500 skins imported by Japan in 2003. In the recent decade, Japan reported the import of 50 skins in 2015, but this was not confirmed by Honduras. No further trade has been recorded.

Crocodylus johnstoni Australian Freshwater Crocodile

Exports from Australia, the only range State, peaked at 3,875 skins in 1993, remained at this level until 1996, and subsequently fell to negligible levels. No trade in skins of this species has been reported since 2005.

Crocodylus moreletii Morelet's Crocodile

Found only in Belize, Guatemala and Mexico, this species was listed in CITES Appendix I until 23 June 2010 when the populations of Belize and Mexico were transferred to Appendix II with a zero quota for wild specimens traded for commercial purposes. Previously Mexico had three captive-breeding operations for this species registered with the CITES Secretariat. Exports of skins from Mexico have fluctuated from zero in 2010 to a peak of 4,088 skins in 2018 (Figure 2). Only 200 skins were exported in 2021, increasing to 2,062 in 2022, but falling again to 170 in 2023. All skin exports in the period under review were imported by France and the United States.

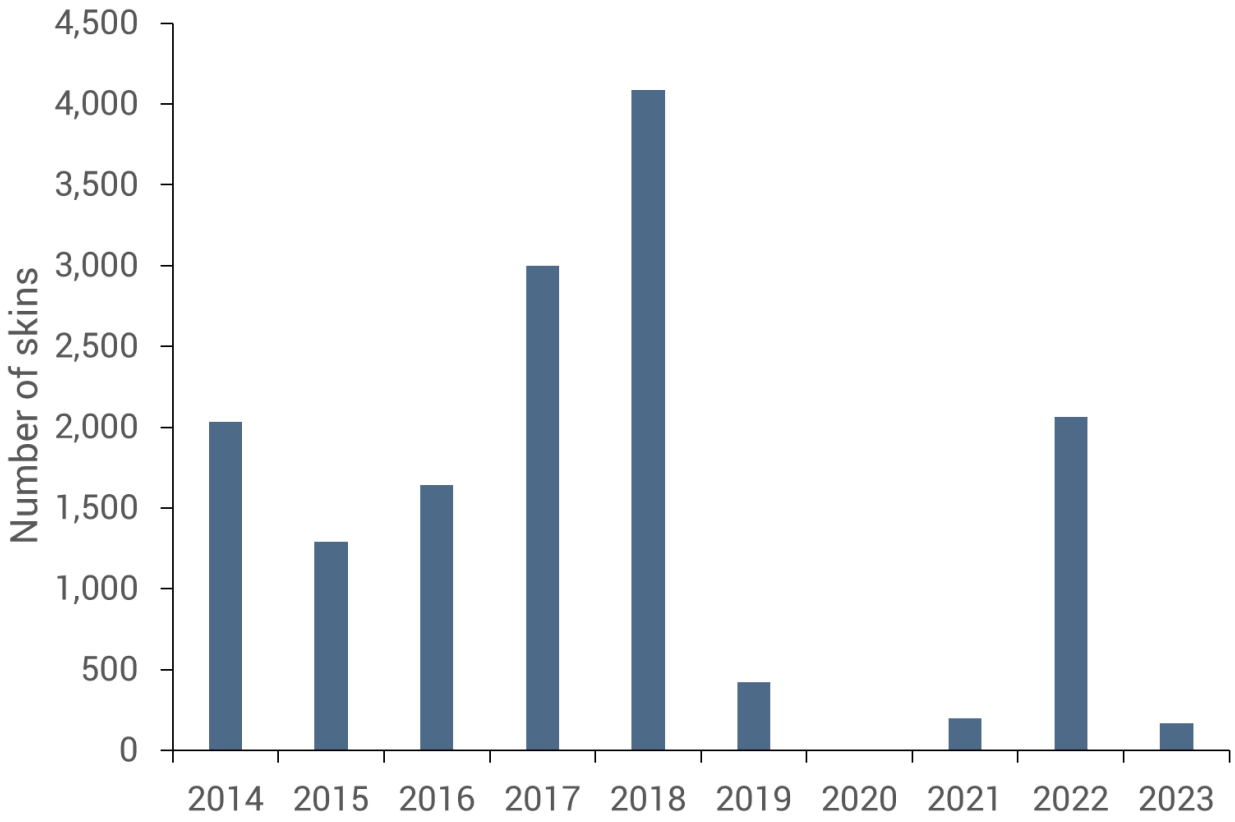

Figure 2. Direct, commercial exports of *Crocodylus moreletii* skins reported by Mexico, 2014-2023.

Crocodylus niloticus Nile Crocodile

Over the period 2014-2023, an average of nearly 247,000 *Crocodylus niloticus* skins were exported globally per year, with an increasing trend until 2016. Since that time exports have fluctuated between 220,000 and 260,000 with a massive fall of some of 39 per cent in 2020 likely due to the COVID-19 pandemic (Table 3); trade in 2021 and 2022 appears to have returned to pre-pandemic levels. The section that follows summarises information on exports by range States and other countries with farms capable of commercial skin production. Currently, only three countries have captive-breeding operations registered with the CITES Secretariat: Mali, Senegal, and Tunisia, each with one registered operation. *Crocodylus niloticus* is listed in CITES Appendix I except for the populations of Botswana, Egypt, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Namibia, South Africa, Uganda, the United Republic of Tanzania (hereafter referred to as Tanzania), Zambia and Zimbabwe, which are included in Appendix II.

Table 3. Direct, commercial exports of *C. niloticus* skins from producer countries, 2014-2023.

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Botswana	4,500	1,200	*6,000	3,200	1,600	1,960	*1,550	1,100	3,655	1,000
Ethiopia	0	6	7	4	0	0	0	0	0	23
Israel	0	78	0	0	0	0	0	0	0	0
Kenya	5,300	6,504	5,959	8,130	7,946	6,152	4,241	3,922	4,983	5,171
Madagascar	*3	154	500	0	0	0	0	0	0	0
Malawi	2,784	6,246	12,097	5,449	1,757	8,276	0	*450	*3,320	*3,471
Mali	0	0	0	0	0	0	0	0	0	0
Mauritius	100	100	100	127	0	160	0	0	0	0
Mozambique	10,781	11,161	27,021	84,245	38,868	*61,980	3,332	0	4,000	0
Namibia	1,471	769	*706	*130	250	*271	0	0	*2,001	439
Senegal	0	7	0	0	0	0	0	0	2	*50
South Africa	121,057	59,038	37,983	64,053	55,116	67,938	51,598	118,361	106,767	88,266
Sudan	0	0	0	0	0	0	0	0	0	0
Tanzania	**1,287	**1,294	0	0	0	0	0	0	0	0
Thailand	0	0	323	0	*2	*335	0	0	0	0
Uganda	515	600	500	600	550	500	0	0	500	0
Zambia	44,233	65,998	112,434	2	10,214	27,519	*22,767	*22,867	*20,373	*19,812
Zimbabwe	38,885	65,429	41,753	69,786	114,009	53,597	25,585	91,773	*84,713	*90,803
	♦90,828	♦124,939	♦113,491	♦84,210	♦98,797	♦85,148	♦76,479	♦87,460	♦80,152	♦101,406
Total	**282,859**	**278,094**	**317,121**	**250,150**	**230,312**	**260,239**	**159,967**	**238,473**	**230,314**	**219,638**

Key: * Figure derived from importer-reported data; ** Data supplied by FAO; ♦ Data supplied by CFAZ (the Crocodile Farmers Association of Zimbabwe)[6]: These data have been used for the totals for years where the trade volumes reported by CFAZ are more than those reported in CITES annual reports.

Exports by range States

Botswana: Botswana reported exporting 1,100 skins in 2021 and 3,655 in 2022, all from wild-caught animals. South Africa also reported the import of 3,655 skins in 2022, but from animals bred in captivity. In 2023 Botswana reported exports of 1,000 skins from ranched animals whilst South Africa reported exactly twice that number from captive-bred stock.

Central African Republic: No commercial exports of skins from the Central African Republic have been reported since 1986.

Congo: No commercial exports of skins from the Congo have been reported since 1989.

Ethiopia: Ethiopia's sole crocodile ranching operation (Arba Minch Crocodile Ranch) is owned and managed by the Ethiopian Wildlife Conservation Organisation (EWCO) which also acts as both the CITES Management and Scientific Authorities. Production appears to be variable and there have been discrepancies between the information contained in Ethiopia's annual reports to CITES, data received directly from EWCO, and information from importing countries. Since 2018 the only exports reported by Ethiopia were 23 ranched skins to the United States in 2023.

Guinea: No trade in skins from Guinea has been reported since 1995.

Kenya: Kenya reported exporting 3,922 skins in 2021, 4,983 in 2022 and 5,171 in 2023 with the main importer being Singapore. Kenya reported exporting 1,288 skins to the United Kingdom in 2022, but these were not confirmed by the importer. Most of the skins were reported to be from ranching operations, although those

[6] Sue Childes on behalf of CFAZ, *pers. comm.* numerous dates.

exported to the United Kingdom, and a further 50 skins exported to the Republic of Korea in 2022, were reported as being from animals bred in captivity.

Liberia: Commercial exports of skins from Liberia have not been reported since 1984.

Madagascar: The situation in Madagascar has long been under review by both the IUCN/SSC Crocodile Specialist Group and the CITES Secretariat. Based on serious concerns raised about the trade, the CITES Standing Committee recommended Parties to suspend trade in *C. niloticus* from Madagascar on 17 June 2010 until further notice (See Notification to the Parties No. 2010/015 and SC63 Doc. 13). This suspension was not lifted until the end of 2014, with importers reporting three skins in that year. Madagascar reported exporting 500 skins to France in 2016, all from captive-bred animals. No skin exports have been reported subsequently.

Malawi: Malawi reported no exports of skins in 2021, but South Africa reported imports of 450 skins from captive-bred animals in that year. In 2022, Italy reported importing 3,320 skins, and the Republic of Korea reported imports of 5,184 skins, although this high quantity has been excluded from Table 3 as a likely reporting error as it was anomalous with previous trade. In 2023, Italy reported importing 3,471 skins whereas Malawi reported exporting 3,307. All skins in 2022 and 2023 were from ranched animals.

Mali: Mali has one captive-breeding operation registered with the CITES Secretariat (Ets Lassana Diaby Cuirs et Peaux) that was reportedly established in 1978 but was only registered with CITES in May 2008. Since then, Mali reported exports of 107 source 'D' skins to France in 2008 and 15 source 'D' skins to the United States in 2011, but no further trade has been reported.

Mozambique: In 2022 Mozambique reported exporting 4,000 skins to Zimbabwe, whilst the Republic of Korea reported importing 2,020, all with the source reported as wild. No trade has been reported for either 2021 or 2023.

Namibia: No trade has been reported for 2021, but the Republic of Korea reported importing 1,881 skins and South Africa reported imports of 120 skins of captive-bred origin in 2022. In 2023 Namibia reported exporting 439 captive-bred skins to South Africa.

Nigeria: No commercial shipments of skins from Nigeria have been reported since 1983.

Senegal: There is one farm registered with the CITES Secretariat for captive-breeding of this species that was established in 1995. In the three-year period under review, reported commercial trade by Senegal appears to have been two skins exported to Netherlands in 2022, however they were reportedly wild-caught specimens so were likely to have been hunting trophies.

Somalia: No commercial shipments of skins have been reported from Somalia since 1981.

South Africa: South Africa reported exporting 118,361 skins in 2021, 106,767 in 2022, and a further 88,266 in 2023. Of the skins exported in 2023, 1,625 were reported as being ranched and may have originated in Mozambique when that country was exporting ranched hatchlings to South Africa.

Sudan: No commercial trade in skins originating in Sudan has been reported since 2010 and Sudan has no captive-breeding operations registered with the CITES Secretariat.

Tanzania: Tanzania has not reported any commercial exports of skins since 2015.

Togo: No trade in skins has been reported since the early 1980s.

Uganda: In 2022, Uganda reported exports of 500 ranched skins to the Republic of Korea who also reported the import. No trade has been reported for 2021 or 2023.

Zambia: In 2021, Italy, Japan, and Singapore reported importing 22,867 skins from Zambia which were not reported by Zambia; these same importers reported importing a further 20,369 in 2022 and 19,812 (Italy and Singapore only) in 2023. Importer-reported data have been used in Table 3 for 2020-2023.

Zimbabwe: Exports of skins of this species reported by Zimbabwe in its annual reports are in most years substantially lower than those reported by importers as well as the figures supplied by the Crocodile Farmers Association of Zimbabwe (CFAZ); the CFAZ figures have therefore been used in this analysis as a precautionary measure where they exceed those in the CITES annual report (see Table 3). However, it should be noted that not all skins exported from Zimbabwe are produced by CFAZ members and therefore it is likely that no set of figures accurately represents a complete record of Zimbabwe's skin exports. In 2018, 2021 and 2022 the CITES annual report figure exceeded the CFAZ data so have been used in Table 3.

Exports from non-range States with commercial crocodile farms

Brazil: No exports of *C. niloticus* skins have been recorded from Brazil since 2004.

Israel: No imports of captive-bred skins from Israel have been reported since 2015, except for one imported by the Republic of Korea in 2018.

Mauritius: No exports of skins have been reported since 2019.

Crocodylus novaeguineae New Guinea Crocodile

Over the 10-year period 2014 to 2023, the total number of skins of this species exported by the two main producers, Indonesia and Papua New Guinea, was just over 110,000. Trade peaked at 39,070 in 2015 then declined rapidly to just over 14,000 in 2016; trade was fewer than 10,000 in the seven following years, with the lowest trade level of 1,408 in 2022 (Table 4).

Table 4. Direct, commercial exports of *C. novaeguineae* skins from producer countries, 2014-2023.

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Indonesia	11,232	13,083	4,294	2,806	905	1,164	419	160	0	0
Papua New Guinea	13,750	25,987	9,728	4,843	7,885	6,859	1,773	*2,285	*1,408	1,972
Total	**24,982**	**39,070**	**14,022**	**7,649**	**8,790**	**8,023**	**2,192**	**2,445**	**1,408**	**1,972**

Key: * Figure derived from importer-reported data

Indonesia: Exports increased steadily from over 11,000 skins in 2012 to over 13,000 in 2015. However, over the next three years, exports declined steeply to less than 1,000 skins in 2018, increased slightly in 2019, but then fell further in 2020 and 2021. No exports were reported in 2022 or 2023. Most of the skins exported were from wild-caught animals. The main importer of *C. novaeguineae* skins in the decade under review was Japan. In 2021, Türkiye was the only importer of Indonesian skins.

Papua New Guinea: Exports over the decade were highest in 2015 but, as with Indonesia, declined dramatically subsequently and the year 2022 had lowest export quantity of the decade. All the reported imports 2021-2023 have been of wild-sourced skins.

Crocodylus porosus Saltwater Crocodile

During the period under review, *Crocodylus porosus* was listed in CITES Appendix I, except for populations of Australia, Indonesia and Papua New Guinea which were listed in Appendix II. In 2017, the population of Malaysia was transferred to Appendix II. Between 2014-2023 the total number of *C. porosus* skins in trade has fluctuated between around 68,000 skins in 2014 to a peak of nearly 103,000 skins in 2016. However, in 2020 exports fell to their lowest level since 2006 and recovered slightly in the period under review. Exports of *C. porosus* skins from range States between 2014 and 2023 are presented in Table 5.

Table 5. Direct, commercial exports of *C. porosus* skins from range States 2014-2023.

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	*30,758	32,456	59,020	*48,883	*40,112	*37,427	30,720	33,699	*38,144	*39,711
Bangladesh	430	400	*200	0	0	*477	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
Indonesia	9,076	8,133	6,394	3,770	6,317	5,575	2,302	3,323	2,700	5,032
Malaysia	2,483	3,555	5,215	4,413	5,370	4,421	1,250	1,500	3,829	*5,998
Papua New Guinea	8,340	8,044	12,320	6,726	7,129	10,818	3,999	5,793	5,186	6,437
Philippines	9,369	9,532	7,141	*3,913	8,760	3,596	1,835	0	0	0
Singapore	15	0	5,739	150	244	32	50	750	670	153
Thailand	7,508	7,350	6,730	4,316	7,842	5,164	*2,757	5,687	7,518	6,747
Total	**67,979**	**69,470**	**102,759**	**72,171**	**75,774**	**67,510**	**42,913**	**50,752**	**58,047**	**64,078**

Key: * Figure derived from importer-reported data

Australia: Comparison of data reported by Australia and importing countries in certain years showed lower levels of trade reported by Australia. Given these discrepancies, and the lack of annual reports for 2022 and 2023, the data provided in Table 5 have been taken from reports of the importing countries for most years. The destinations of the skins exported 2021-2023 were mainly France and Singapore, and the vast majority were reported as being from ranched individuals.

Bangladesh: This country has one farm registered with the CITES Secretariat in 2007. The stock is from animals bred in captivity in Malaysia. The first reported export was of 430 skins exported to Japan in 2014 with a further 400 exported in 2015. The 2016 annual report from Bangladesh showed no further exports of skins but Japan reported importing 600 skins; Japan reported importing no skins in 2015 so the difference, 200 skins, has been used in Table 5. No exports have been reported by Bangladesh in recent years, but Japan reported importing 477 skins in 2019. No further trade has been reported subsequently.

Brunei Darussalam: This country reported exporting five skins from captive-bred animals to the Republic of Korea in 2012; no other trade in skins from the country has been reported. There are no breeding operations in the country registered with the CITES Secretariat.

Indonesia: Indonesia's exports over the recent decade fell from over 9,000 skins in 2014 and have been fewer for all the subsequent years, reaching a low of just over 2,300 in 2020. Since then, exports have increased to over 5,000 skins in 2023. The main importers 2021-2023 were China, Denmark Japan, Italy, and Singapore. From 2006 onwards, all skins were from either captive-bred or ranched animals, with the proportion from captive-bred sources increasing from less than 20 per cent in 2005 to at least 88 per cent in 2021-2023.

Malaysia: Trade fell to its lowest level in 2020 but has recovered in the three following years. Data from importing countries in 2023 suggest trade is increasing. The main importer has been Singapore with lesser

quantities being imported by Hong Kong SAR, Japan, the Republic of Korea, and Thailand. Until the species was transferred to Appendix II, there were seven CITES-registered captive-breeding operations for this species in Malaysia.

Papua New Guinea: Papua New Guinea's exports peaked at 12,320 skins in 2016 but have since fluctuated annually. As with many other species, exports collapsed to the lowest figure of the decade in 2020. France, Japan, and Singapore were the only importers between 2021 and 2023. The proportion of captive-sourced skins fluctuated throughout the decade but in the three-year period under review, 87 per cent of the skins were reportedly from animals bred in captivity.

Philippines: There are two farms registered with the CITES Secretariat to produce this species and small quantities of skins have been exported annually since 2007. Philippines' exports over the ten-year period peaked at 9,532 skins in 2015 and have since decreased to 1,835 skins in 2020. No exports of skins have been reported since then.

Singapore: There is now only one registered captive-breeding operation in Singapore, and all reported commercial exports of skins 2014-2023 were captive-bred. Nearly all the skins exported 2021-2023 were exported to China, but 30 skins were exported to Germany in 2022 (reported by the importer only), and 45 were exported to Italy and Japan in 2023.

Thailand: Thailand's reported exports of skins have fluctuated from year to year but declined to less than 3,000 in 2020 (Table 5). The principal importer between 2021 and 2023 was Japan, with China, Germany, and Italy, importing lesser quantities. As of May 2025, there are 18 CITES-registered captive-breeding operations for this species in Thailand.

Crocodylus rhombifer Cuban Crocodile

Cuba reported exporting four skins from captive-bred animals to Italy in 2019. This was the first commercial trade reported since 1998. Cuba has one captive-breeding establishment registered with the CITES Secretariat. No further exports have been reported.

Crocodylus siamensis Siamese Crocodile

Cambodia: Cambodia has 21 crocodile farms registered with the CITES Secretariat for the commercial production of this species. Japan reported importing 300 skins in 2019 although this was not reported by the exporter. No trade has been reported since.

Thailand: There are 30 crocodile farms registered with the CITES Secretariat for commercial production of this species in Thailand and all reported exports of skins were captive-bred. Reported trade declined from over 26,000 in 2014 and 2015 to about 12,000 skins in 2019. Exports have subsequently increased to over 33,000 in 2022 and to more than 73,000 in 2023. The main importers over the period 2021 to 2023 were China, Mexico, and Singapore.

Viet Nam: Since the first reported exports of *C. siamensis* from the country in 2004, exports steadily increased to a peak of 23,062 skins in 2008. Exports subsequently declined and fluctuated between just over 3,000 skins in 2010 and 18,500 skins in 2017 (Table 6). In 2018 there was a substantial increase in reported skins, totalling over 40,000 of which 96 per cent went to China and Thailand. Exports fell to under 8,000 in 2019

but increased to 35,000 in 2020, and to 54,856 in 2021. However, Viet Nam reported exporting nearly 400,000 skins in 2022 and a further 135,589 skins in 2023. It is not yet understood why this huge increase in trade occurred, but it is possible the farms in Viet Nam have been greatly reducing their stock. China, Japan, Republic of Korea, Singapore, and Thailand have been the main destinations of the skins over the decade, with China importing the great majority of skins 2021-2023. All skins exported were reported as captive-bred; Viet Nam has 10 captive-breeding operations registered with the CITES Secretariat for this species. Although Viet Nam submitted a report for 2014 it is thought to contain an error, so importers' data have been used for that year.

Table 6. Direct, commercial exports of *C. siamensis* skins from range States, 2014-2023.

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	7,602	19,050	5,720	4,652	*3,512	*300	0	0	0	0
Thailand	26,442	26,914	14,588	12,251	12,201	11,762	*13,393	15,974	33,660	73,692
Viet Nam	*14,513	12,594	13,041	18,504	40,112	7,699	35,102	54,856	398,581	135,589
Total	**48,557**	**58,558**	**33,349**	**35,407**	**55,825**	**19,761**	**48,495**	**70,830**	**432,241**	**209,281**

Key: * Figure derived from importer-reported data

Alligator mississippiensis American Alligator

Reported exports of *A. mississippiensis* from the United States increased from around 31,000 skins in 1986 to 422,931 skins in 2006. Although exports declined the following two years, they have subsequently increased steadily and over 400,000 skins have been exported every year between 2014 and 2023 (Table 7; Figure 3). The year 2018 saw the highest number of skins exported at almost 600,000. Between 2021 and 2023, four countries (France, Germany, Italy, and Singapore) together imported 94 per cent of production.

Table 7. Direct, commercial exports of *A. mississippiensis* skins from the United States, 2014-2023.

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
485,884	428,521	553,371	463,466	596,258	507,496	472,822	449,191	552,259	464,455

Since 2005 onwards, source code 'W' (wild-taken) appears to have been used for ranched animals obtained from eggs collected in the wild and over 99 per cent of the skins exported now are reported as source 'W'. This is the result of the decision by the United States CITES Management Authority that the code 'R' should only be used in the case of crocodilian populations transferred from CITES Appendix I to Appendix II subject to ranching. In 2021, 3,012 of the skins exported were reported by the United States as source 'I' (seizures/confiscations) with a further 8,641 in 2022. None of the skins exported in 2023 were reported with this source code and no source 'I' skins have been reported by importing countries. This species is also bred in captivity in Israel, but there have been no reported exports of skins from Israel since 2001.

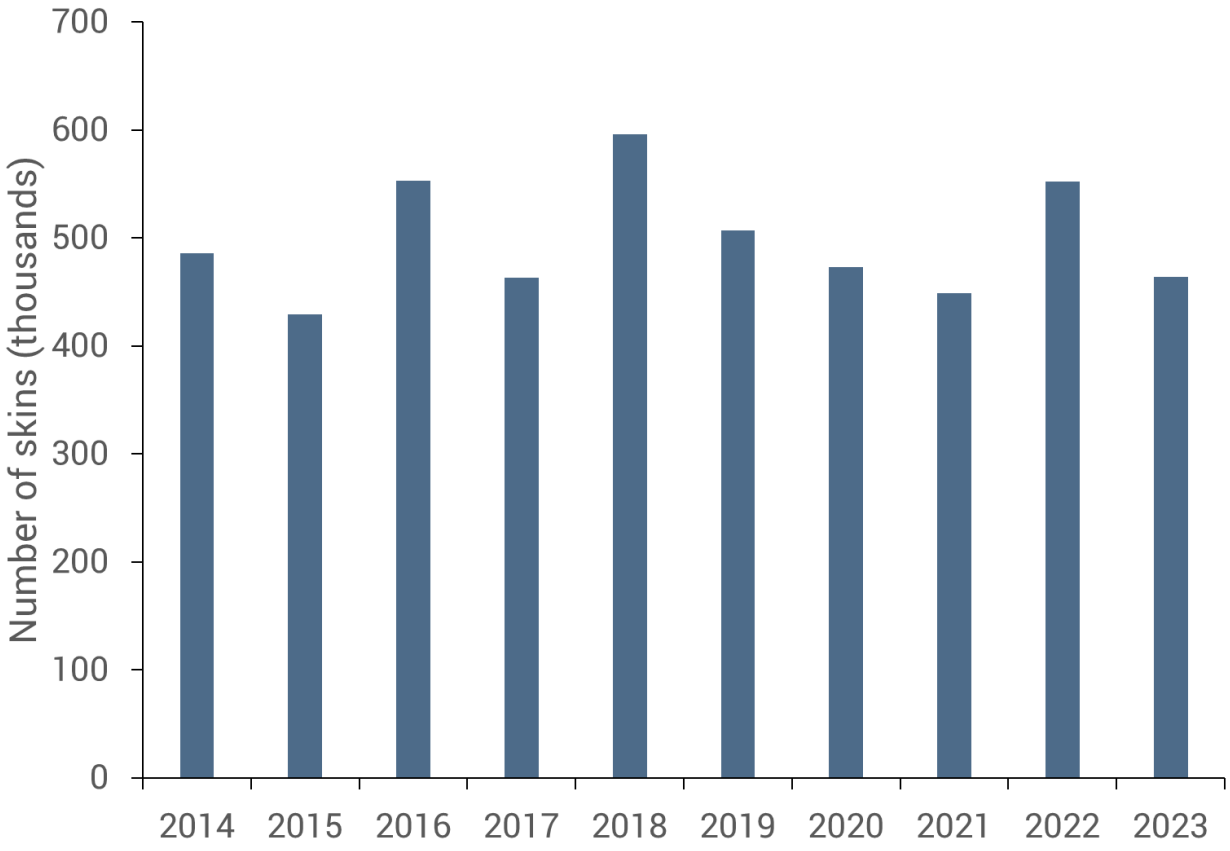

Figure 3. Direct, commercial exports of *Alligator mississippiensis* skins reported by the United States, 2014-2023.

Caiman crocodilus crocodilus Spectacled Caiman

Colombia used to regularly report exports of small numbers of skins from the nominate subspecies however, since 2010 they have been less frequent. The last reported exports from Colombia were 663 skins to Thailand in 2013.

Guyana was a major supplier of this subspecies in the late 1980s, with over 320,000 skins reported by importing countries between 1983 and 1989, but exports dwindled during the 1990s and early 2000s. Trade in the past decade peaked in 2014 and 2015 with 18,500 and 20,000 skins, respectively. No skin exports were reported by either Guyana or importing countries in 2016, but Mexico reported importing 16,000 in 2017 and Guyana reported a further 10,000 skins to Mexico in 2018. No trade in skins has been reported since then. All skins were wild-sourced.

Venezuela has historically been the main supplier of skins of this subspecies, almost all from wild-collected animals. Between 2014 and 2019 Venezuela exported an average of 21,300 skins annually; however, trade appeared to collapse in 2020 and the annual average since then has been just over 6,000 skins (Figure 4). The main importers of skins from Venezuela have been Germany and Italy, but in 2022 over 8,000 were reported as exports to China.

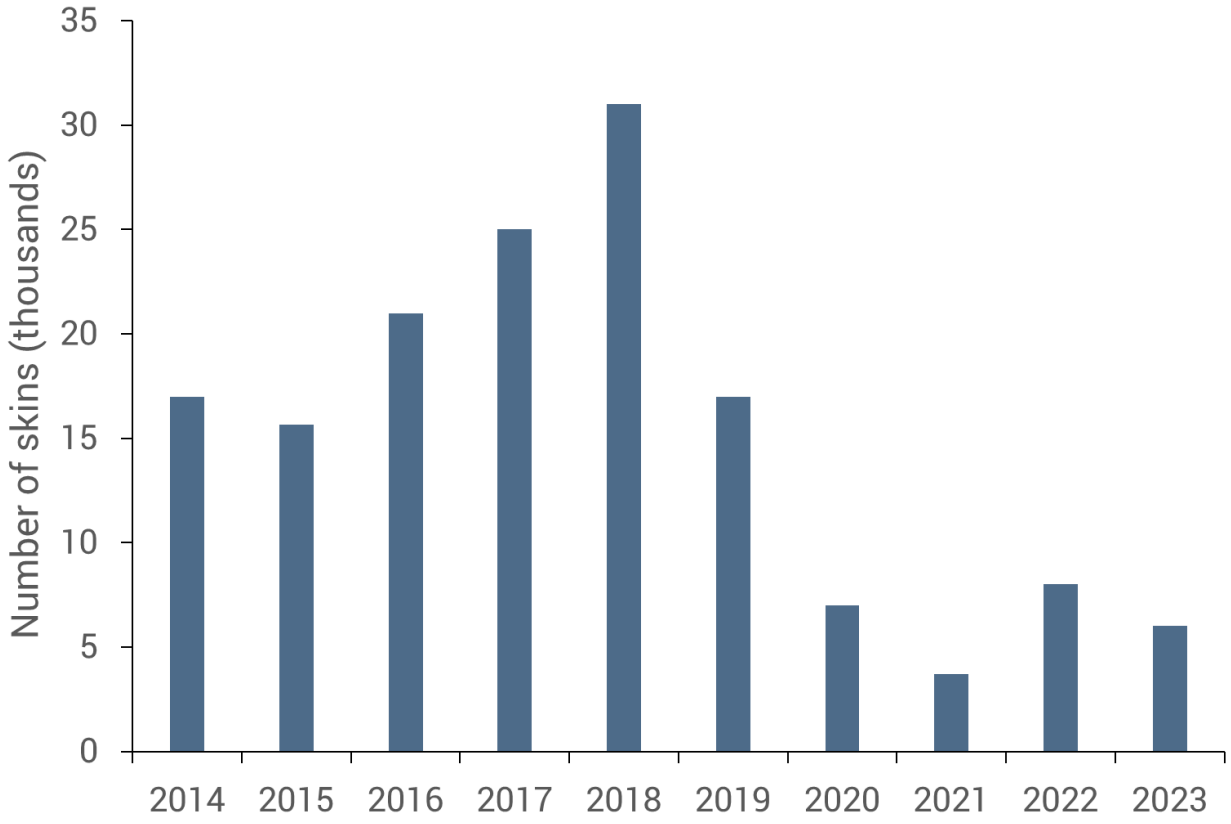

Figure 4. Direct, commercial exports of *Caiman crocodilus crocodilus* skins reported by Venezuela, 2014-2023. Importer-reported data were used for 2021 and 2023.

Caiman crocodilus fuscus Brown Caiman

Reported exports of *Caiman crocodilus fuscus* skins from the two principal exporting countries between 2014 and 2023 are provided in Table 8.

Table 8. Direct, commercial exports of *C. crocodilus fuscus* skins from Colombia and Panama, 2014-2023.

Exporter	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Colombia	735,779	516,202	367,415	308,174	363,920	360,157	242,867	316,230	474,890	297,891
Panama	2,622	14,155	1,100	7,164	*6,887	5,800	1,000	0	3,019	2,000
Total	**738,401**	**530,357**	**368,515**	**315,338**	**370,807**	**365,957**	**243,867**	**316,230**	**477,909**	**299,891**

Key: * Figure derived from importer-reported data.

Argentina reported exporting 702 skins from captive-bred animals in 2020 – the first reported exports from this country, but none subsequently.

Colombia remains the major exporter of this subspecies. Over the past decade, exports peaked at 735,779 skins in 2014, fell steadily over the next three years, picked up slightly in 2018 and 2019, but fell to a decade low in 2020 (Table 8, Figure 5). Exports have fluctuated since then and averaged 363,000 skins in the three-year period under review. Germany, Mexico, the Republic of Korea, and the United States were the primary importers between 2021 and 2023.

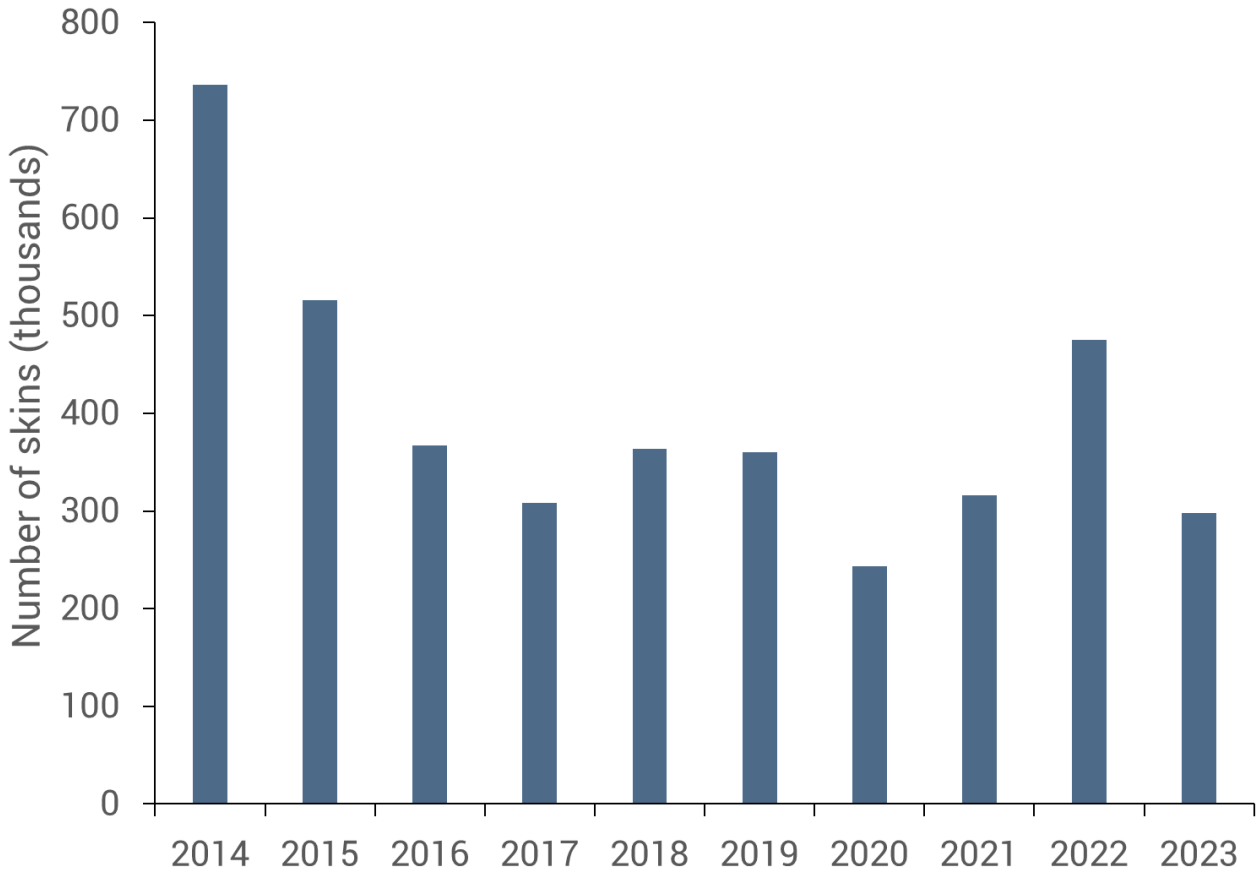

Figure 5. Direct commercial exports of *Caiman crocodilus fuscus* skins reported by Colombia, 2014-2023.

Panama is an important entrepôt State for skins coming from other countries. The first significant direct export of 10,250 skins was reported in 2000 and trade appears to have peaked in 2003 at 19,840 skins. Export quantities reported by Panama have been considerably less over the decade under review although it should be noted that the export of 12,155 skins to Spain in 2015 (Table 8) were not reported by the importer. Panama's main trading partner in recent years has been Mexico.

Other range States: No exports have been reported by Honduras since 1998; Nicaragua reported the export of one wild-sourced skin to Italy in 2006, while the United States reported the import of 134 wild-sourced skins from Nicaragua in 2008.

Caiman latirostris Broad-snouted Caiman

The Argentine population of this species was transferred from CITES Appendix I to Appendix II in 1997, and the first exports of skins from ranched animals were reported by Argentina in 2001. In 2020 Argentina reported exports of 10,356 ranched skins however only two skins were reported in 2021, and confirmed by the importer, Italy. Argentina reported exporting a further four wild-sourced skins to Japan in 2022 and no exports of this species in 2023.

Brazil has reported exporting small numbers of skins from captive-bred animals in 2016 and 2018.

Caiman yacare[7] Yacaré

Exports of *C. yacare* skins from the principal exporter of this species, Bolivia, appear to have peaked in 2015 at 112,000 skins and declined thereafter to approximately 17,000 skins in 2023 (Table 9).

Table 9. Direct, commercial exports of *C. yacare* skins from producer countries, 2014-2023.

Exporter	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Argentina	*37	*3,105	*2,055	*1,510	0	0	4,219	2	911	200
Bolivia	84,970	112,379	43,492	52,043	29,734	34,686	6,610	*9,130	*56,422	*17,119
Brazil	*4,910	*12,719	*6,162	11,690	2,219	*9,270	2,680	*13,095	12,372	*4,060
Paraguay	*4,539	0	1,000	0	0	0	0	0	0	0
Total	**94,456**	**128,203**	**52,709**	**65,243**	**31,953**	**43,956**	**13,509**	**22,227**	**69,705**	**21,379**

Key: * Figure derived from importer data

Argentina: Exports have fluctuated with no skins reported in trade in 2018 or 2019. In 2020 Argentina reported 4,219 skins to the United States but only two skins to Italy in 2021. In 2022 Argentina reported exporting 911 skins to Mexico, and a further 200 in 2023, trade which was confirmed by the importer.

Bolivia: Reported exports showed an increase between 2014 and 2015 but have fluctuated subsequently (Table 9). The principal importers 2021-2023 were Brazil, Italy, Japan, Mexico, and the United States. Of the skins reported by the importing countries during the three-year period under review, the greatest proportion was in ranched specimens, with wild-caught animals accounting for approximately 26 per cent of the trade.

Brazil: For 2014-2016, 2019 and 2021, the data from importers far exceed that reported by Brazil and have been used in Table 9. While all skins exported in 2010 were from captive-bred animals and primarily destined for Colombia, most of the skins traded in subsequent years were reported as coming from ranching operations and exported more widely, with the main importing country being Mexico.

Paraguay: Paraguay imposed a moratorium on all exports of wildlife in September 2003, a result of the findings of a technical mission from the CITES Secretariat. This moratorium was partially lifted in 2009 (CITES Notification to the Parties No. 2009/036 of 10 August 2009) and further partially lifted in 2011 (CITES Notification to the Parties No. 2011/009 of 19 January 2011) to allow exports of existing stocks of skins legally acquired in 2001, 2002 or 2003 once the CITES Secretariat, in cooperation with the IUCN/SSC Crocodile Specialist Group, had confirmed their legal origin. No exports of skins were reported in trade until 2012, when Paraguay exported 2,504 skins, mostly to Spain. In 2013 Paraguay exported 22,750 skins, all of which were wild-sourced. The moratorium was fully lifted in 2014 (CITES Notification 2014/009 of 10 February 2014) during which year 4,539 skins were reported by importers (Spain and the United States). Paraguay reported exporting 1,000 wild skins to Bolivia in 2016, but none have been reported since then.

Melanosuchus niger Black Caiman

The Brazilian population of this species was transferred from CITES Appendix I to Appendix II in 2007. Brazil reported the export of 190 skins to Argentina and 100 to Italy in 2014 and a further 584 skins to Argentina in 2015. No skins were exported in 2016 or 2017 but in 2018 Brazil reported exporting 1,044 skins, all sourced

[7] According to CITES Standard nomenclature, which the CITES Trade Database follows, *Caiman yacare* is a synonym of the subspecies *Caiman crocodilus yacare*, and as such trade reported from range States as *Caiman crocodilus* has been included as trade in the subspecies *C. crocodilus yacare*.

from the wild, to Mexico. In 2023, Mexico reported importing 528 skins of ranched specimens from Brazil.

All other crocodilian species

There have been no reported commercial exports from range States between 2014 and 2023 of skins of the following taxa: *Crocodylus cataphractus*, *C. intermedius*, *C. palustris, Alligator sinensis*, *Osteolaemus tetraspis*, *Paleosuchus palpebrosus*, *P. trigonatus*, *Gavialis gangeticus* or *Tomistoma schlegelii*.

Trade in live animals

The commercial export of live crocodilians outside of their range States poses a potential threat to the natural biological diversity of the importing countries, particularly if naturalized populations become established. Indeed, possibly discarded pet animals of spectacled caiman can currently be found in Florida and the Everglades National Park where damage to natural fauna is being reported. The continued growth of the crocodilian farming industry means that such threats are likely to continue and should be guarded against.

Live crocodilians are traded for many purposes. Young animals are frequently kept as personal pets; zoos regularly exhibit such creatures and there are well-established crocodile breeding establishments in countries such as Denmark, France, Morocco, South Africa, Spain, and Thailand. Crocodile farms and ranches import animals to supplement their gene pool, and some animals are imported by range States to strengthen wild populations. This variety of use, and the limited number of possible purpose codes used in CITES annual reports, means that some conclusions drawn from analysis of CITES data are only tentative. For example, the purpose code 'T', which indicates a commercial transaction, could apply equally if the animals were destined for either the pet trade or the farming industry. Below we consider the reported trade in live animals on a species-by-species basis.

Alligator mississippiensis

In 2022 Japan reported importing 2,028 captive-bred animals from Taiwan, Province of China.

Alligator sinensis

No trade has been reported in this species.

Caiman crocodilus

Guyana: Guyana reported exporting 69 live animals to Canada in 2021, a further 353 to Canada and the Netherlands in 2022, and 340 to Canada, India, Netherlands and the Russian Federation in 2023. All live animal exports were wild-sourced.

Suriname: This country regularly exports small numbers of wild-caught animals for the pet industry and in 2021 Suriname reported exporting three to Hong Kong SAR. In 2023, Indonesia reported importing 100 wild-caught animals.

Melanosuchus niger

No trade in live animals from range States was reported between 2021 and 2023.

Paleosuchus palpebrosus

For 2021 and 2022, Guyana published an annual export quota of 500 live, wild-sourced animals. In 2021 Guyana reported exporting 403 animals, a further 376 in 2022 and 468 in 2023 (although no quota was published in 2023). Importing countries reported higher figures. It should be noted that although the annual reports cover the period January to December, the quota year for Guyana runs from April to April. Most of the animals were likely to be for the pet industry (recorded as purpose 'T'), with the main importing country being the United States.

Paleosuchus trigonatus

For 2021 and 2022, Guyana published an annual export quota of 1,000 live, wild-sourced animals. Exports reported by Guyana remained below this number, with 602 reported as exports in 2021, 613 in 2022 and 811 in 2023 (although no quota was published in 2023). As with *P. palpebrosus*, importing counties reported higher figures. Nearly all of the exports were reported as purpose 'T', the main importing country being the United States.

Crocodylus moreletii

Mexico reported exporting 120 captive-bred animals to the United States in 2021.

Crocodylus niloticus

In 2021 Zimbabwe exported 26 ranched animals to the Democratic Republic of the Congo using the purpose code 'Z'. Most of the trade in this species is of captive-bred animals going to crocodile farms and zoos.

Crocodylus porosus

Thailand reported exporting 100 animals to China in 2021, and Malaysia reported exporting 80 animals to the Islamic Republic of Iran in the same year. Malaysia reported exporting 100 animals to the United Kingdom in 2022. All reported exports were captive-bred and for purpose 'T'.

Crocodylus siamensis

Over the decade under review, China has been the principal importer of live specimens of *C. siamensis* and began importing this species from Thailand in 1997, from Cambodia in 2000, and from Viet Nam in 2003. As shown in Table 10, China has imported 314,195 live specimens from these countries in the 10-year period 2014 to 2023, all of which were captive-bred and the majority for purpose 'T'. There have been no exports to China since 2019.

Table 10. Direct, commercial exports of live *Crocodylus siamensis* to China reported by the exporting countries, 2014-2023.

Exporter	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cambodia	0	2,000	*2,000	0	0	5,200	0	0	0	0
Thailand	0	0	0	0	2,000	2,000	0	0	0	0
Viet Nam	23,770	30,600	63,198	28,700	52,700	102,027	0	0	0	0
Total	**23,770**	**32,600**	**65,198**	**28,700**	**54,700**	**109,227**	**0**	**0**	**0**	**0**

Key: * Figure derived from importer-reported data.

Trade in other by-products

Meat

Between 1990 and 2002, the quantity traded globally fluctuated at around 400 tonnes (t) per year. Exports began an upward trend in 2003, and in 2007 peaked at just under 1,000 t. Trade levels subsequently decreased to 400 t in 2009 but have been over 600 t per year between 2012 and 2017. Quantities fell to just over 500 t in 2018, increased slightly in 2019 and fell to around 350 t in 2020. Trade in 2022 was the lowest since at least 1990, perhaps as a reaction to 'exotic' meat suggested as the origin of COVID-19. However, Thailand's export of *Crocodylus siamensis*, particularly to Hong Kong SAR in 2023, reversed this trend. Total global commercial exports of crocodilian meat, as reported in CITES and CFAZ annual reports from 2014 to 2023, are provided in Figure 6. Global trade averaged just over 520 t per year during the decade under review.

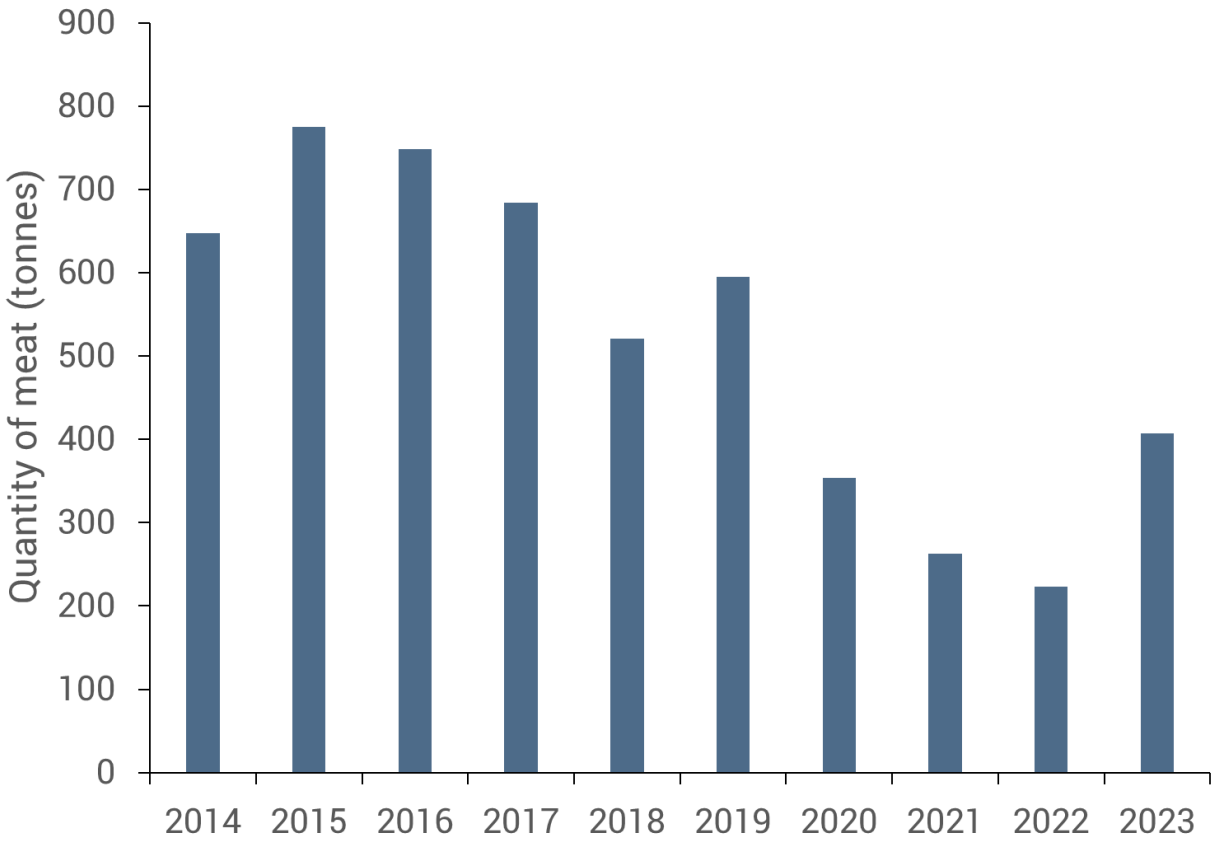

Figure 6. Direct, commercial global exports of crocodilian meat as reported by exporters in CITES and CFAZ annual reports, 2014–2023.

Since 1988, there have been major fluctuations in the countries and species involved in the meat trade. Until 1992, the main species in trade was *Alligator mississippiensis* from the United States, particularly to Canada, Japan, Taiwan, Province of China, and the United Kingdom. No exports to Taiwan, Province of China have been reported since 1994 and exports of meat from this species have fallen since 1995. No exports were reported in 2021 and the only importer in 2022 and 2023 was Canada.

Exports of *Crocodylus niloticus* meat, which originate mainly from South Africa, Zambia, and Zimbabwe, increased steadily from less than two tonnes in 1992 to over 470 t in 2007, but then decreased to 125 t in 2009. Exports subsequently recovered and were around 250 t in both 2011 and 2012. Despite a drop in 2013, over 200 t was exported each year between 2014 and 2017. In 2018, exports fell but increased again in 2019. Exports in 2020 amounted to less than 50 t. As with skin data for Zimbabwe, data provided by CFAZ have been used in preference to the CITES annual report except for the years 2018 and 2020, where the quantities reported to CITES were higher. Zimbabwe did not report any meat exports between 2021 and 2023. Reporting of the crocodile meat trade by southern African countries appears to be of varied quality based on comparisons with importer data. The main destinations for *C. niloticus* meat 2021-2023 were Europe and Hong Kong SAR.

Exports of *Crocodylus novaeguineae* meat are infrequent but Australia reported importing 10 t in 2020.

Australia's exports of C*rocodylus porosus* meat averaged 18.3 t over the decade under review. The main importer of Australia's production was Japan, with other large quantities imported by New Zealand and Singapore. *C. porosus* meat was also traded at relatively low levels from Indonesia with 2.4 t exported in 2021, 4.5 t in 202 and 6.6 t in 2023. Malaysia's exports have fallen from 1.3 t in 2020 to less than a tonne in the three following years. Papua New Guinea exported approximately 17 t in 2021 and 2022, and a further 21.5 t in 2023.

Until 2005, Thailand was the only exporter of *Crocodylus siamensis* meat and exports had averaged about 35 t annually between 1999 and 2003. Exports from Thailand increased to almost 400 t in 2006 and in the decade under review averaged about 310 t annually. The main importers were China, Hong Kong SAR, Japan and Singapore. Other exporters of meat from this species have been Cambodia and Viet Nam however exports from Viet Nam have not been reported since 2019.

Teeth

Australia is the world's foremost importer of crocodile teeth. Papua New Guinea and Singapore reported exporting over 67,000 teeth to Australia between 2021 and 2023. All the teeth were obtained from *Crocodylus porosus* from captive-breeding operations.

Declared dollar value

Although CITES annual reports do not usually contain information concerning the value of the trade or of individual shipments, the United States included this information in its annual reports between 1997 and 2018. There are great fluctuations amongst the reported values, and no indication of the size or quality of the skins is provided; furthermore, for caiman species, flanks may have been reported as whole skins which further complicates interpretation of the data. Values that appear erroneous and are likely to have been the result of typographic errors have been ignored in the analysis below. Publicly available data from the United States Fish and Wildlife Service USFWS Office of Law Enforcement[8] have been used for 2019-2020; these data are not fully comprehensive of all trade and therefore the data are not fully comparable to the historical data for 2012-2018.

The average declared value per skin (in USD) of exports of *Alligator mississippiensis* skins and the reported value of re-imports of these skins from Europe, Mexico, and Asia are provided in Table 11. The average value of the exported skins increased year-on-year between 2010 and 2015 but decreased through 2018. Although the value of the original exports fluctuates from year to year, the value of re-imported skins has been consistently higher than that of exported skins throughout the period 2014-2018. As mentioned above, the average values for 2019-2020 should be considered separately from the rest of the decade due to differing data sources.

Table 11. Reported US dollar value of *Alligator mississippiensis* skins (mean value per skin) exported and re-imported by the United States, 2014-2023. Data for 2021-2023 were not available at the time of writing.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Exports by USA	261.6	275.6	241.0	243.5	242.3	218.1	202.3	-	-	-
Re-imports by USA	444.15	391.5	364.8	310.1	391.3	261.5	190.5	-	-	-

Source: United States annual reports to CITES 2014-2018 and USFWS Office of Law Enforcement data for 2019 and 2020.

Table 12 compares the average value per skin of Colombian *Caiman crocodilus fuscus* imported directly from Colombia and via third countries, as reported by the United States. The re-exporters of skins vary from year to year, but the majority were imported directly from Colombia, or indirectly via Singapore, Europe, and Mexico. The declared value of the direct imports from Colombia increased between 2008 and 2014, were stable for the next two years but decreased in 2017-2018; the apparent further decline in value in 2019-2020 should be interpreted with caution due to the differing data sources for these years. The value of skins imported from third countries showed no specific trends. It should be noted that in 2019 and 2020 nearly all the skins were reported as direct imports from Colombia.

Table 12. Reported US dollar value of *Caiman crocodilus fuscus* skins (mean value per skin) originating in Colombia and imported by the United States, 2014-2023. Data for 2021-2023 were not available at the time of writing.

(Re-)Exporter	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Colombia	96.8	93.0	97.2	78.4	71.1	66.9	66.5	-	-	-
European Union	58.4	78.4	44.8	56.3	40.9	-	-	-	-	-
Mexico	23.7	20.7	41.5	41.0	40.5	-	-	-	-	-
Singapore	70.9	71.4	28.3	-	-	-	-	-	-	-

Source: United States annual reports to CITES 2014-2018 and USFWS Office of Law Enforcement data for 2019 and 2020.

[8] Accessed on 21.03.2024 from https://www.fws.gov/library/collections/office-law-enforcement-importexport-data (last updated 17.10.2023).

Reported seizures

Information on seizures is reported inconsistently in CITES annual reports. Furthermore, the data recorded by customs rarely allow the goods to be identified at the species level. Most of the seizures that are reported are of tourist items such as dried heads, whole stuffed baby crocodiles, etc., and personal imports of manufactured leather goods. Many of the items seized on import are subsequently released to the importer when adequate permits have been obtained. It should be noted that the United States uses source code 'I' to specify re-exportation or repatriation of the seized material, as well as to indicate the seizures themselves.

There were no significant seizures reported in the period 2021-2023.

Recommendations

The following recommendations made in previous IACTS reports remain valid:

- Countries should, where possible, adopt the CITES standard permit number format which identifies both the exporting country and the year of permit issuance (see CITES Resolution Conf. 12.3 (Rev. CoP19) on *Permits and certificates*). This would allow for more accurate cross-matching of shipments.
- Standardisation of the terminology used to describe parts of crocodilian skins would reduce the risk of double-counting and subsequent overestimation of trade levels. There is often confusion between hornbacks and back skins for *Crocodylus niloticus* and between whole skins and sides for caiman.
- As the source of specimens (e.g. wild, captive-bred, etc.) provides critical information for determining the conservation impact of trade, CITES Parties should strive to accurately report the source of crocodilian material as defined in the *Guidelines for the preparation and submission of CITES annual reports* (see CITES Notification No. 2025/021 Annex 1).
- Countries with large-scale farming operations should establish strict monitoring and management programmes for their wild crocodilian populations, and any farming of non-native species should be strictly regulated to ensure there are no escapes into the wild. Although breeding in captivity can alleviate pressure on wild populations, it can also remove the incentive to preserve them.
- It is recommended that the CITES Secretariat and the Chair of the Standing Committee contact Parties in June of each year to remind them of their reporting obligations under Article VIII, paragraphs 6 and 7 of the Convention.
- Wherever possible, Parties should report the actual quantities of skins being traded and should specify whether their annual report compilation is based on actual trade or permits issued.

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Annex: Purpose and source codes

Table 13. Codes for purpose of trade

Code	Description
B	Breeding in captivity or artificial propagation
E	Educational
G	Botanical gardens
H	Hunting trophies
L	Law enforcement/judicial/forensic
M	Medical (including biomedical research)
N	Reintroduction or introduction into the wild
P	Personal
Q	Circuses and travelling exhibitions
S	Scientific
T	Commercial
Z	Zoos

Table 14. Codes for source of specimens in trade

Code	Description
A	Plants that are artificially propagated in accordance with Resolution Conf. 11.11 (Rev. CoP18), as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 5 (specimens of species included in Appendix I that have been propagated artificially for non-commercial purposes and specimens of species included in Appendices II and III)
C	Animals bred in captivity in accordance with Resolution Conf. 10.16 (Rev. CoP19), as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 5
D	Appendix-I animals bred in captivity for commercial purposes in operations included in the Secretariat's Register, in accordance with Resolution Conf. 12.10 (Rev. CoP15), and Appendix-I plants artificially propagated for commercial purposes, as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 4, of the Convention;
F	Animals born in captivity (F1 or subsequent generations) that do not fulfil the definition of 'bred in captivity' in Resolution Conf. 10.16 (Rev. CoP19), as well as parts and derivatives thereof;
I	Confiscated or seized specimens (may be used with another code)
O	Pre-Convention specimens
R	Ranched specimens: specimens of animals reared in a controlled environment, taken as eggs or juveniles from the wild, where they would otherwise have had a very low probability of surviving to adulthood
U	Source unknown (must be justified)
W	Specimens taken from the wild
X	Specimens taken in 'the marine environment not under the jurisdiction of any State'
Y	Specimens of plants that fulfil the definition for 'assisted production' in Resolution Conf. 11.11 (Rev. CoP18) as well as parts and derivatives thereof