

More than 1.1 million sea turtles poached over last three decades: study

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The East Pacific hawksbill turtle is among the most endangered sea turtle populations and one of the oldest creatures on Earth. In a new ASU study spanning a 30-year period, 95% of poached sea turtles came from two species — green and hawksbill turtles — both of which are listed under the U.S. Endangered Species Act. Also, Southeast Asia and Madagascar emerged as major hotspots for illegal sea turtle take and trade, particularly for critically endangered hawksbills, which are prized in the illicit wildlife trade for their beautiful shells. Credit: Lindsay Lauckner Gundlock

One of the most serious threats to wildlife biodiversity, in addition to the climate crisis, is the illegal killing and trafficking of animals and plants. Despite many laws against the black-market wildlife trade, it is considered to be one of the most lucrative illicit industries in the world.

Animals, especially endangered and [threatened species](#), are often exploited and sold for their pelts or used as medicine, aphrodisiacs, curios, food and spiritual artifacts.

In a new study published in *Global Change Biology*, Arizona State University researchers estimate that more than 1.1 million [sea turtles](#) have been illegally killed and, in some cases, trafficked between 1990 and 2020. Even with existing laws prohibiting their capture and use, as many as 44,000 sea turtles were exploited each year over the past decade in 65 countries or territories and in 44 of the world's 58 major sea turtle populations.

Despite the seemingly large number of poached turtles, the study shows that the reported illegal exploitation of sea turtles declined by approximately 28% over the last decade —something that surprised the researchers. They initially expected to see an overall increase in reported poaching.

"The decline over the past decade could be due to increased protective legislation and enhanced [conservation efforts](#), coupled with an increase in awareness of the problem or changing local norms and traditions," says Kayla Burgher, co-first author of the study and a doctoral student in ASU's environmental life sciences program in the School of Life Sciences.



ASU assistant research professor and marine biologist Jesse Senko holds a recently captured green turtle at one of his study sites in Baja California Sur, Mexico. The turtle was released unharmed. Credit: Cindy Vargas

In addition to the slight decline, the researchers found that most of the reported illegal exploitation over the past decade occurred in large, stable and genetically diverse sea turtle populations.

Jesse Senko, co-first author of the study and an assistant research professor with the ASU School for the Future of Innovation in Society says this discovery may be a silver lining to the high number of turtles illegally exploited. "What this means is that most of these sea turtles came from healthy, low-risk populations, which suggests that, with a few exceptions, current levels of illegal exploitation are likely not having a

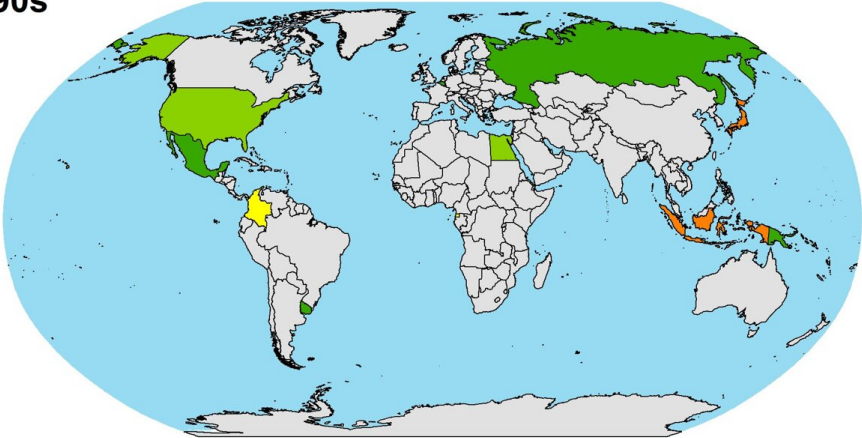
major detrimental impact on most major sea turtle populations throughout the world's oceans."

Senko adds, however, the results should be cautiously considered. "Assessing any illegal activity is difficult, and the take and trade of sea turtles is no exception, especially when it becomes organized or connected to crime syndicates. Our assessment also did not include eggs or turtle products, such as bracelets or earrings made from sea turtle shells that could not be easily attributed to individual turtles," says Senko.

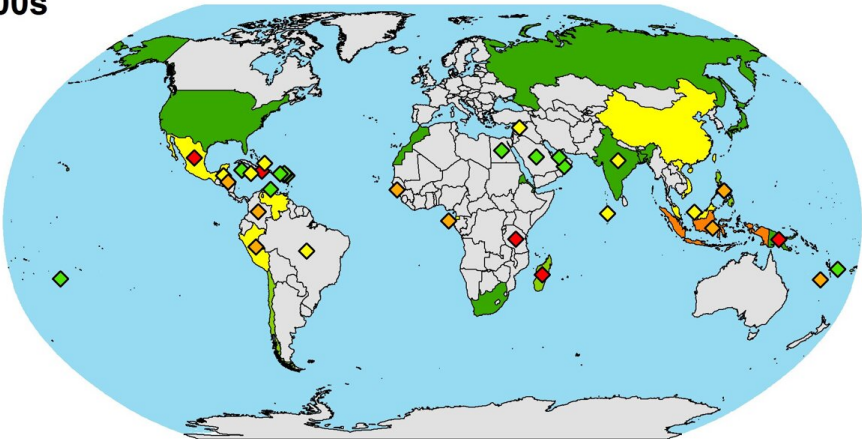
In the study, the researchers reviewed data from peer-reviewed journal articles, archived [media reports](#), NGO reports, and online questionnaires to determine a comprehensive look at existing information on exploited sea turtles. The study revealed additional patterns and trends that may assist in determining conservation management priorities. For example, Vietnam was the most common country of origin for illegal sea turtle trafficking, while China and Japan served as destinations for nearly all trafficked sea turtle products. Similarly, Vietnam to China was the most common trade route across all three decades.

Across the 30-year study period, 95% of poached sea turtles came from two species—green and [hawksbill turtles](#)—both of which are listed under the U.S. Endangered Species Act. Also, Southeast Asia and Madagascar emerged as major hotspots for illegal sea turtle take and trade, particularly for critically endangered hawksbills, which are prized in the illicit wildlife trade for their beautiful shells.

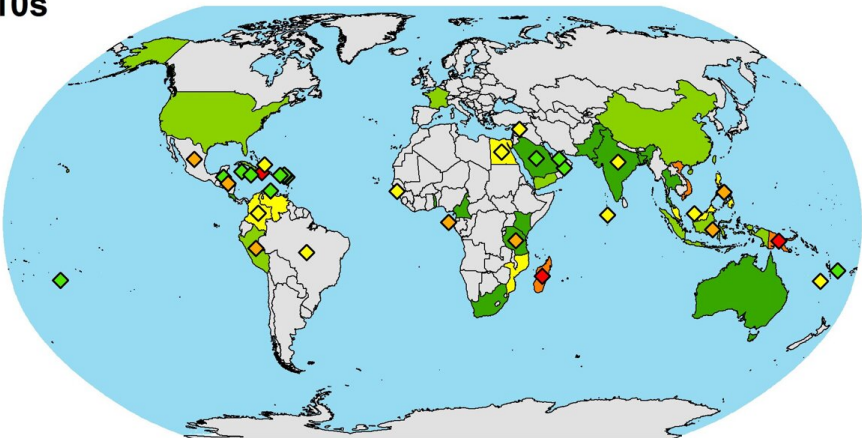
1990s



2000s



2010s



Documented Data

- 0 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 or greater
- No Data

Questionnaire Data

- 500 - 1,000
- 1,001 - 10,000
- 10,001 - 100,000
- 100,001 or greater

Global maps from the ASU study in *Global Change Biology* show the magnitude of illegal exploitation by country during the 1990s, 2000s, and 2010s. Data from documented literature are shown by colored countries, while data from the in-country expert online questionnaire are shown with the diamond symbols. Credit: Arizona State University

"Our assessment is an important foundation for future research and [outreach efforts](#) regarding illegal sea turtle exploitation. We believe this study can help conservation practitioners and legislators prioritize conservation efforts and allocate their resources to best help protect sea turtle populations from harmful levels of exploitation worldwide," says Burgher.

The research team says much more needs to be done to sustain global biodiversity.

"Increased support for governments lacking the resources to protect sea turtles is needed, along with support for communities to sustain human well-being in the face of restrictions or bans on sea turtle exploitation. We must develop conservation strategies that benefit both people and turtles," says Senko.

More information: Jesse F. Senko et al, Global patterns of illegal marine turtle exploitation, *Global Change Biology* (2022). [DOI: 10.1111/gcb.16378](https://doi.org/10.1111/gcb.16378)

Provided by Arizona State University

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