

# Addendum to: Overview of international trade in United States turtle species 2000-2023



This report should be considered in conjunction with:  
UNEP-WCMC. 2024. Overview of international trade in United States turtle species 2000-2023. UNEP-WCMC, Cambridge, UK.



Prepared by:  
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## Overview of international trade in United States turtle species 2000-2023 (addendum with genera)

Prepared for The Association of Fish and Wildlife Agencies, Washington DC, United States of America

Published June 2025

Suggested Citation: United States Fish and Wildlife Service. 2025. Addendum to: Overview of international trade in United States turtle species 2000-2023. USFWS, Falls Church, Virginia, USA.

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Cover Photo: *Pseudemys rubriventris* by J.D. Kleopfer (Virginia Department of Wildlife Resources). Used with permission.

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**Background:** This report was prepared to serve as an addendum to the report titled [Overview of international trade in United States turtle species 2000-2023](#) which was published in August 2024 by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC). The UNEP-WCMC report was produced and published at the request of the Association of Fish and Wildlife Agencies (AFWA) to examine international trade in all 63 turtle species native to the United States. The current report was prepared to include genera-only data (i.e., *Genus* spp.) that was not included in the original UNEP-WCMC report. Collectively, the aim of these two report's analyses is to assist government regulatory agencies and biologists in making informed decisions and recommendations relative to state, national, and international issues pertaining to U.S. turtle species management, regulation, and trade. It is important that **both reports** be used in conjunction with one another to achieve a comprehensive understanding of recent international trade in U.S. turtle species.

**Methodology:** The analyses included in this report follow a very similar approach as the initial UNEP-WCMC report. The trade summaries herein were made using data from the U.S. Fish and Wildlife Service (USFWS) Law Enforcement Management Information System (LEMIS) for the years 2000-2023. For all United States native turtle species, exports identified only to the genus level were extracted and analyzed.

To determine the number of animals in trade, a subset of trade terms that equated to whole individuals were considered. This included the following terms: bodies, bones, carapace, live, shell, skeleton, and trophies. To determine the origins of animals in trade, all available source terms were considered and included in each genus-level analysis. The following source terms were included in trade summaries: captive-bred (C; in accordance with CITES Resolution Conf. 10.16), commercially-bred (D), captive-born (F), pre-convention (P), ranched (R), wild (W), and unknown (U or \*). Countries of import were used to build proportional flow diagrams reflecting relative cumulative exports for the period of study (i.e., 2000-2023). Diagram arrows are labeled with trade volumes (i.e., the number of individual turtles exported to foreign countries), and arrow colors represent regions of trade (i.e., Asia, Australia, Europe, North America, etc.).

For genera with species included in the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), global trade data were also extracted from the [CITES Trade Database](#) for the years 2000-2023 on March 17, 2025 as a comparative tabulation report. In appropriate cases, these data are included in trade summaries. These queries were limited to live turtles only. To avoid the inclusion of incomplete data, genera were only considered if included in the CITES appendices prior to 2023.

**Summary:** Approximately 75.4 million previously unreported exported turtles were identified at the genus-only level. The vast majority of these – over 73 million turtles – belonged to the *Pseudemys* genus (cooters). The following additional genera yielded genus-only export data: *Apalone* (softshell turtles), *Chelydra* (snapping turtles), *Chrysemys* (painted turtle), *Clemmys* (spotted turtle), *Graptemys* (map turtles), *Kinosternon* (mud turtles), *Sternotherus* (musk turtles), *Terrapene* (box turtles), and *Trachemys* (sliders). The remaining U.S. native turtle genera yielded no genus-only export data. Over 99.9% of all exported turtles were described as live specimens. Other trade terms included in trade summaries across all genera were trophies (n = 143), bodies (n = 87), skeletons (n = 32), shells (n = 25), carapace (n = 16), and bones (n =1). Trade was global in nature with 77 countries identified as importers. The importers with the greatest volume were Hong Kong (37,488,199 turtles), Mexico (15,354,199 turtles), Singapore (6,653,461 turtles), Japan (2,821,081 turtles), and China (2,263,219 turtles). Taiwan, Republic of Korea, Italy, Malaysia, and Spain all imported more than 500,000 turtles during the period of study.

**Correction Note:** In March of 2025, USFWS identified an error in LEMIS for an export of *Sternotherus* turtles that took place in 2018. A shipment of 640 live turtles that had originally been identified as *Sternotherus depressus* – recently assessed as critically endangered with a decreasing population by IUCN – was correctly identified as *Sternotherus minor peltifer* after a reexamination of the accompanying documents. This substantially changes the recent trade history of *S. depressus*, with LEMIS showing only three other shipments since 2000 (two in 2006 and one in 2002). Unfortunately, there are no accompanying documents available for these shipments to confirm the species identification.

**Trade Summaries:**

*Apalone* spp. (Softshell Turtles) ..... 3

*Chelydra* spp. (Snapping Turtles) ..... 4

*Chrysemys* spp. (Painted Turtle) ..... 5

*Clemmys* spp. (Spotted Turtle)..... 6

*Graptemys* spp. (Map Turtles) ..... 7

*Kinosternon* spp. (Mud Turtles) ..... 8

*Pseudemys* spp. (Cooters)..... 9

*Sternotherus* spp. (Musk Turtles)..... 10

*Terrapene* spp. (Box Turtles) ..... 11

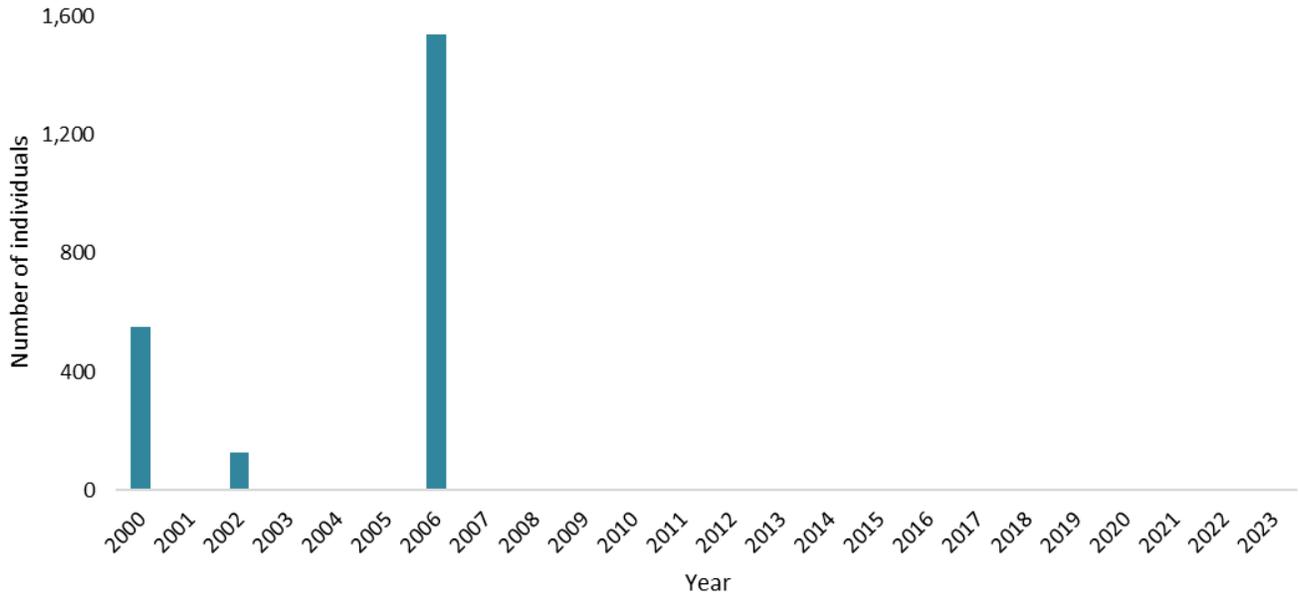
*Trachemys* spp. (Sliders) ..... 12

## **Apalone spp. (Softshell Turtles)**

Current CITES Appendix: II (2023 – entire genus), III (2016 – entire genus)

Genus includes: *Apalone ferox* (Florida softshell), *Apalone mutica* (smooth softshell turtle), *Apalone spinifera* (spiny softshell turtle)

Total number of *spp.* individuals exported by the U.S. (2000-2023): 2,219 (US-reported LEMIS database)



**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Ranched (R)	1,540	69%
Captive-born (F)	300	14%
Unknown / *	250	11%
Commercially-bred (D)	125	6%
Captive-bred (C)	3	<1%
Wild (W)	1	<1%

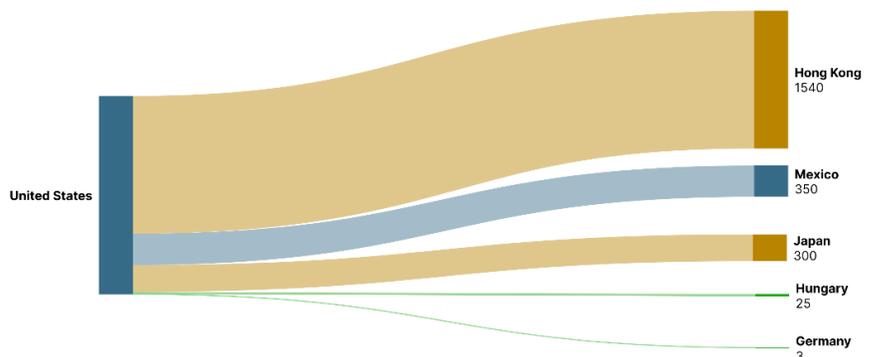
**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	2,219	100

**U.S. export countries of import and volumes (2000-2023)**

### **CITES Trade Database**

A query of the CITES Trade Database for *Apalone spp.* for the years 2000-2023 did not yield any results.

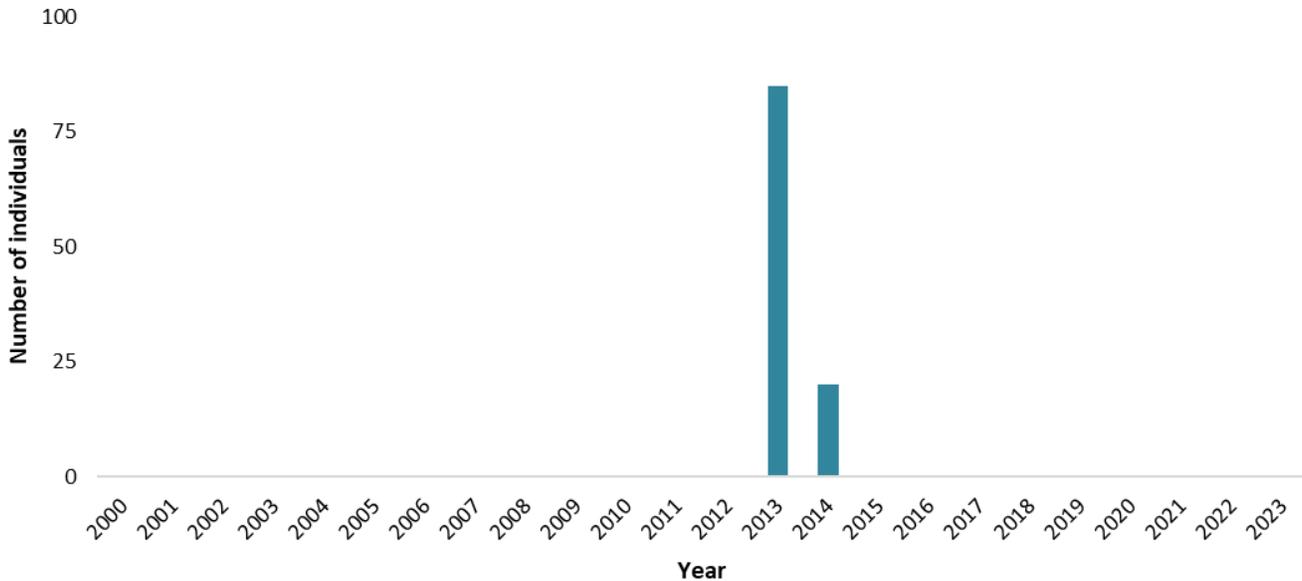


## Chelydra spp. (Snapping Turtles)

Current CITES Appendix: II (2023 - *C. serpentina*), III (2016 - *C. serpentina*)

Genus includes: *Chelydra serpentina* (common snapping turtle); non-native species include *Chelydra rossignonii* (Central American snapping turtle) that occurs in Mexico and Central America, and *Chelydra acutirostris* (South American snapping turtle) that occurs in Central America and South America. Only *C. serpentina* is included in the CITES appendices.

Total number of *spp.* individuals exported by the U.S. (2000-2023): 105 (US-reported LEMIS database)



**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Wild (W)	60	57%
Ranched (R)	45	43%

**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	85	81%
Shell	20	19%

### CITES Trade Database

A query of the CITES Trade Database for *Chelydra* spp. for the years 2000-2023 did not yield any results.

### U.S. export countries of import and volumes (2000-2023)

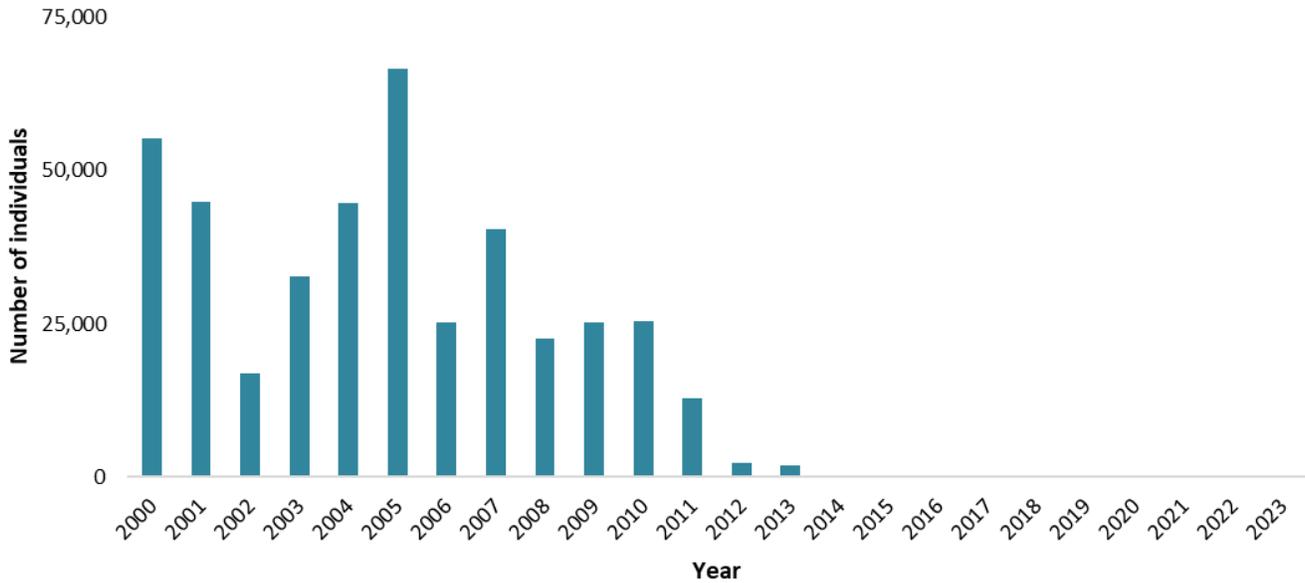


## Chrysemys spp. (Painted Turtle)

Current CITES Appendix: None

Genus includes: *Chrysemys picta* (painted turtle)

Total number of *spp.* individuals exported by the U.S. (2000-2023): 416,733 (US-reported LEMIS database)



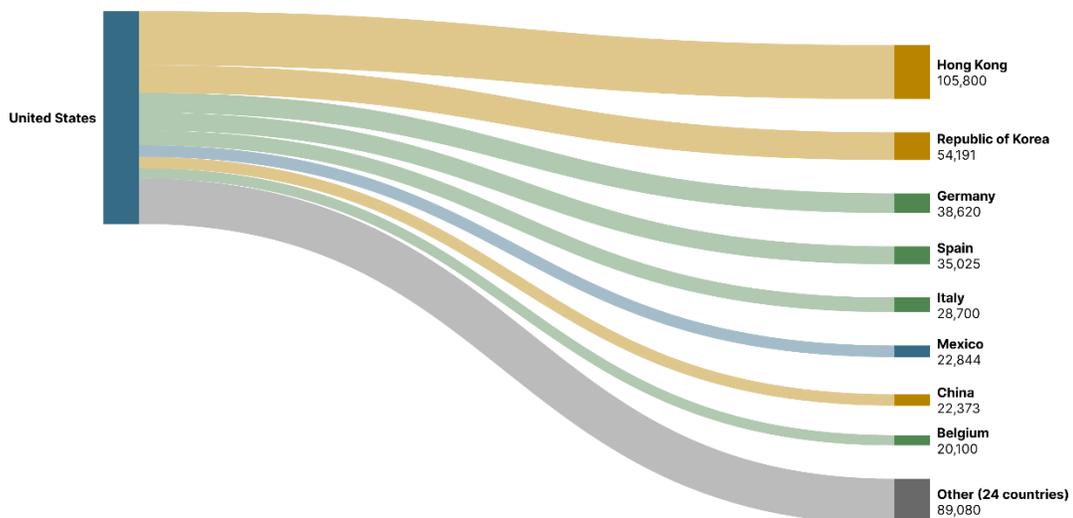
**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Captive-bred (C)	151,248	36%
Wild (W)	133,442	32%
Commercially-bred (D)	62,058	15%
Unknown / *	54,900	13%
Captive-born (F)	11,735	3%
Ranched (R)	3,350	1%

**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	416,721	>99%
Carapace	8	<1%
Shell	4	<1%

**U.S. export countries of import and volumes (2000-2023)**

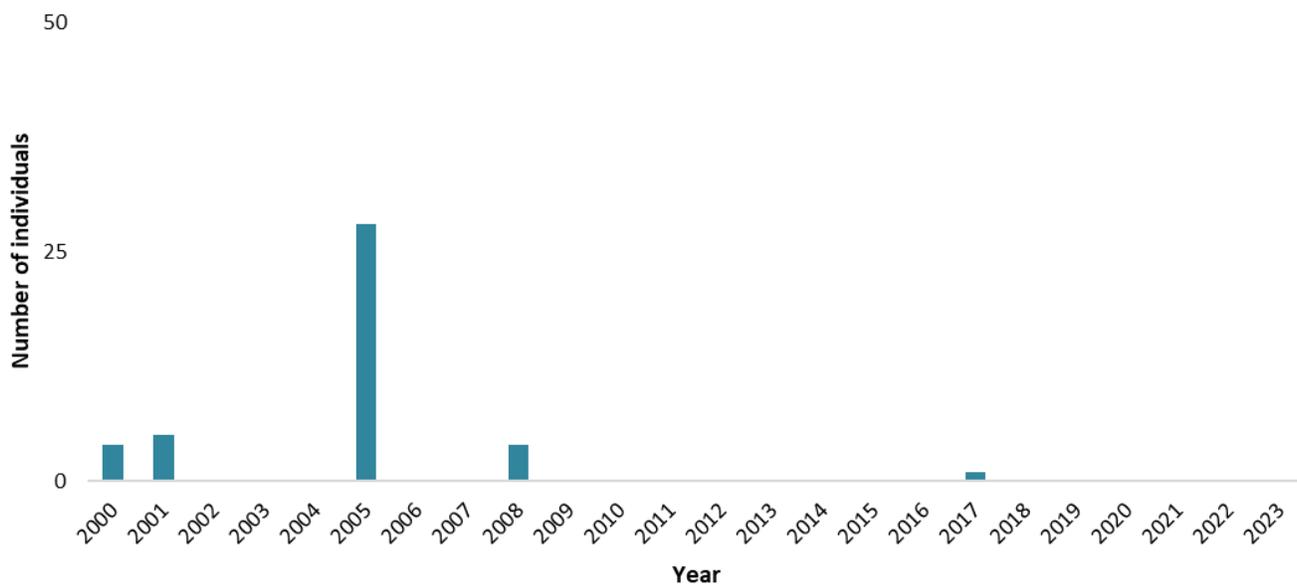


## Clemmys spp. (Spotted Turtle)

Current CITES Appendix: II (2013)

Genus includes: *Clemmys guttata* (spotted turtle); may have previously included *Glyptemys insculpta* (wood turtle; formerly *Clemmys insculpta*) and *Glyptemys muhlenbergii* (bog turtle; formerly *Clemmys muhlenbergii*)

Total number of *spp.* individuals exported by the U.S. (2000-2023): 42 (US-reported LEMIS database)



**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Captive-bred (C)	35	83%
Wild (W)	3	7%
Captive-born (F)	3	7%
Pre-convention (O)	1	3%

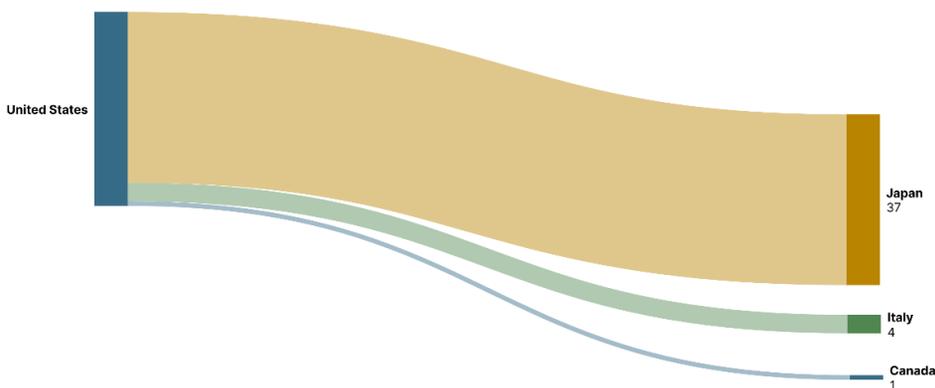
**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	41	98%
Shell	1	2%

### CITES Trade Database

A query of the CITES Trade Database for *Clemmys* spp. for the years 2000-2023 yielded 5 live turtles shipped from Switzerland to Japan in 2008, as reported by exporters. The shipment was for commercial purposes and was shipped with a source code “C” (bred in captivity).

### U.S. export countries of import and volumes (2000-2023)

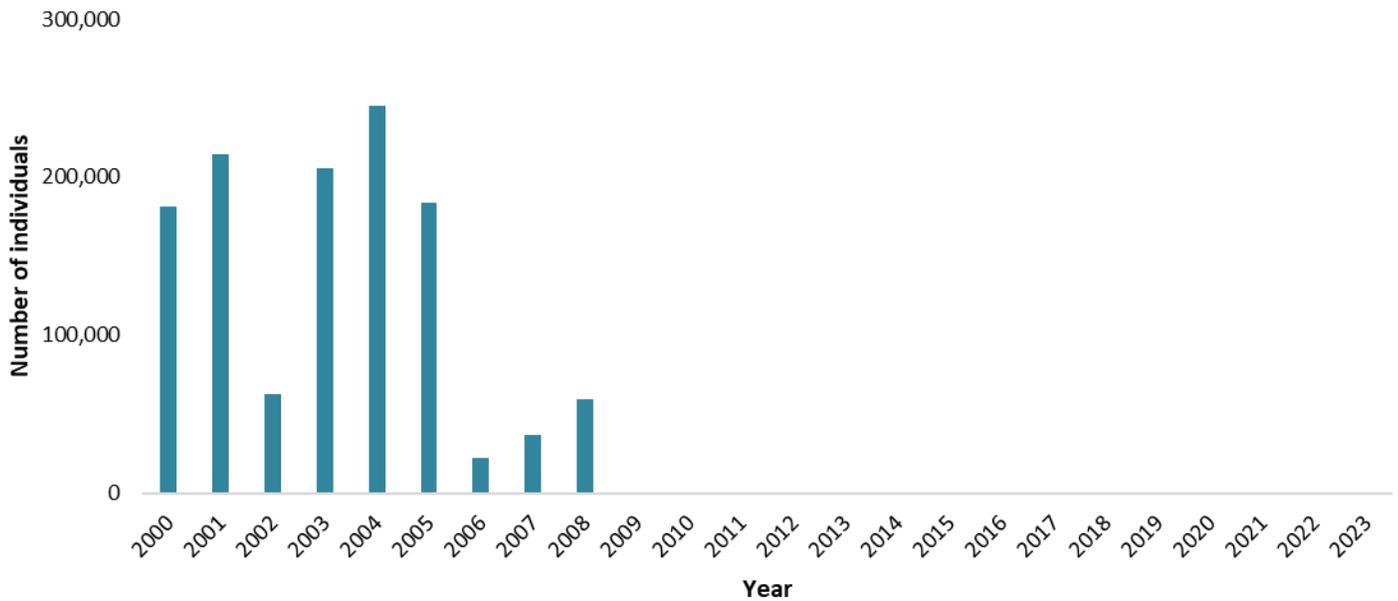


## Graptemys spp. (Map Turtles)

Current CITES Appendix: II (2023 - broad-headed map turtles), III (2006 – entire genus)

Genus includes: **Appendix II:** *Graptemys barbouri* (Barbour’s map turtle), *Graptemys ernsti* (Escambia map turtle), *Graptemys gibbonsi* (Pascagoula map turtle), *Graptemys pearlensis* (Pearl River map turtle), *Graptemys pulchra* (Alabama map turtle); **Appendix III:** *Graptemys caglei* (Cagle’s map turtle), *Graptemys flavimaculata* (yellow-blotched map turtle), *Graptemys geographica* (northern map turtle), *Graptemys nigrinoda* (black-knobbed map turtle), *Graptemys oculifera* (ringed map turtle), *Graptemys ouachitensis* (Ouachita map turtle), *Graptemys pseudogeographica* (false map turtle), *Graptemys versa* (Texas map turtle)

Total number of spp. individuals exported by the U.S. (2000-2023): 1,209,957 (US-reported LEMIS database)



**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Captive-bred (C)	520,662	43%
Commercially-bred (D)	388,008	32%
Unknown / *	202,225	17%
Wild (W)	78,664	7%
Captive-born (F)	13,166	1%
Ranched (R)	7,232	1%

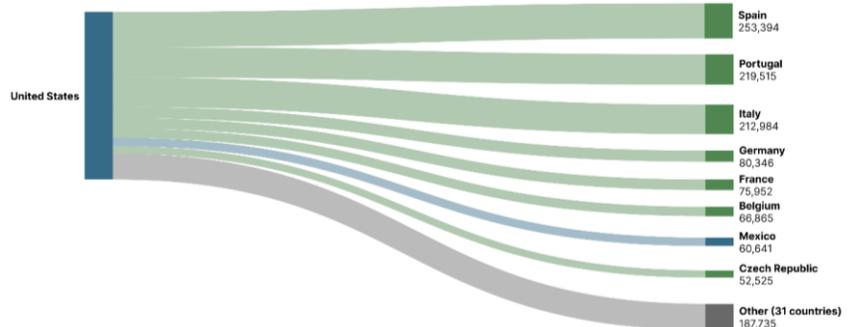
**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	1,209,957	100

### CITES Trade Database

A query of the CITES Trade Database for *Graptemys* spp. for the years 2000-2023 yielded 76,880 live turtles shipped predominantly from the U.S. and China to Italy between the years 2009-2018, as reported by importers.

**U.S. export countries of import and volumes (2000-2023)**

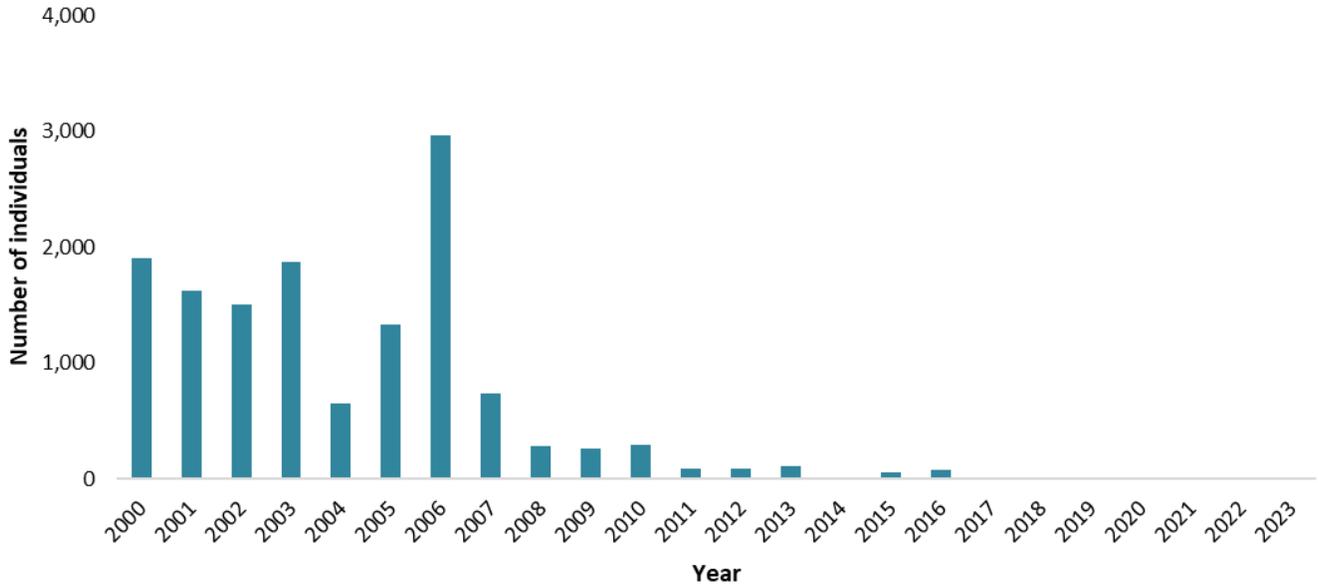


## ***Kinosternon* spp. (Mud Turtles)**

Current CITES Appendix: II (2023 – entire genus)

Genus includes: *Kinosternon baurii* (striped mud turtle), *Kinosternon flavescens* (yellow mud turtle), *Kinosternon hirtipes* (rough-footed mud turtle), *Kinosternon sonoriense* (Sonoran mud turtle), *Kinosternon stejnegeri* (Arizona mud turtle), *Kinosternon subrubrum* (eastern mud turtle); 15 additional non-native species that occur in Mexico, Central America, and South America

Total number of *spp.* individuals exported by the U.S. (2000-2023): 13,895 (US-reported LEMIS database)



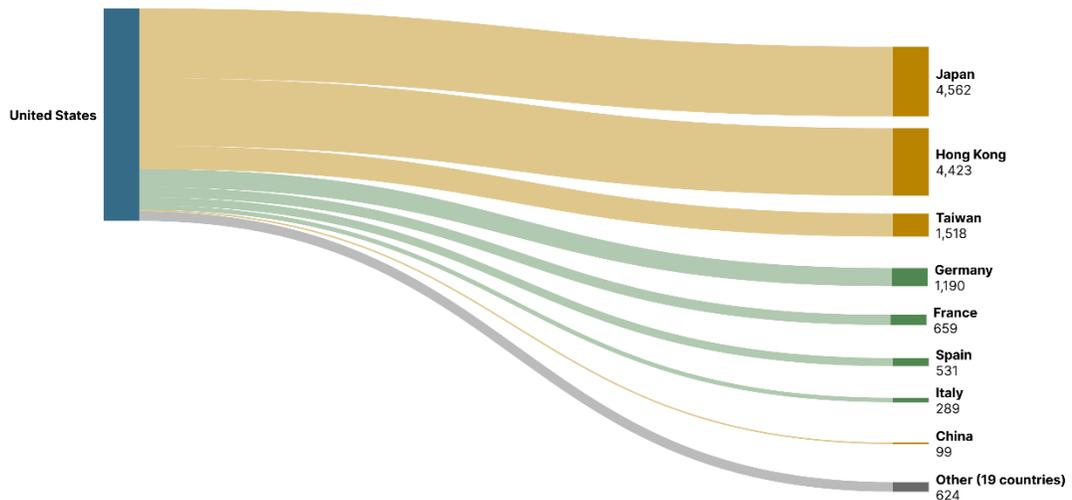
**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Wild (W)	9,140	66%
Captive-bred (C)	3,107	22%
Captive-born (F)	735	5%
Ranched (R)	668	5%
Unknown / *	245	2%

**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	13,752	99%
Trophies	143	1%

**U.S. export countries of import and volumes (2000-2023)**

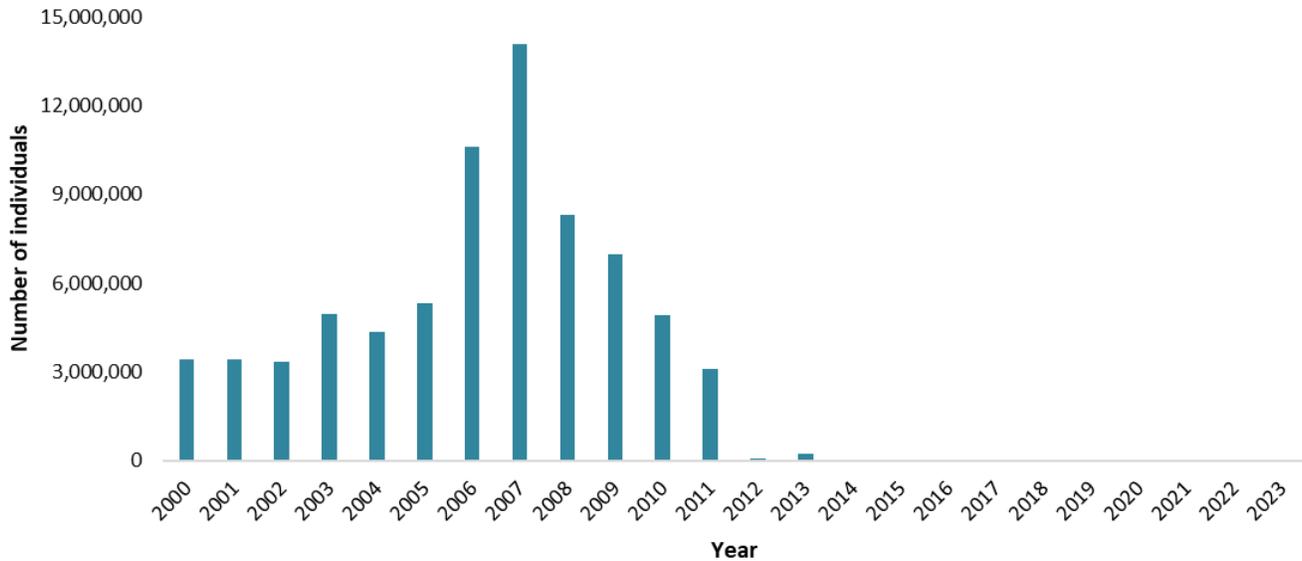


## ***Pseudemys* spp. (Cooters)**

Current CITES Appendix: None

Genus includes: *Pseudemys alabamensis* (Alabama redbelly turtle), *Pseudemys concinna* (eastern river cooter), *Pseudemys floridana* (Florida cooter), *Pseudemys gorzugi* (Rio Grand cooter), *Pseudemys nelsoni* (Florida redbelly cooter), *Pseudemys peninsularis* (peninsula cooter), *Pseudemys rubriventris* (northern red-bellied cooter), *Pseudemys texana* (Texas river cooter)

Total number of *spp.* individuals exported by the U.S. (2000-2023): 73,026,199 (US-reported LEMIS database)



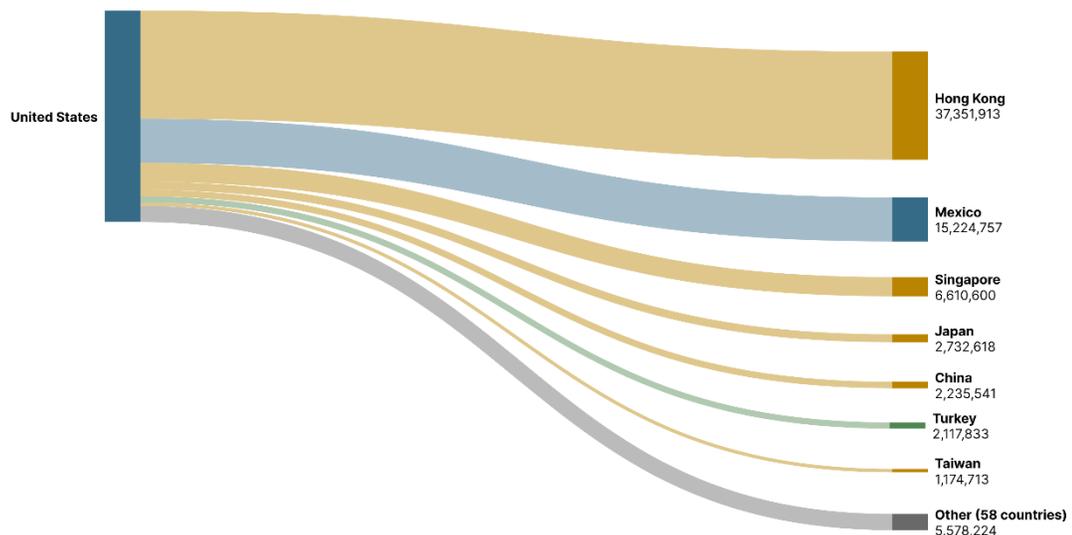
### U.S. exports sources from LEMIS database (2000-2023)

Source	Number of individuals	Percent of total
Captive-bred (C)	50,277,071	69%
Wild (W)	10,209,048	14%
Commercially-bred (D)	5,648,727	8%
Unknown / *	4,458,592	6%
Ranched (R)	1,743,722	2%
Captive-born (F)	689,039	1%

### U.S. exports relevant trade terms from LEMIS database (2000-2023)

Type	Number of individuals	Percent of total
Live	73,026,152	>99%
Skeleton	32	<1%
Bodies	14	<1%
Bones	1	<1%

### U.S. export countries of import and volumes (2000-2023)

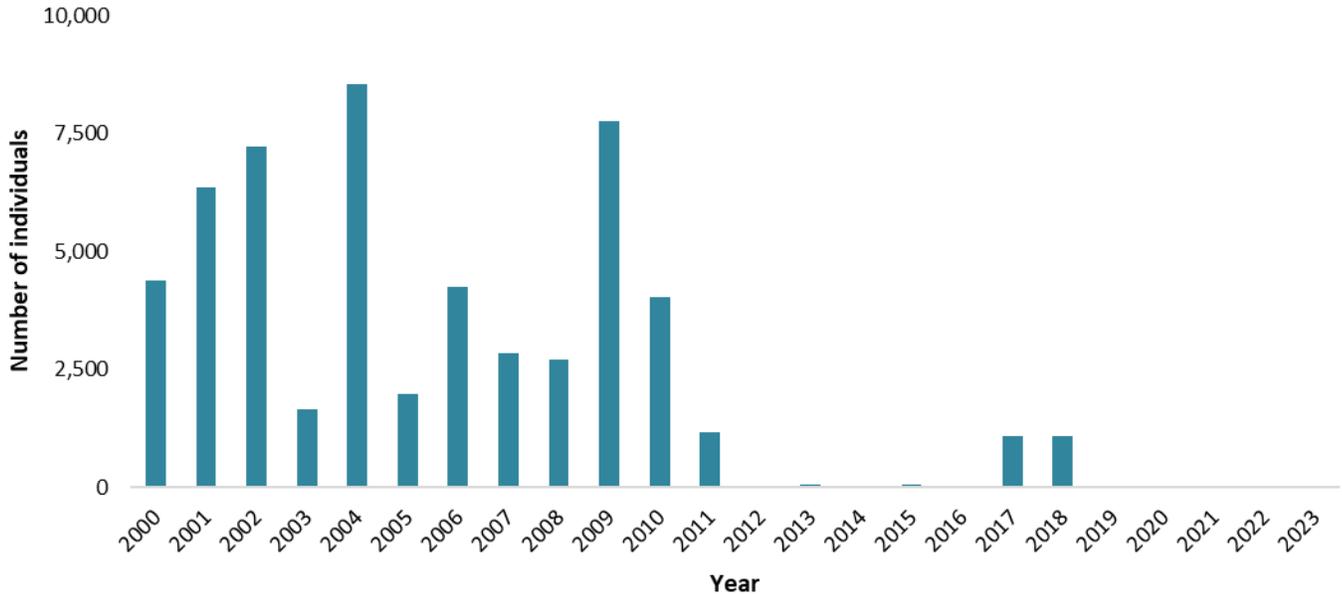


## Sternotherus spp. (Musk Turtles)

Current CITES Appendix: II (2023 – entire genus)

Genus includes: *Sternotherus carinatus* (razorback musk turtle), *Sternotherus depressus* (flattened musk turtle),  
*Sternotherus minor* (loggerhead musk turtle), *Sternotherus odoratus* (common musk turtle)

Total number of spp. individuals exported by the U.S. (2000-2023): 55,312 (US-reported LEMIS database)



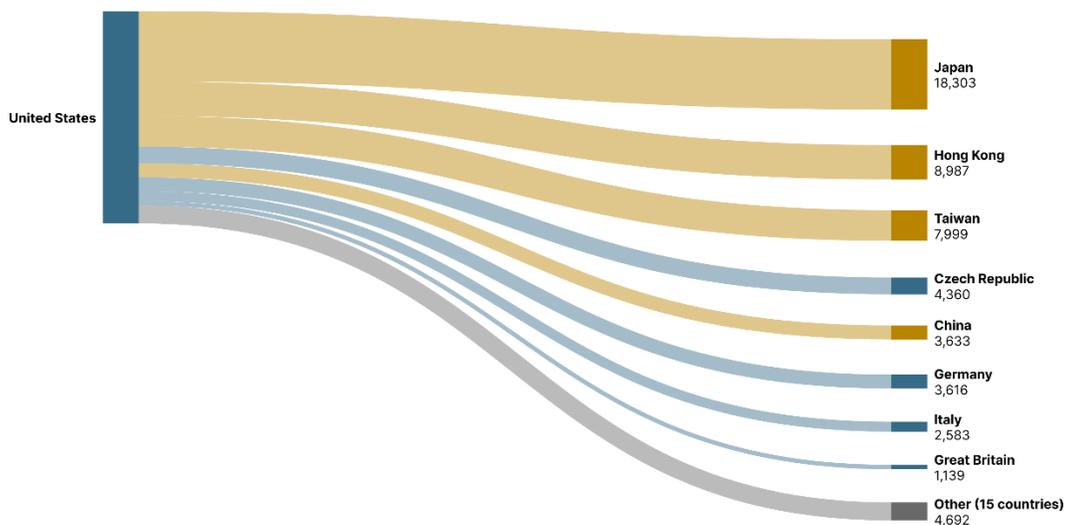
**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Captive-bred (C)	28,634	52%
Wild (W)	18,575	33%
Ranched (R)	5,894	11%
Captive-born (F)	1,513	3%
Unknown / *	656	1%
Commercially-bred (D)	40	<1%

**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	55,312	100

**U.S. export countries of import and volumes (2000-2023)**

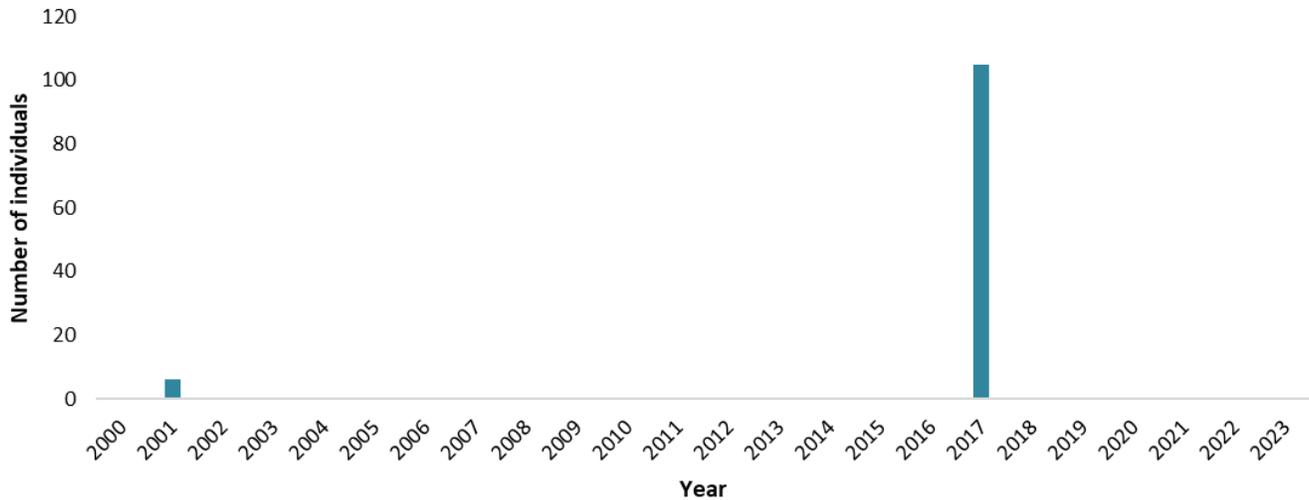


## ***Terrapene* spp. (Box Turtles)**

Current CITES Appendix: II (1995 – entire genus)

Genus includes: *Terrapene carolina* (eastern box turtle – U.S.), *Terrapene coahuila* (Coahuilan box turtle - Mexico), *Terrapene nelsoni* (spotted box turtle – Mexico), *Terrapene ornata* (ornate box turtle – U.S. and Mexico)

Total number of *spp.* individuals exported by the U.S. (2000-2023): 111 (US-reported LEMIS database)



**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Wild (W)	105	95%
Captive-bred (C)	6	5%

**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	110	>99%
Bodies	1	<1%

### **CITES Trade Database**

A query of the CITES Trade Database for *Terrapene* spp. for the years 2000-2023 yielded 24 live turtles, shipped mostly to the U.S. from Canada, Germany, Korea, Mexico, and Switzerland, as reported by importers. Six of these transactions listed “I” (confiscated/seized) as the source code, two listed “O” (pre-convention), two listed “W” (wild), and two listed “C” (bred in captivity).

### **U.S. export countries of import and volumes (2000-2023)**

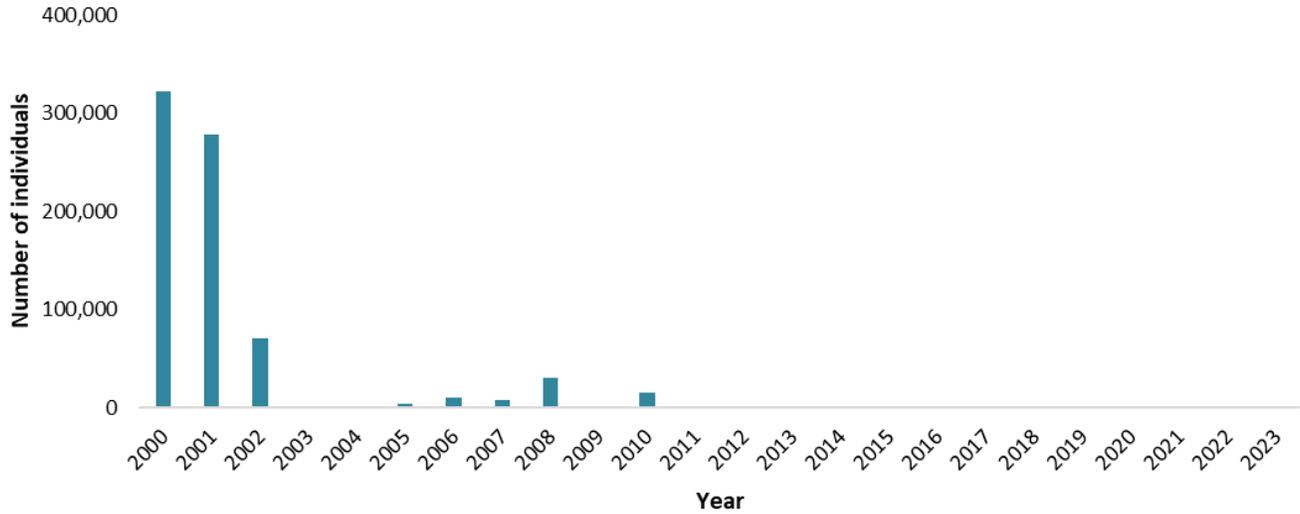


## Trachemys spp. (Sliders)

Current CITES Appendix: None

Genus includes: *Trachemys gaigeae* (Big Bend slider), *Trachemys scripta* (red-eared slider); 15 additional non-native species that occur in Mexico, the Caribbean, Central American, and South America

Total number of *spp.* individuals exported by the U.S. (2000-2023): 748,194 (US-reported LEMIS database)



**U.S. exports sources from LEMIS database (2000-2023)**

Source	Number of individuals	Percent of total
Unknown / *	355,774	48%
Captive-bred (C)	220,155	29%
Commercially-bred (D)	93,600	13%
Ranched (R)	31,567	4%
Wild (W)	25,537	3%
Captive-born (F)	21,561	3%

**U.S. exports relevant trade terms from LEMIS database (2000-2023)**

Type	Number of individuals	Percent of total
Live	748,114	>99%
Bodies	72	<1%
Carapaces	8	<1%

**U.S. export countries of import and volumes (2000-2023)**

