UNEP-WCMC technical report

Overview of international trade in United States turtle **species 2000-2023**









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Overview of international trade in United States turtle species 2000-2023

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Introduction

Produced for the Association of Fish and Wildlife Agencies (AFWA), this pilot trade status report examines international trade in 63 turtle species native to the United States of America¹ (hereafter the United States, or US) over the past two decades. The report provides an overview of the 52 species with relevant trade data, in order to provide information on the volume of trade, trade routes, and the main terms and sources in trade for each species (see Methodology below). The aim of this analysis is to assist government regulatory agencies and biologists in making informed decisions and recommendations relative to state, national, and international issues pertaining to turtle species management, regulation, and trade.

Based on the utility of this pilot assessment, other CITES-listed species native to the United States, such as bobcats (*Lynx rufus*), river otters (*Lontra canadensis*), and black bears (*Ursus americanus*), may benefit from similar analyses in the future.

Methodology

The trade summaries that are presented in the pages that follow provide a summary of available trade data for the focal turtle species. Data on exports by the United States were collated from the United States Fish and Wildlife Service (USFWS) Office of Law Enforcement online repository for the years 2000-2020², as well as Law Enforcement Management Information System (LEMIS) data for the years 2021-2023³ (hereafter collectively referred to as the 'LEMIS database'). For species listed in the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), global trade data were also downloaded from the CITES Trade Database for the years 2000-2022⁴.

Data were extracted from these databases for the 63 focal species, including all trade terms, purposes, and sources of trade. The Turtles of the World checklist was used as the core taxonomic backbone; data from LEMIS, the CITES Trade Database and the IUCN Red List were primarily mapped to this by accepted name, however, where possible, instances of synonymy were accounted for. The data were then subset to direct trade only (i.e. excluding re-exports), with the majority of the analysis focusing on trade reported in terms equivalent to whole individuals⁵ (hereafter referred to as 'individuals'). Trade in individuals reported by weight were excluded from the analysis⁶.

The report provides an overview of direct exports of individuals by the United States for each species over the period 2000-2023, in order to provide information on the volume of trade, trade routes, and the main terms and sources in trade. Trade summaries are presented as graphics highlighting the following information (where sufficient data are available):

- Total quantities exported per year: a time series line plot based on exports reported by the United States (LEMIS database), and, where available for CITES-listed species, importer-reported imports (from the United States) from the CITES Trade Database;
- 2) **Terms in trade**: a bar plot summarizing terms (commodities) in trade, such as live individuals, bodies, carapaces, etc, based on LEMIS data only;

¹ The list of turtle species for analysis was provided by the Louisiana Department of Wildlife and Fisheries and is based on "Turtles of the World: Annotated checklist and atlas of taxonomy, synonymy, distribution, and conservation status, 8th edition." 2017. <u>http://images.turtleconservancy.org/documents/2017/crm-7-checklist-atlas-v8-2017.pdf</u>

 ² Available at <u>https://www.fws.gov/library/collections/office-law-enforcement-importexport-data</u> and accessed on 21 March 2024.
 ³ Data for the years 2021-2023 were provided to UNEP-WCMC via a USFWS Freedom of Information Act (FOIA) request granted on 4 March 2024 for the purposes of this analysis.

⁴ Source: CITES Trade Database 2024. Compiled by UNEP-WCMC for the CITES Secretariat. Available at trade cites org. Accessed 8 May 2024. CITES trade data were only available following the year of a given species' CITES listing. CITES trade data for the year 2023 are not yet available.

⁵ Based on trade in terms equivalent to whole organisms (live, bodies, skulls, skeletons, trophies, and carapaces) reported by number of specimens. The unit 'number of specimens' includes trade data reported with unit code 'NAR' or where the unit column is blank.

⁶ In total, 52 385 kg and 3864 g of trade in individuals reported by weight was removed.

- 3) Sources of trade: a bar plot summarizing the sources of trade as reported in the LEMIS database, such as wild-sourced ('W'), captive-bred ('C'), or captive-born ('F'), based on LEMIS data only⁷. As defined by US CITES Document Requirements <u>CFR 23.24</u>, specimens reported as taken from the wild (source code 'W') may include specimens born in captivity from an egg taken from the wild or from wildlife that mated or exchanged genetic material in the wild;
- 4) Trade routes: a proportional flow diagram shows exports by the United States as reported in the LEMIS database, with importers displayed at the country level. Where more than five importers were reported in trade, additional importing countries have been grouped as 'Other'. For CITES-listed species only, a second diagram summarizes global exporter-reported exports as reported in the CITES Trade Database, with exporters and importers grouped by CITES region^{8, 9}.

Trade in other parts and derivatives¹⁰, as reported in the LEMIS database, are included as written summaries for each species, where trade exceeded a minimum threshold of more than 500 units per term over the period 2000-2023. Further information on the definitions of trade terms and source codes can be found in the *Guidelines for the preparation and submission of annual reports* (Notification to the Parties No. 2023/132 Annex 1).

The global conservation status and population trend of each species as published in the IUCN Red List of Threatened Species¹¹, as well as the year of assessment, are included in the trade summary for each species, where applicable.

Direct trade in individuals by number was reported for 54 of the 63 focal species; the nine species without any such trade are excluded from the trade summaries and listed in the Annex (Table 1). A further two species were excluded from the trade summaries on the basis that no exports of individuals by number from the United States were reported (the only reported trade in individuals was imports reported by the United States; see Table 2 in the Annex). Trade summaries for 52 species are presented below, ordered alphabetically by family.

⁹ Central and South America and the Caribbean is displayed as 'CSAC'.

⁷ Trade records in the LEMIS database where the source code was reported as an asterisk ('*') were also included and categorized as 'Unknown' as the source of trade associated with this symbol is unclear.

⁸ Exports by the United States were displayed separately from the 'North America' exporter region (which includes only Canada and Mexico in these diagrams), in order to distinguish the main importing regions for the United States.

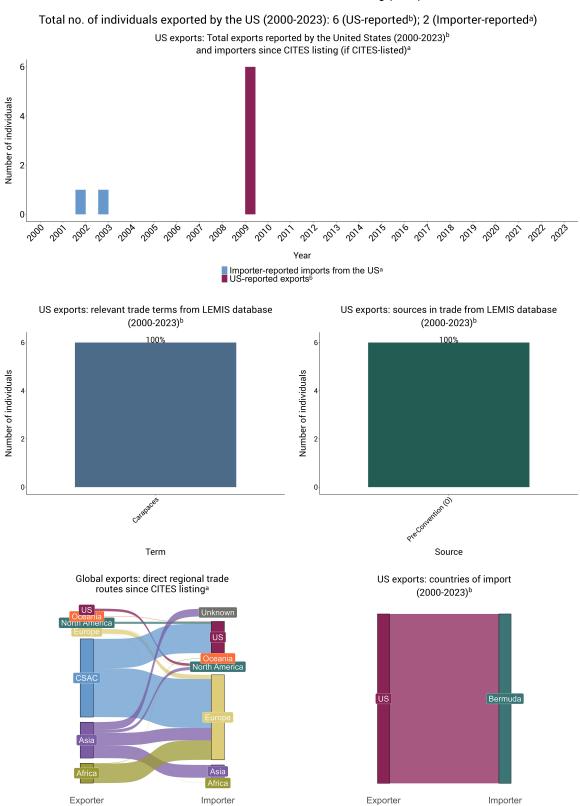
¹⁰ Excluding trade reported in 'specimens', or with no specified trade term.

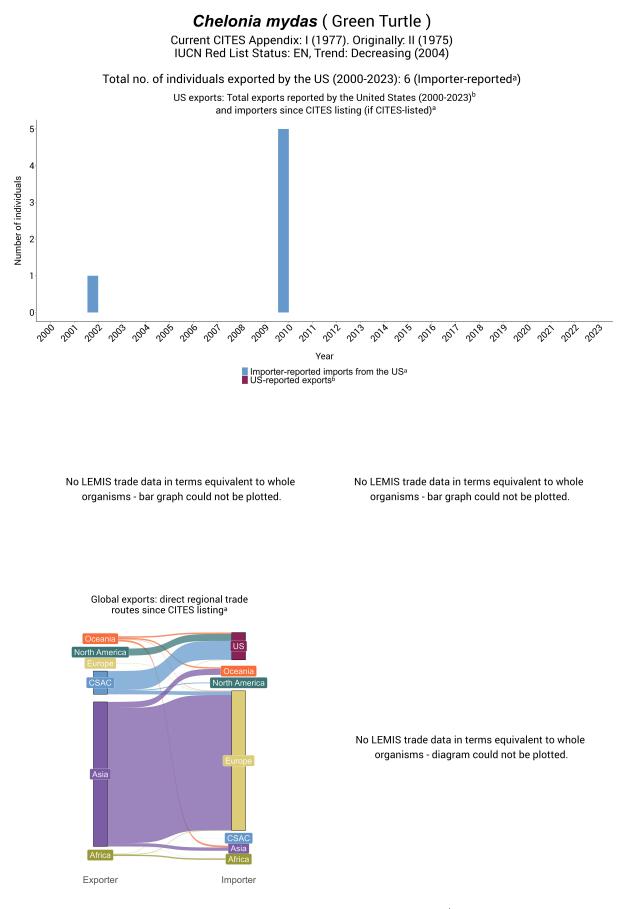
¹¹ IUCN 2024. The IUCN Red List of Threatened Species. Version 2024-1. www.iucnredlist.org. Downloaded on 3 July 2024.

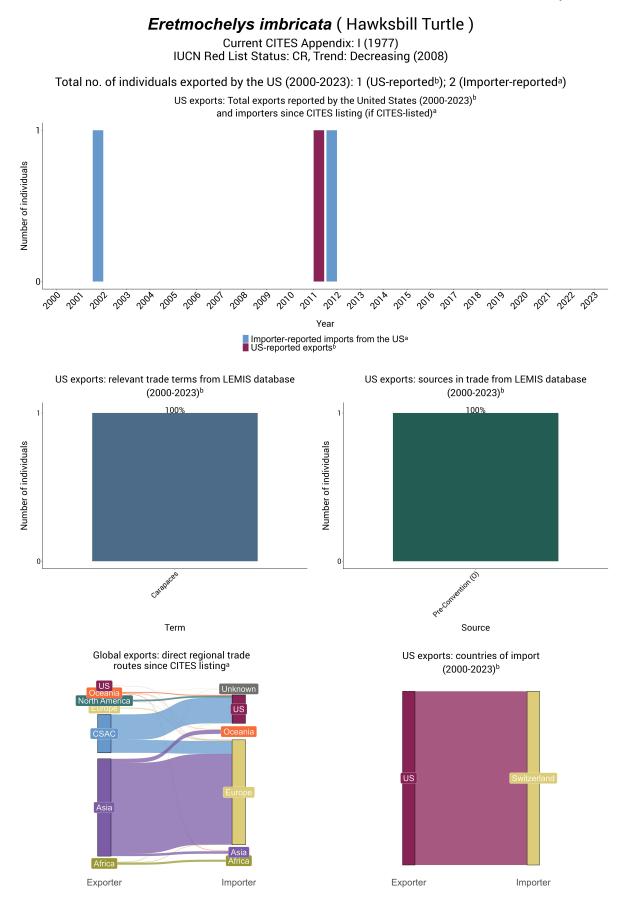
Trade summaries

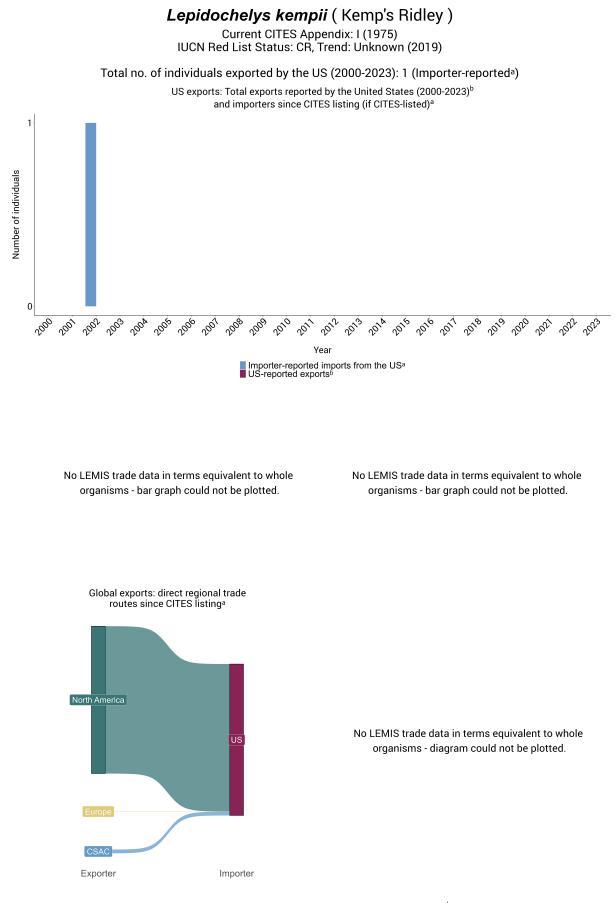
Caretta caretta (Loggerhead Turtle)

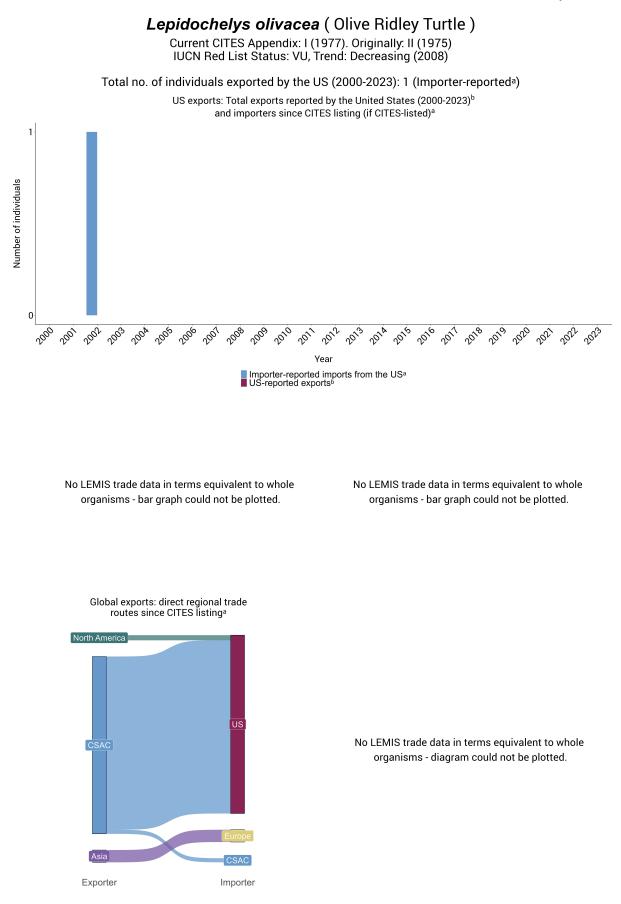
Current CITES Appendix: I (1977). Originally: II (1975) IUCN Red List Status: VU, Trend: Decreasing (2015)





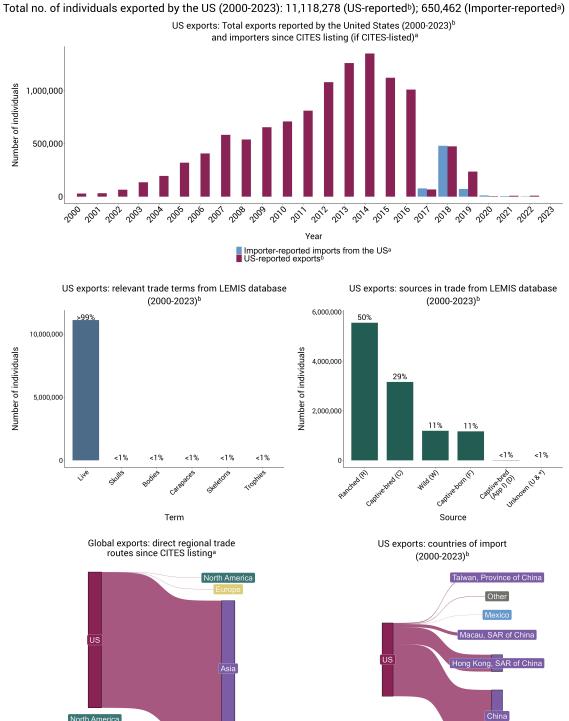






Chelydra serpentina (Snapping Turtle)

Current CITES Appendix: II (2023). Originally: III (2016) IUCN Red List Status: LC, Trend: Stable (2010)



Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

Importer

Asia Exporter

According to the LEMIS database, notable exports by the United States in parts and derivatives of C. serpentina included 3958 kg meat and 2700 live eggs.

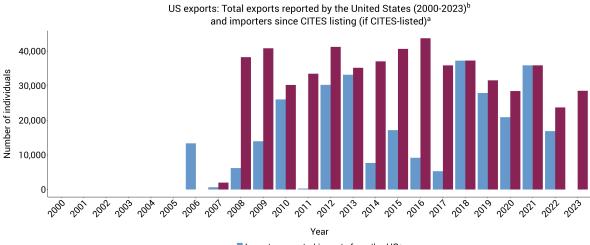
Exporter

Importer

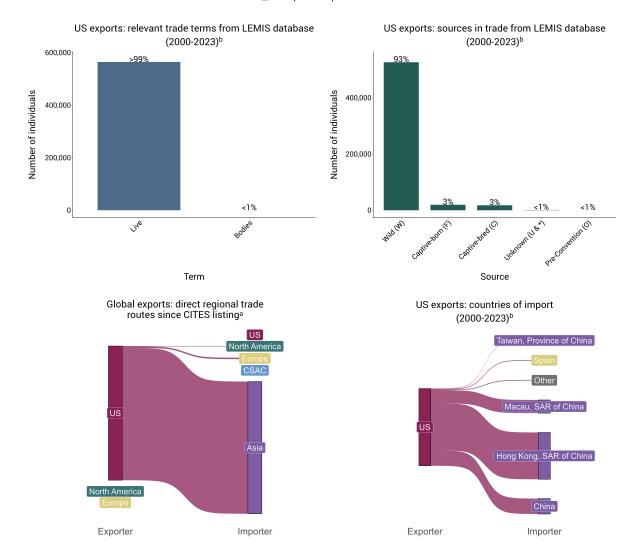
Macrochelys temminckii (Alligator Snapping Turtle)

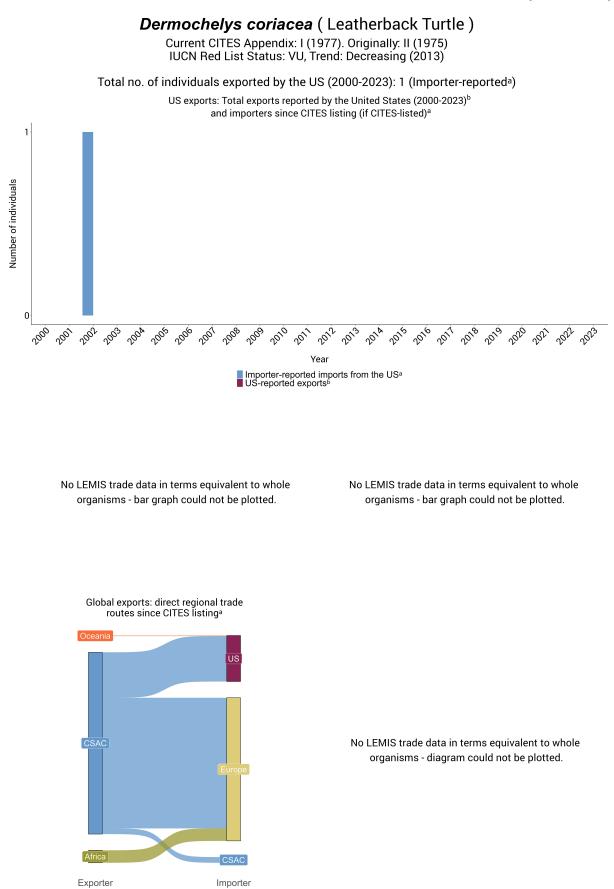
Current CITES Appendix: II (2023). Originally: III (2006) IUCN Red List Status: VU (1996)

Total no. of individuals exported by the US (2000-2023): 564,062 (US-reported^b); 302,187 (Importer-reported^a)



Importer-reported imports from the US^a US-reported exports^b

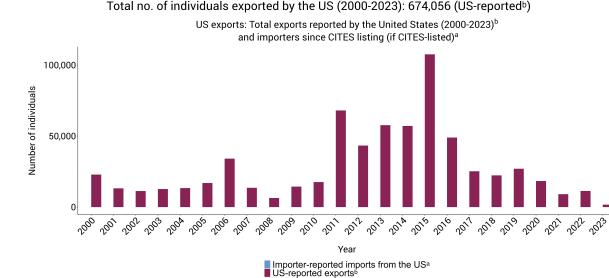


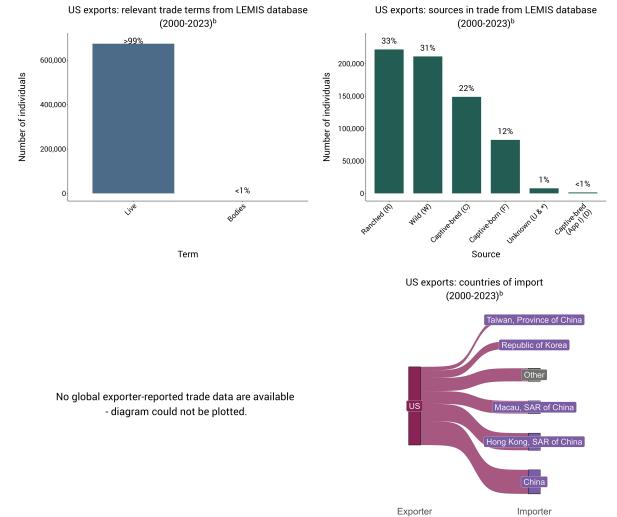


Chrysemys picta (Painted Turtle)

Current CITES Appendix: Non-CITES IUCN Red List Status: LC, Trend: Stable (2010)

Total no. of individuals exported by the US (2000-2023): 674,056 (US-reported^b)





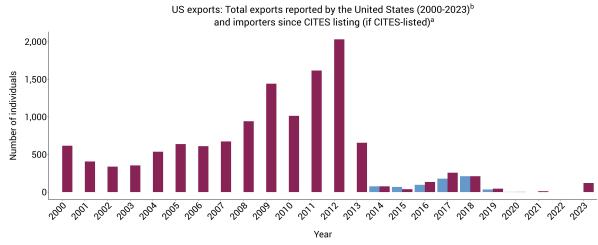
China

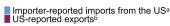
Importer

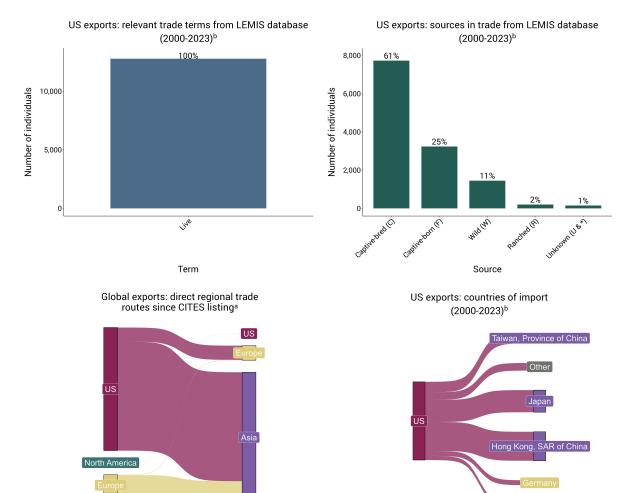
Clemmys guttata (Spotted Turtle)

Current CITES Appendix: II (2013) IUCN Red List Status: EN, Trend: Decreasing (2010)

Total no. of individuals exported by the US (2000-2023): 12,774 (US-reported^b); 668 (Importer-reported^a)





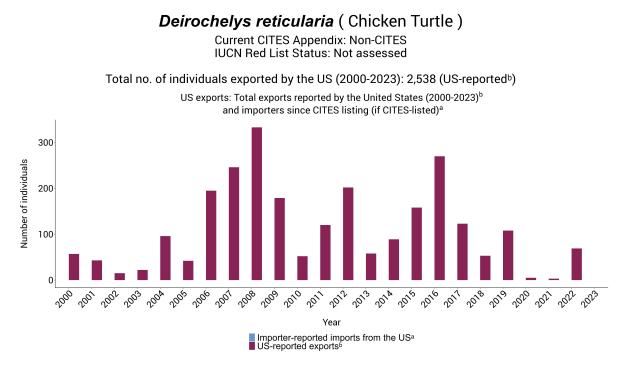


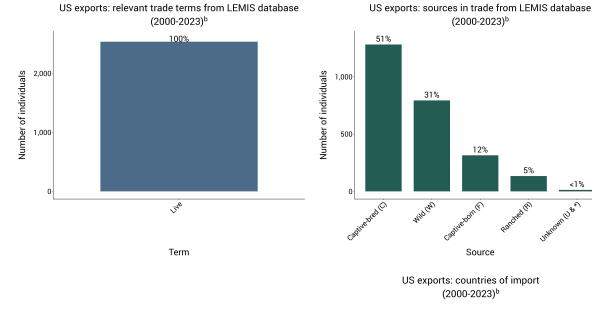
Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

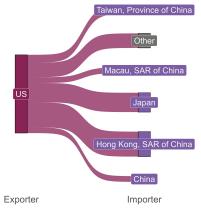
Importer

Asia – Exporter

Exporter





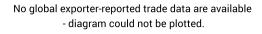


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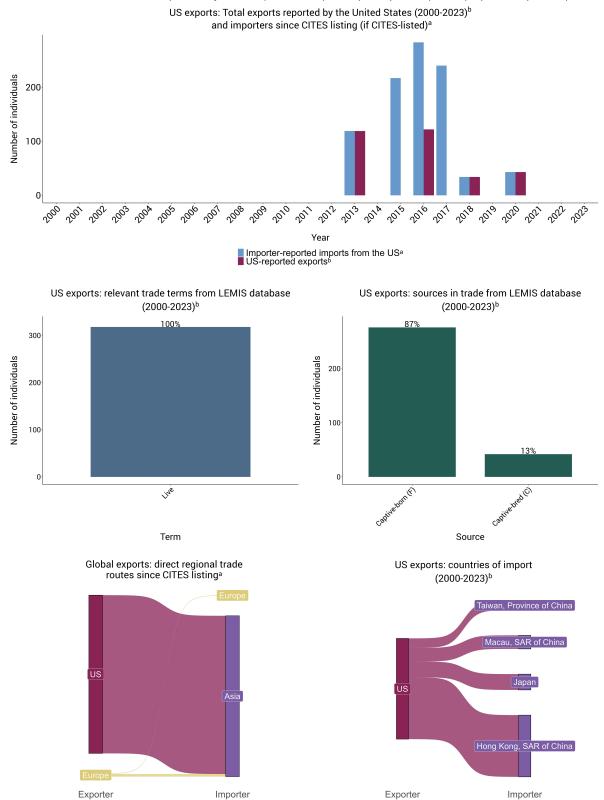
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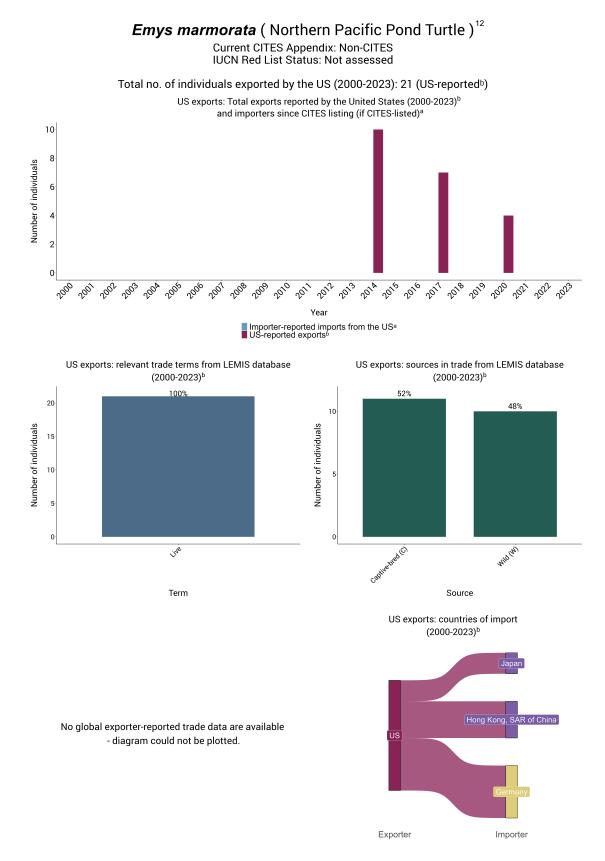


Emydoidea blandingii (Blanding's Turtle)

Current CITES Appendix: II (2013) IUCN Red List Status: EN, Trend: Decreasing (2010)

Total no. of individuals exported by the US (2000-2023): 318 (US-reported^b); 936 (Importer-reported^a)





Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database

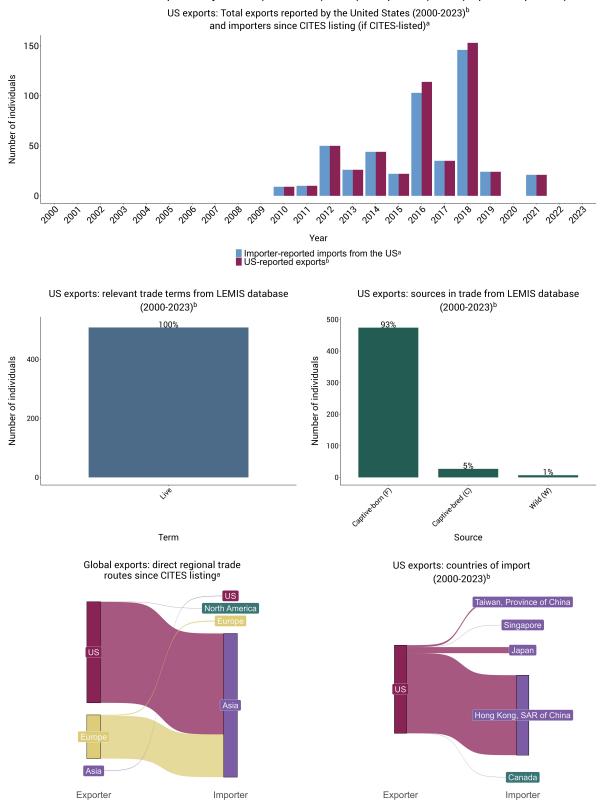
(https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

¹² *Emys marmorata* is considered a synonym of *Actinemys marmorata* by the IUCN Red List, which was assessed as Vulnerable (trend: unspecified) in 1996.

Glyptemys insculpta (Wood Turtle)

Current CITES Appendix: II (1992) IUCN Red List Status: EN, Trend: Decreasing (2010)

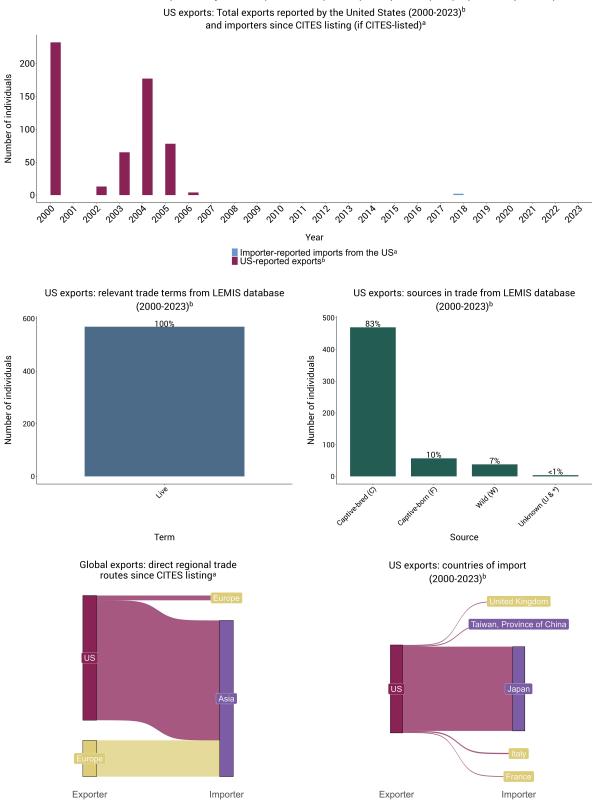
Total no. of individuals exported by the US (2000-2023): 508 (US-reported^b); 490 (Importer-reported^a)



Graptemys barbouri (Barbour's Map Turtle)

Current CITES Appendix: II (2023). Originally: III (2006) IUCN Red List Status: VU, Trend: Decreasing (2010)

Total no. of individuals exported by the US (2000-2023): 569 (US-reported^b); 2 (Importer-reported^a)

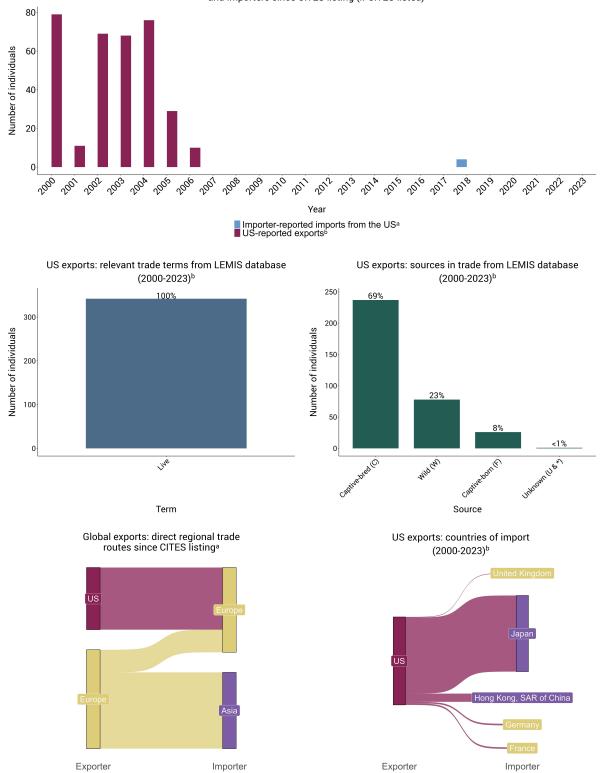


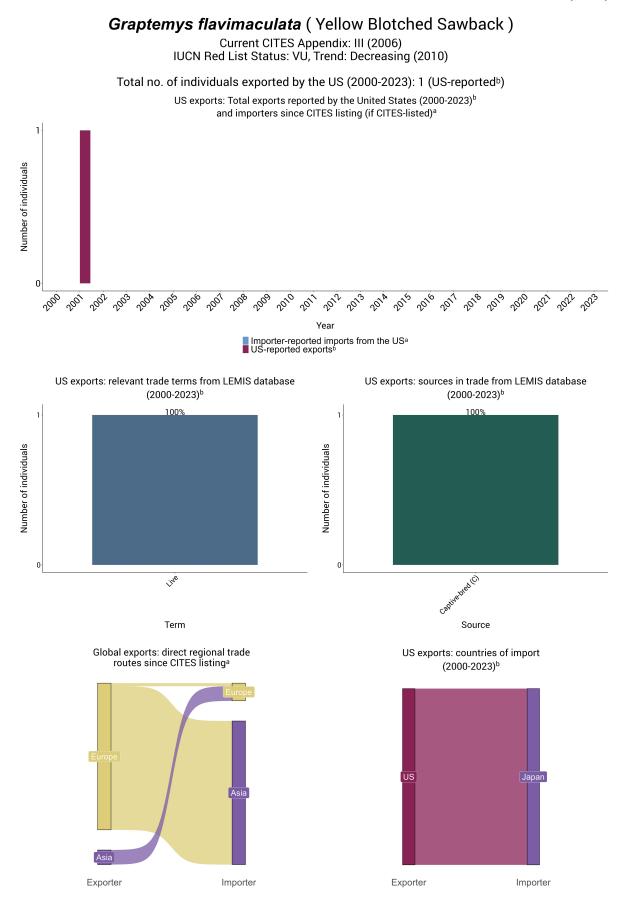
Graptemys caglei (Cagle's Map Turtle)

Current CITES Appendix: III (2006) IUCN Red List Status: EN, Trend: Decreasing (2010)

Total no. of individuals exported by the US (2000-2023): 342 (US-reported^b); 4 (Importer-reported^a)

US exports: Total exports reported by the United States (2000-2023)^b and importers since CITES listing (if CITES-listed)^a

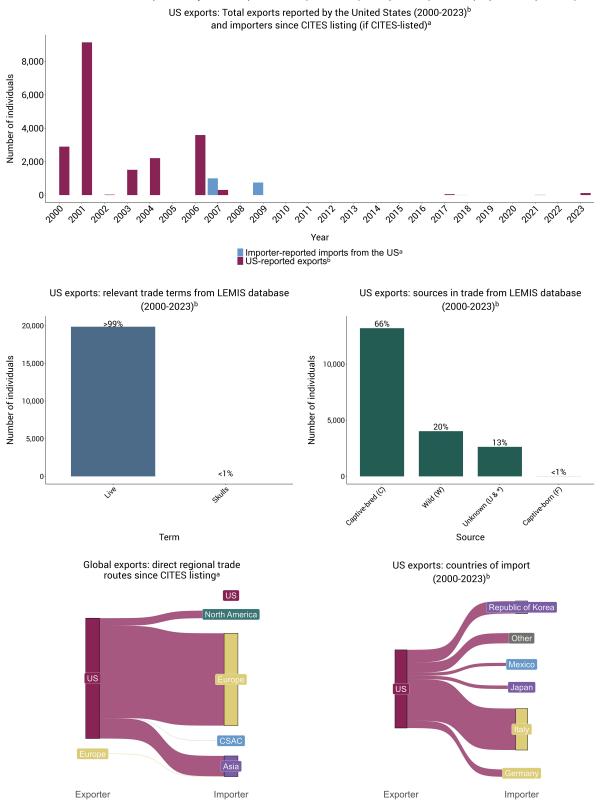


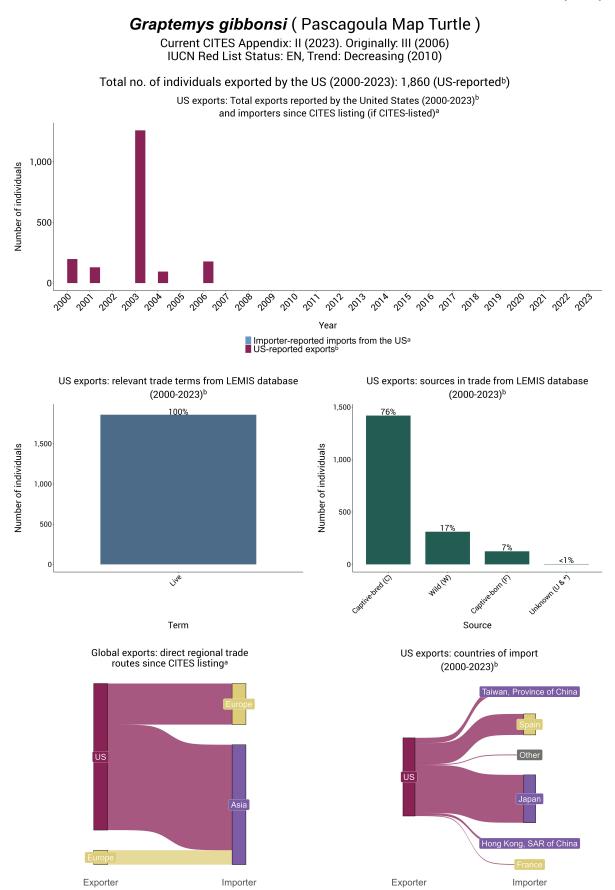


Graptemys geographica (Northern Map Turtle)

Current CITES Appendix: III (2006) IUCN Red List Status: LC, Trend: Stable (2010)

Total no. of individuals exported by the US (2000-2023): 19,872 (US-reported^b); 1,754 (Importer-reported^a)



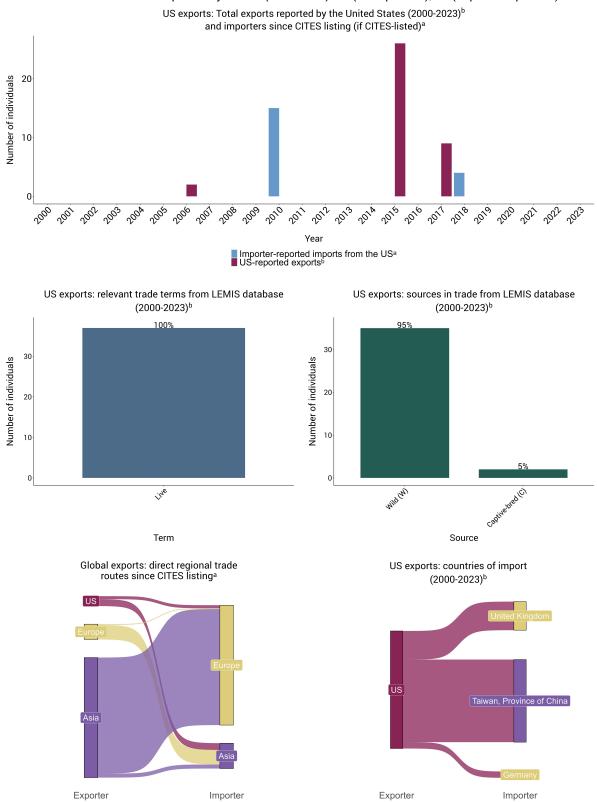


Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024



Current CITES Appendix: III (2006) IUCN Red List Status: LC, Trend: Stable (2010)

Total no. of individuals exported by the US (2000-2023): 37 (US-reported^b); 19 (Importer-reported^a)

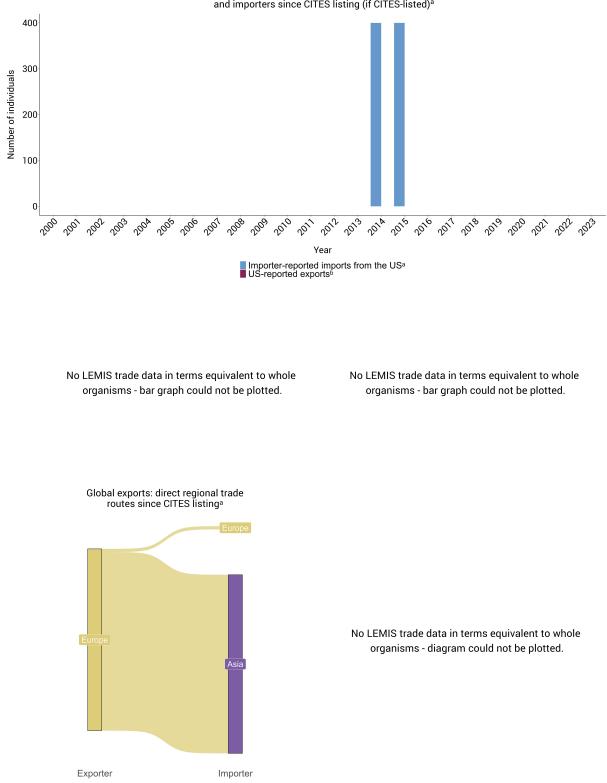


Graptemys oculifera (Ringed Sawback)

Current CITES Appendix: III (2006) IUCN Red List Status: VU, Trend: Unknown (2010)

Total no. of individuals exported by the US (2000-2023): 800 (Importer-reporteda)

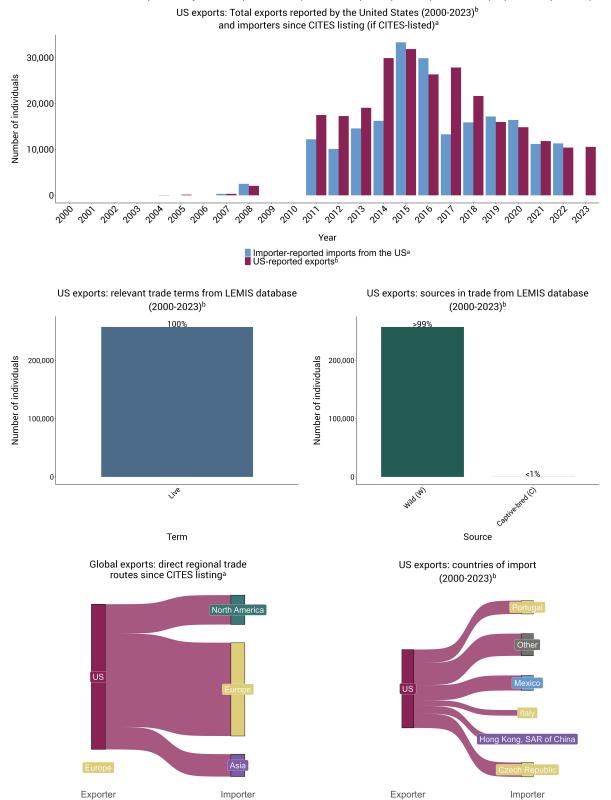
US exports: Total exports reported by the United States (2000-2023)^b and importers since CITES listing (if CITES-listed)^a

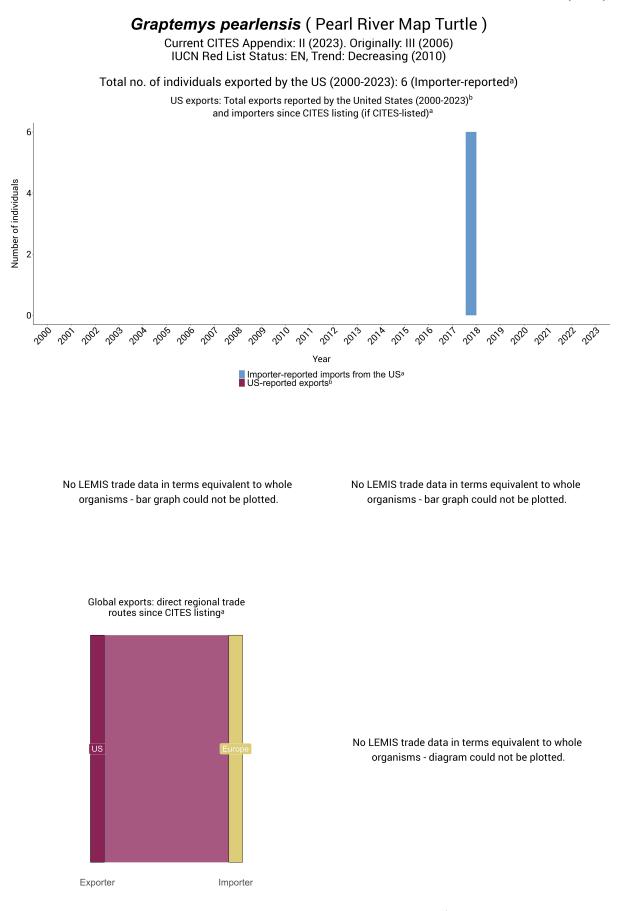


Graptemys ouachitensis (Ouachita Map Turtle)

Current CITES Appendix: III (2006) IUCN Red List Status: LC, Trend: Stable (2010)

Total no. of individuals exported by the US (2000-2023): 257,643 (US-reported^b); 204,382 (Importer-reported^a)

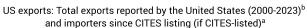


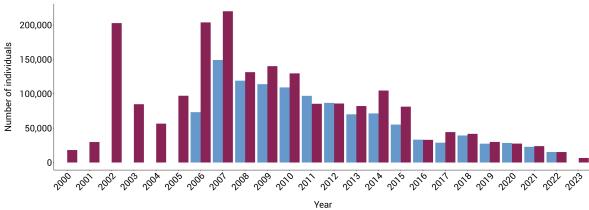


Graptemys pseudogeographica (Mississippi Map Turtle)

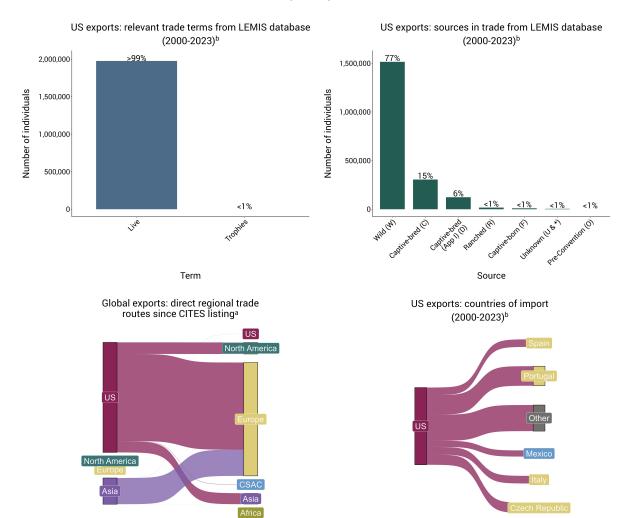
Current CITES Appendix: III (2006) IUCN Red List Status: LC, Trend: Unknown (2010)

Total no. of individuals exported by the US (2000-2023): 1,975,711 (US-reported^b); 1,140,354 (Importer-reported^a)









Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

Importer

Exporter

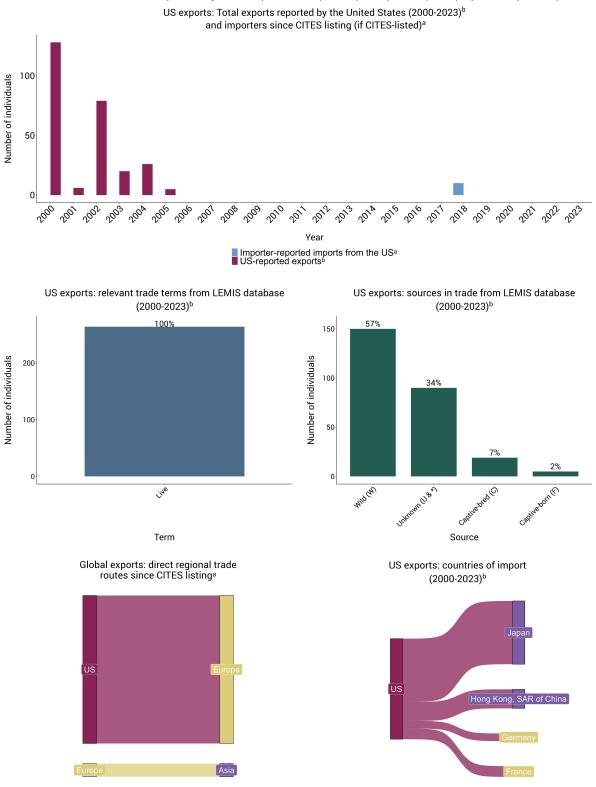
Exporter

Importer

Graptemys pulchra (Alabama Map Turtle)

Current CITES Appendix: II (2023). Originally: III (2006) IUCN Red List Status: NT, Trend: Unknown (2010)

Total no. of individuals exported by the US (2000-2023): 264 (US-reported^b); 10 (Importer-reported^a)



Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

Importer

Exporter

Exporter

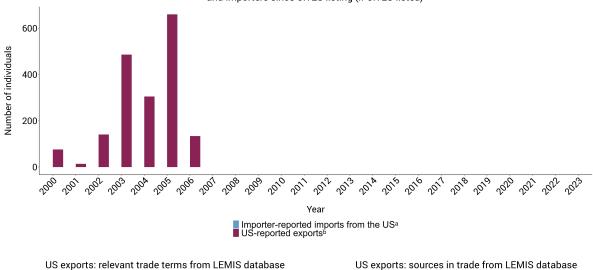
Importer

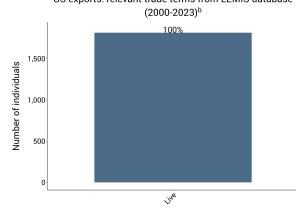
Graptemys versa (Texas Map Turtle)

Current CITES Appendix: III (2006) IUCN Red List Status: LC, Trend: Stable (2010)

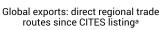
Total no. of individuals exported by the US (2000-2023): 1,816 (US-reported^b)

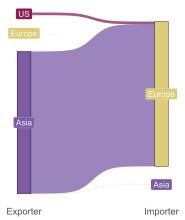
US exports: Total exports reported by the United States (2000-2023)^b and importers since CITES listing (if CITES-listed)^a

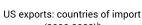




Term







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(2000-2023)^b

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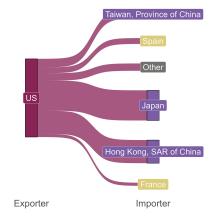
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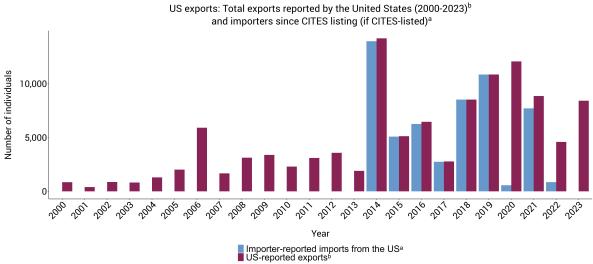
Number of individuals

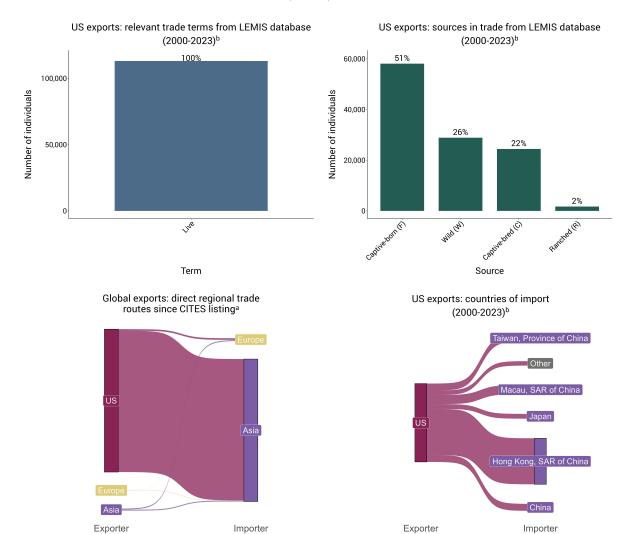


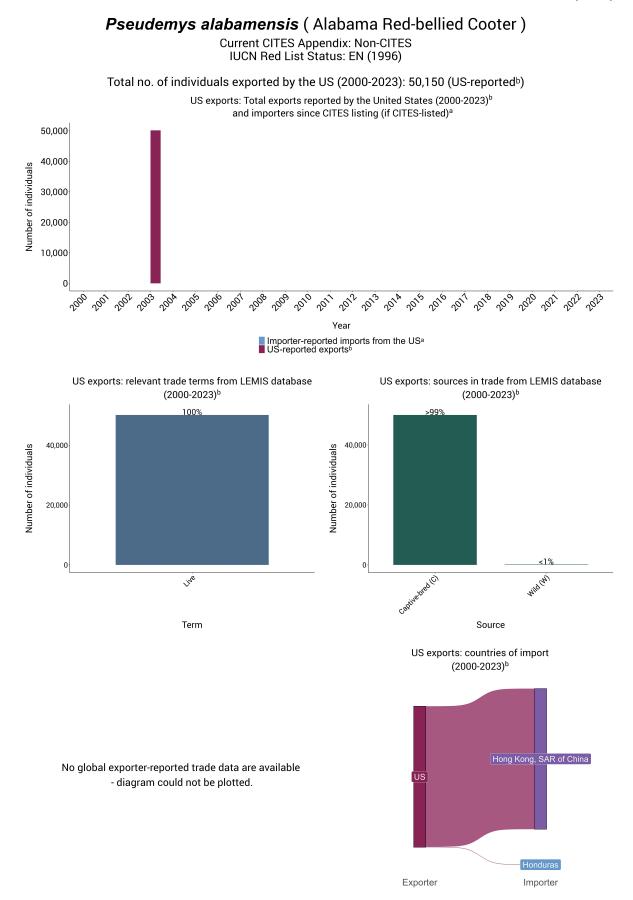
Malaclemys terrapin (Diamondback Terrapin)

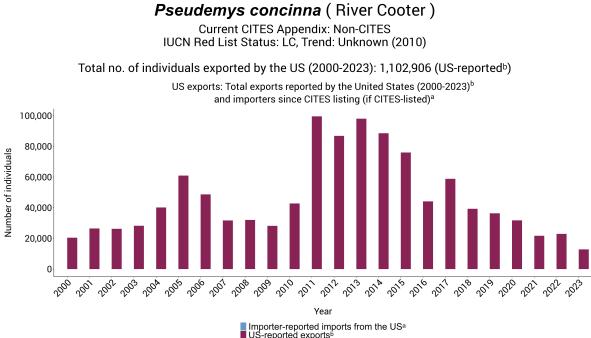
Current CITES Appendix: II (2013) IUCN Red List Status: VU, Trend: Decreasing (2018)

Total no. of individuals exported by the US (2000-2023): 113,139 (US-reported^b); 56,564 (Importer-reported^a)

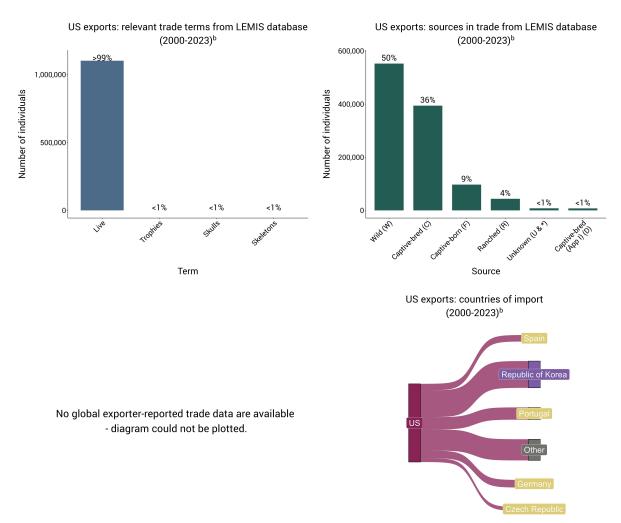








Importer-reported imports from the US^a US-reported exports^b



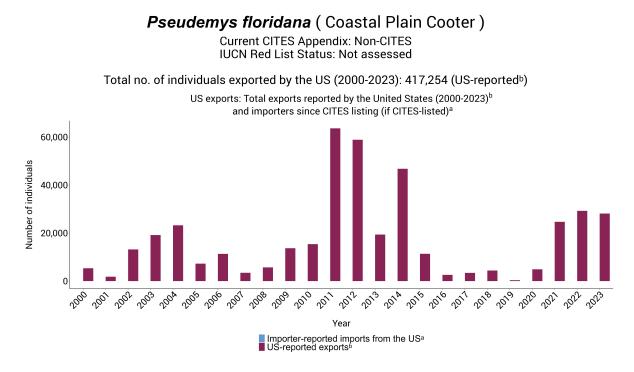
Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

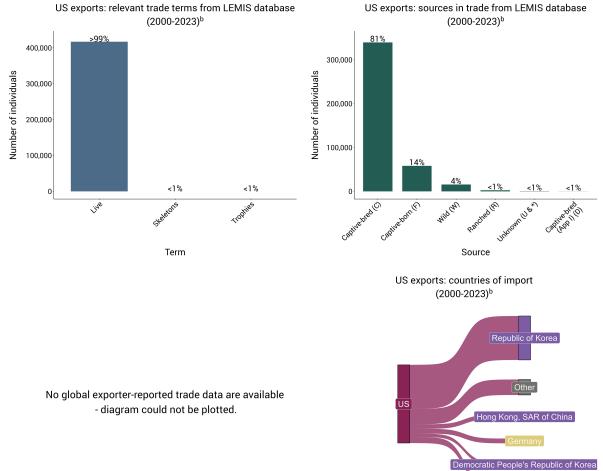
Exporter

Importer

China

Importer





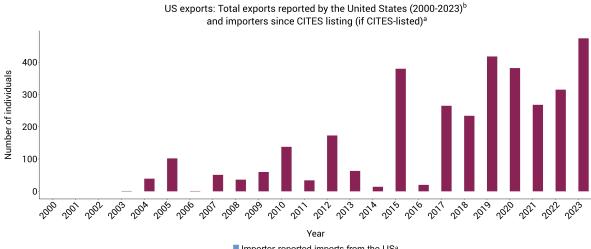
Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

Exporter

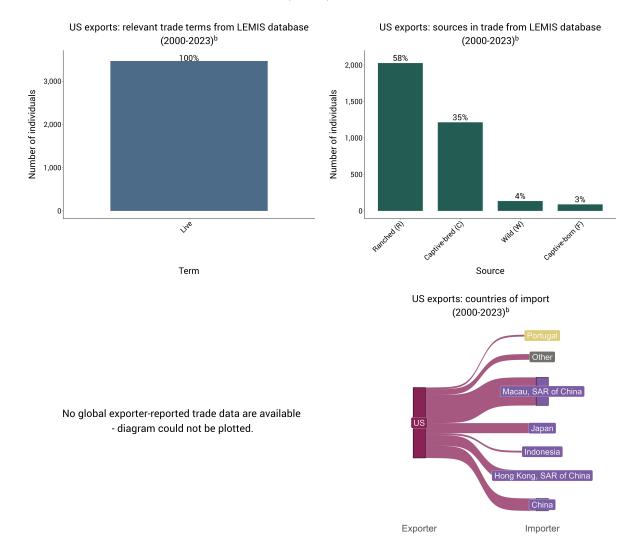
Pseudemys gorzugi (Rio Grande Cooter)

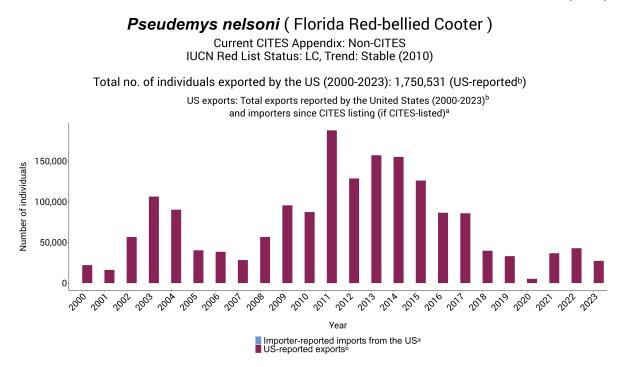
Current CITES Appendix: Non-CITES IUCN Red List Status: NT, Trend: Unknown (2010)

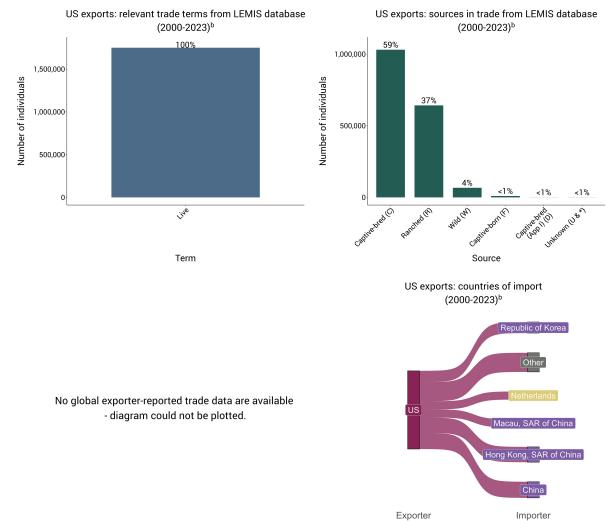
Total no. of individuals exported by the US (2000-2023): 3,468 (US-reported^b)



Importer-reported imports from the US^a
US-reported exports^b



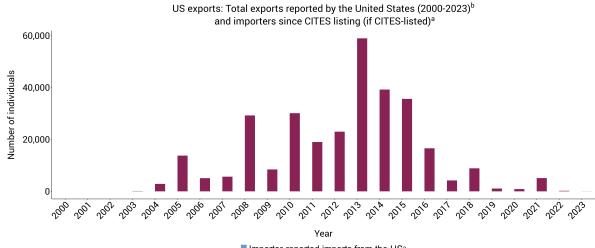




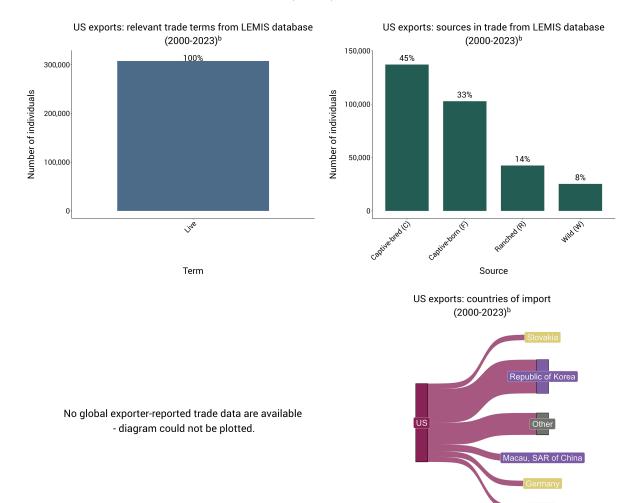


Current CITES Appendix: Non-CITES IUCN Red List Status: LC, Trend: Unknown (2010)

Total no. of individuals exported by the US (2000-2023): 307,754 (US-reported^b)

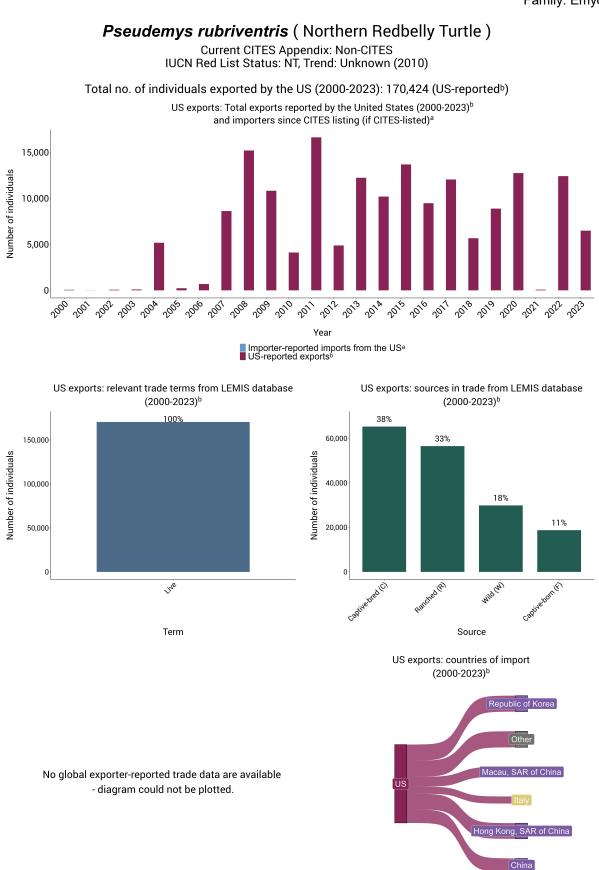


Importer-reported imports from the US^a
US-reported exports^b

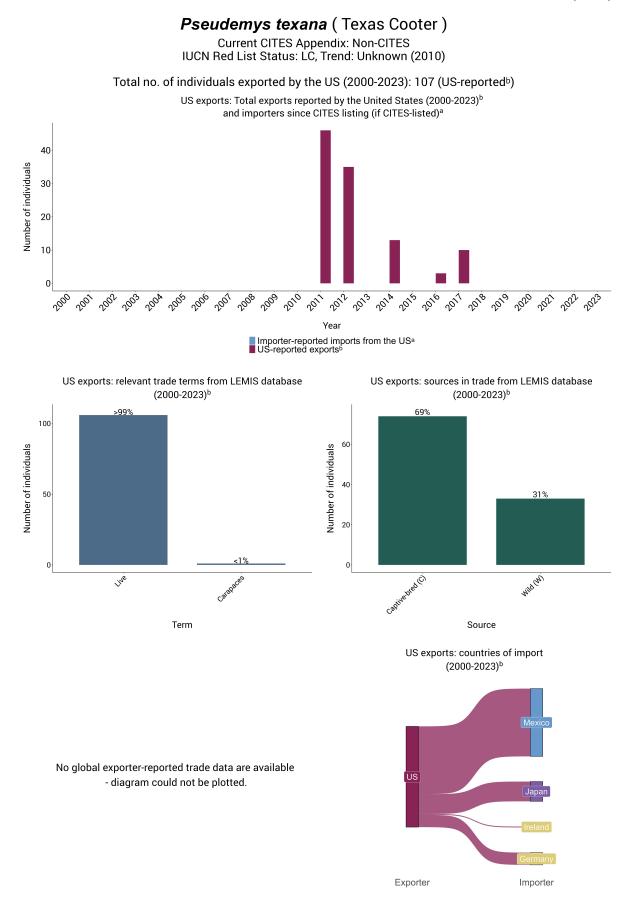


Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

Exporter



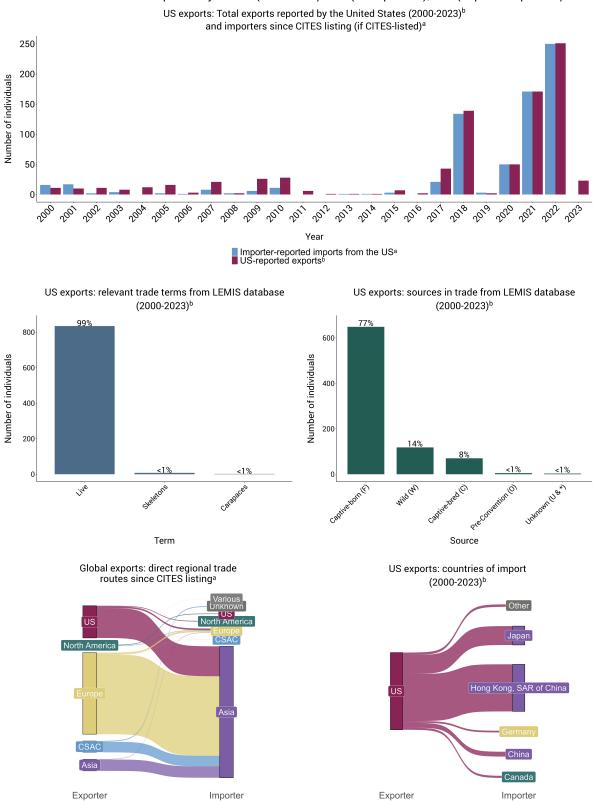
Exporter



Terrapene carolina (Eastern Box Turtle)

Current CITES Appendix: II (1995) IUCN Red List Status: VU, Trend: Decreasing (2010)

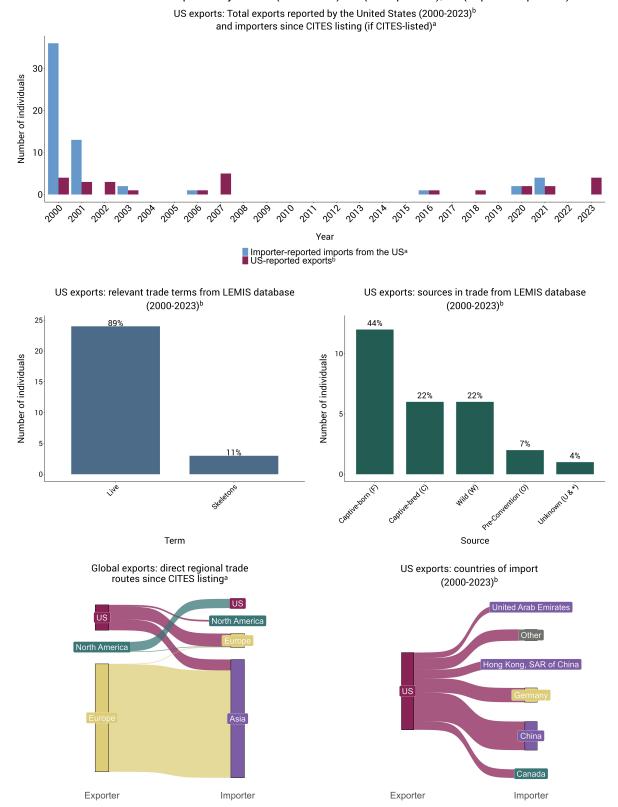
Total no. of individuals exported by the US (2000-2023): 845 (US-reported^b); 703 (Importer-reported^a)



Terrapene ornata (Ornate Box Turtle)

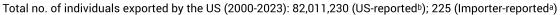
Current CITES Appendix: II (1995) IUCN Red List Status: NT, Trend: Decreasing (2010)

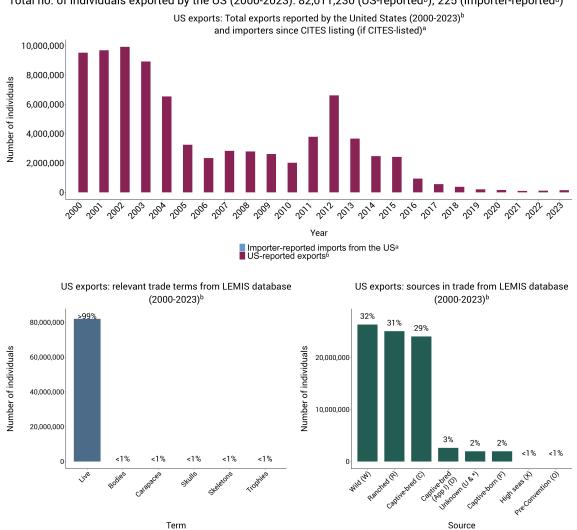
Total no. of individuals exported by the US (2000-2023): 27 (US-reported^b); 59 (Importer-reported^a)



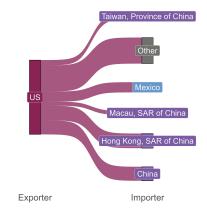


Current CITES Appendix: Non-CITES IUCN Red List Status: LC, Trend: Stable (2010)





US exports: countries of import (2000-2023)^b



Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

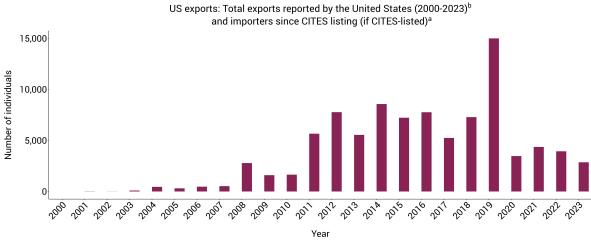
No global exporter-reported trade data are available - diagram could not be plotted.

According to the LEMIS database, notable trade in parts and derivatives in *T. scripta* included 10,293 shells, 3731 carvings and 852 skins.

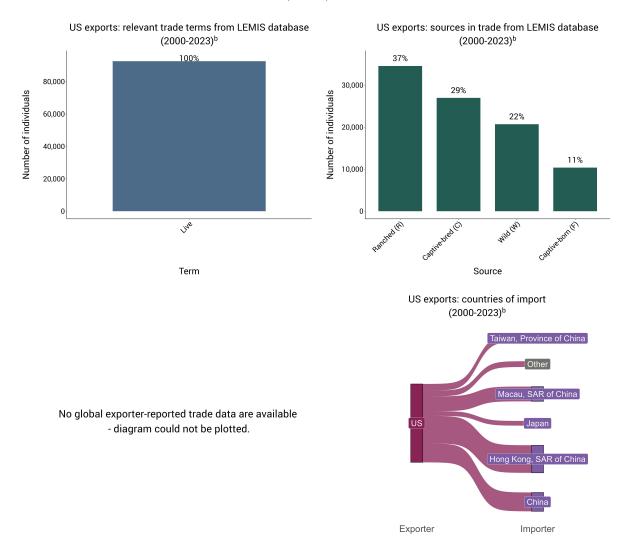
Kinosternon baurii (Striped Mud Turtle)

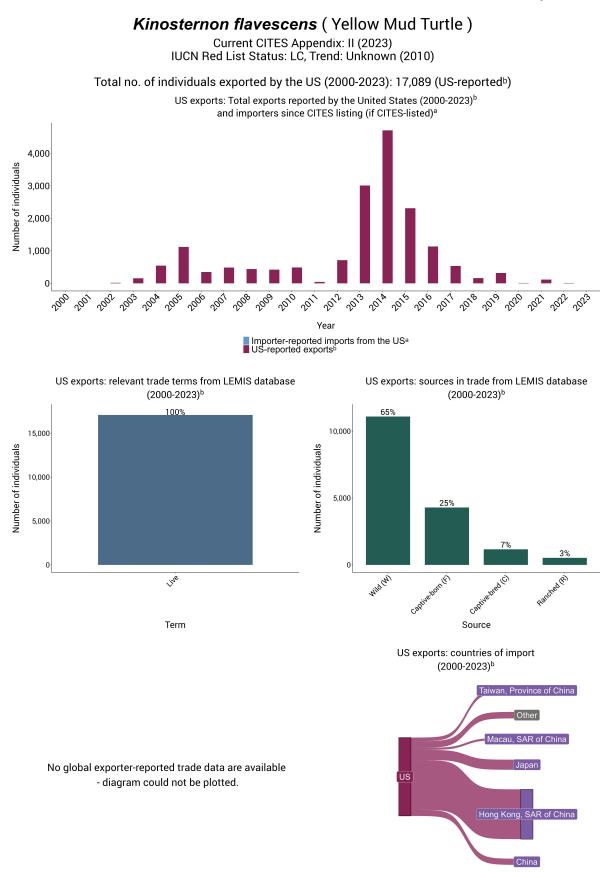
Current CITES Appendix: II (2023) IUCN Red List Status: LC, Trend: Unknown (2010)

Total no. of individuals exported by the US (2000-2023): 92,581 (US-reported^b)

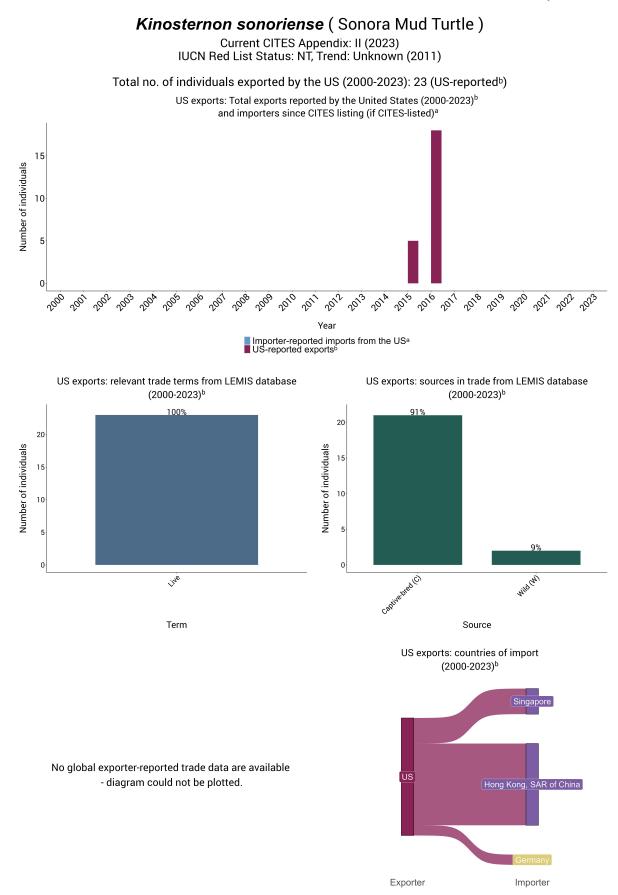


Importer-reported imports from the US^a US-reported exports^b





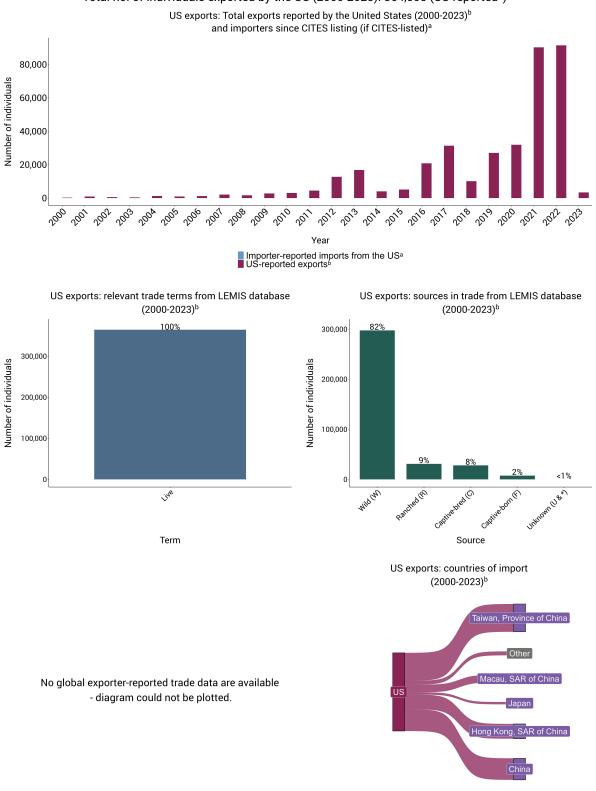
Exporter





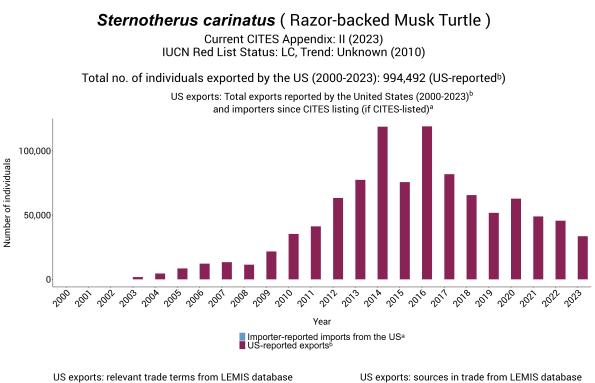
Current CITES Appendix: II (2023) IUCN Red List Status: LC, Trend: Unknown (2011)

Total no. of individuals exported by the US (2000-2023): 364,505 (US-reported^b)



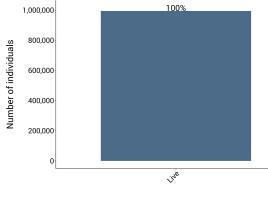
Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

Exporter



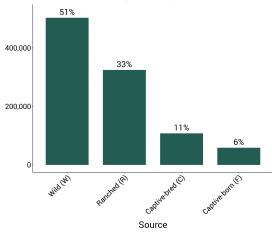
Number of individuals

US exports: relevant trade terms from LEMIS database (2000-2023)^b

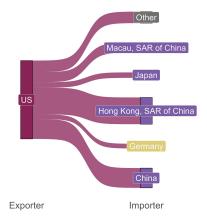


Term

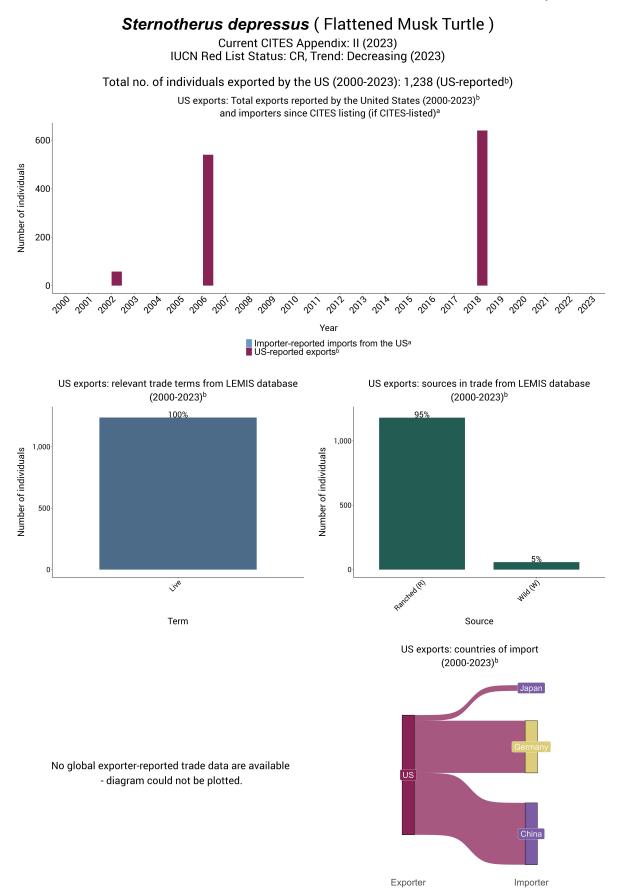
(2000-2023)^b



US exports: countries of import (2000-2023)^b



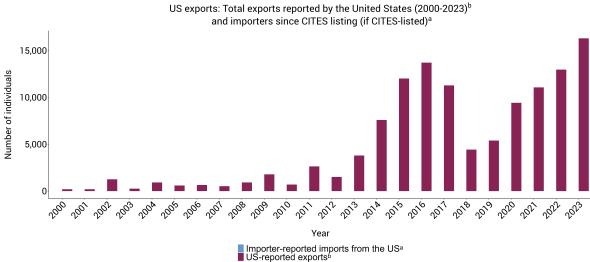
No global exporter-reported trade data are available - diagram could not be plotted.



Sternotherus minor (Loggerhead Musk Turtle)

Current CITES Appendix: II (2023) IUCN Red List Status: LC, Trend: Unknown (2010)

Total no. of individuals exported by the US (2000-2023): 120,087 (US-reported^b)

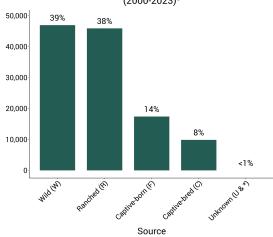


US exports: relevant trade terms from LEMIS database (2000-2023)^b 100% 100,000 Number of individuals Number of individuals 50,000

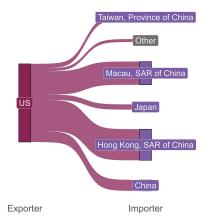
ive

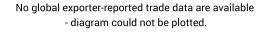
Term

US exports: sources in trade from LEMIS database (2000-2023)^b



US exports: countries of import (2000-2023)^b

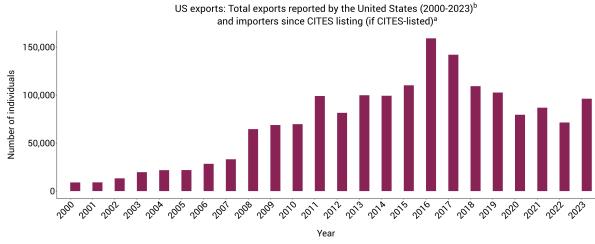




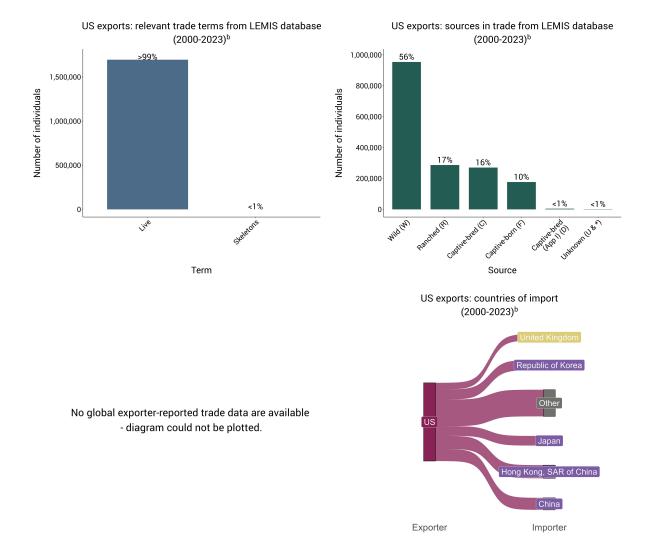
Sternotherus odoratus (Eastern Musk Turtle)

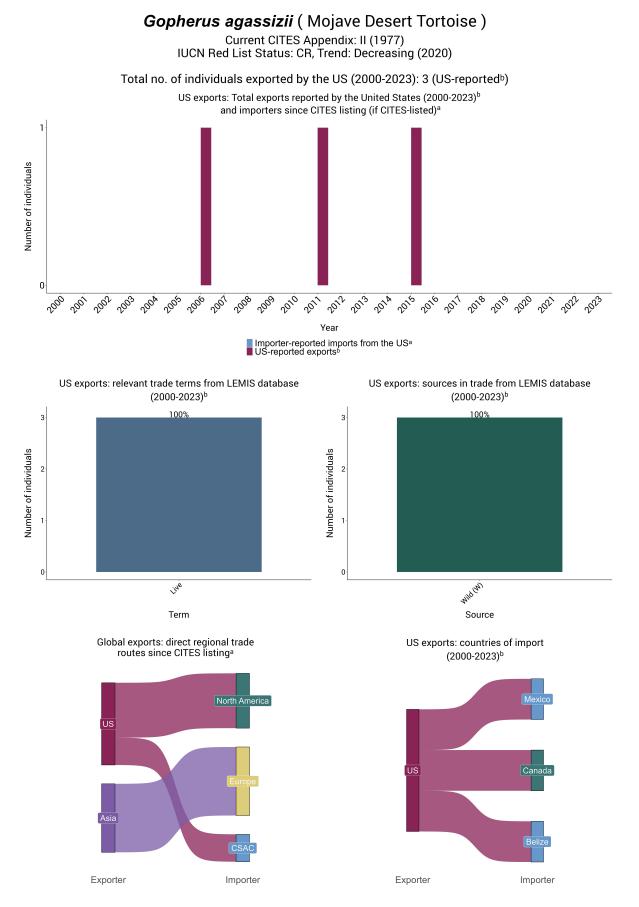
Current CITES Appendix: II (2023) IUCN Red List Status: LC, Trend: Stable (2010)

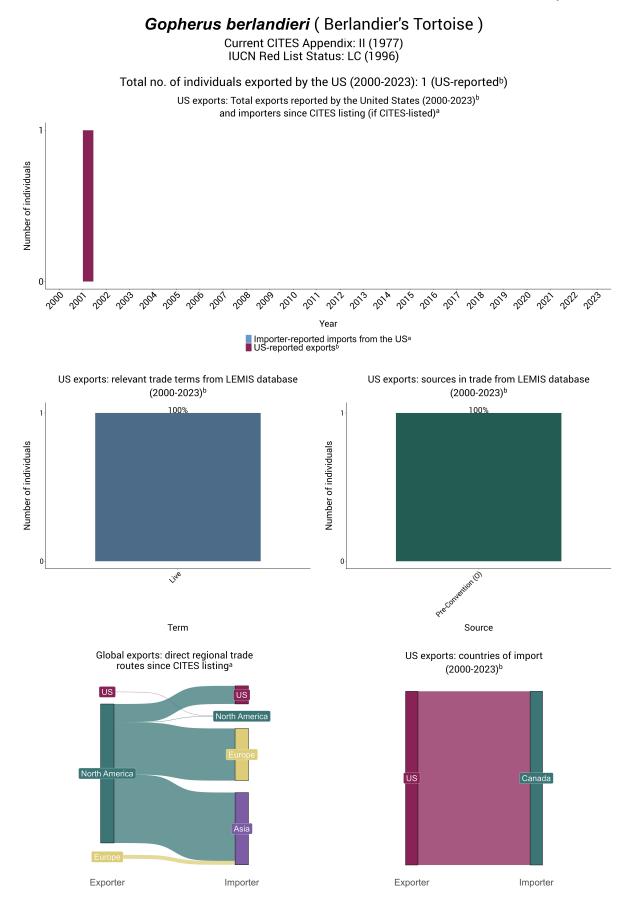
Total no. of individuals exported by the US (2000-2023): 1,695,989 (US-reported^b)

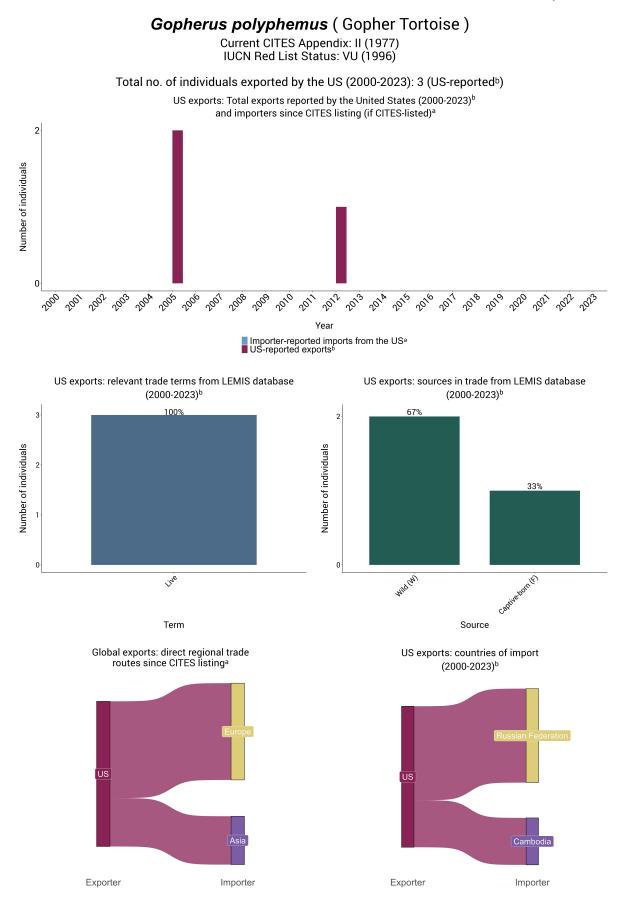


Importer-reported imports from the US^a US-reported exports^b



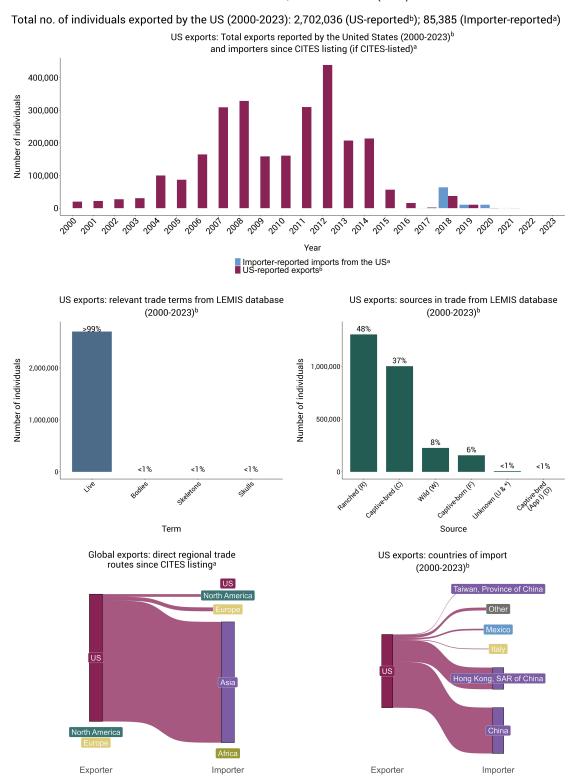






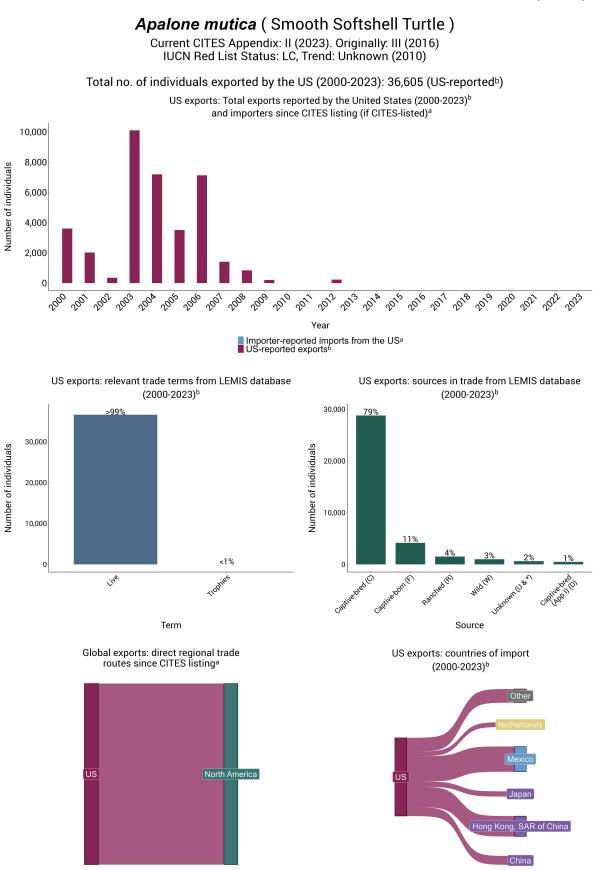


Current CITES Appendix: II (2023). Originally: III (2016) IUCN Red List Status: LC, Trend: Unknown (2010)



Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

According to the LEMIS database, notable trade in parts and derivatives in *A. ferox* included 702,028 live eggs, 36,000 eggs, and 1710 kg meat.



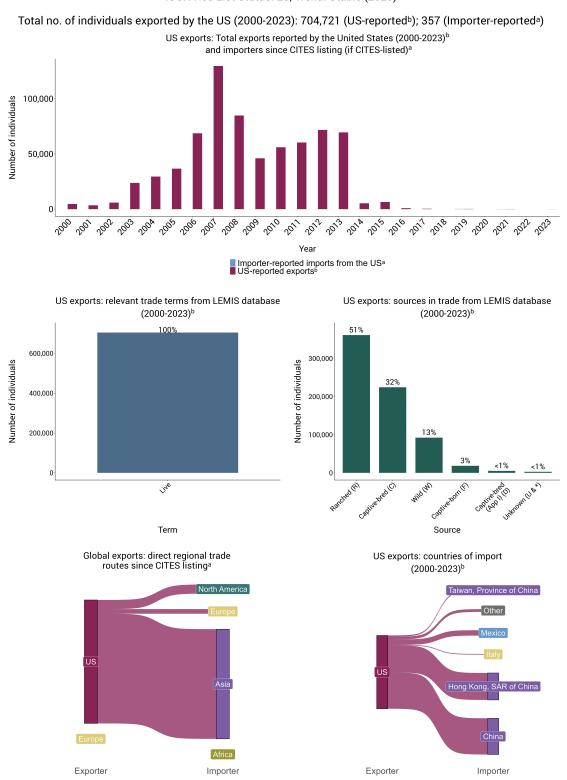
Importer

Exporter

Exporter



Current CITES Appendix: II (2023). Originally: III (2016) IUCN Red List Status: LC, Trend: Stable (2023)



Data sources: ^aCITES Trade Database (https://trade.cites.org/, downloaded 8 May 2024); ^bLEMIS Database (https://fws.gov/library/collections/office-law-enforcement-importexport-data downloaded 21 March 2024 & FOIA request received 4 March 2024

¹³ Apalone spinifera is listed in CITES Appendix II, except for the subspecies Apalone spinifera atra which is listed in Appendix I, however as the subspecies in endemic to Mexico, all United States populations of Apalone spinifera are covered by the Appendix II listing.

Annex: Additional US turtle species with no relevant data

Table 1: Species with no direct trade in individuals reported in the CITES Trade Database or LEMIS database.

Common name	Scientific name
Suwannee Alligator Snapping Turtle	Macrochelys suwanniensis
Southern Painted Turtle	Chrysemys dorsalis
Southern Pacific Pond Turtle	Emys pallida
Escambia Map Turtle	Graptemys ernsti
Sabine Map Turtle	Graptemys sabinensis
Big Bend Slider	Trachemys gaigeae
Rough-footed Mud Turtle	Kinosternon hirtipes
Florida Mud Turtle	Kinosternon steindachneri
Arizona Mud Turtle	Kinosternon stejnegeri

Table 2: Species with no direct exports in individuals from the US reported in the CITES Trade Database or LEMIS database.

Common name	Scientific name
Bog Turtle	Glyptemys muhlenbergii
Sonora Desert Tortoise	Gopherus morafkai