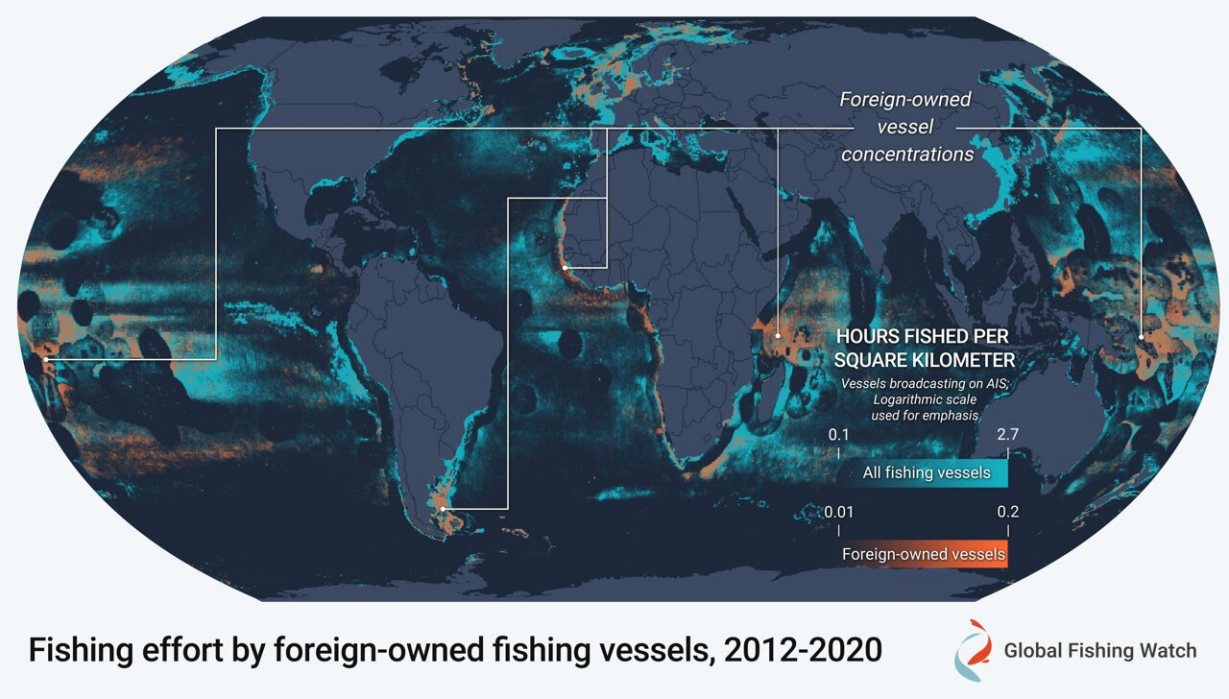
Tracking the elusive and shifting identities of the global fishing fleet

January 18 2023



Data analysis in this study's assessment of fishing compliance revealed hotspots of fishing activity by foreign-owned vessels in the southwest Pacific, the west Indian oceans, and certain national waters. Credit: Global Fishing Watch

A new study published today in *Science Advances* combines a decade's worth of satellite vessel tracking data with identification information from more than 40 public registries to determine where and when vessels responsible for most of the world's industrial fishing change their

country of registration, a practice known as "reflagging", and identify hotspots of potential unauthorized fishing and activity of foreign-owned vessels.

Using big data processing and a compilation of global datasets, researchers from Global Fishing Watch, the Marine Geospatial Ecology Lab from Duke University, and Stockholm Resilience Centre were able to track and analyze 35,000 commercial fishing and support vessels to reveal their changing identities and enable the reconstruction of vessel histories to demonstrate reflagging patterns.

The study, "Tracking Elusive and Shifting Identities of the Global Fishing Fleet'" found that close to 20 percent of high seas fishing is carried out by vessels that are either internationally unregulated or not publicly authorized, with large concentrations of these ships operating in the Southwest Atlantic Ocean and the western Indian Ocean.

The data used in the study is intended to complement the Food and Agriculture Organization of the United Nations' Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels, a flagship transparency initiative which serves as the official database of information on vessels used for fishing and fishing-related activities.

Together with the International Maritime Organization's ship identification number scheme, these resources can provide fisheries authorities with the information needed to adequately monitor vessel activity, implement flag State responsibilities, and inform responsible fisheries management.

"Until now, we've had limited information linking together the identity and activity of specific vessels," said Jaeyoon Park, senior data scientist at Global Fishing Watch and lead author of the study. "When a vessel's identity is changed, it makes tracking them all the more difficult,

allowing bad actors the opportunity to take advantage of information gaps and avoid oversight. We need to close that loophole."

Of the 116 States involved in reflagging, the study found that one-fifth of them were responsible for about 80 percent of this practice over the past decade, with most reflagging occurring in Asia, Latin America, Africa, and the Pacific Islands. The study found that reflagging takes place in just a few ports—Las Palmas de Gran Canaria, Busan, Zhoushan, and Kaohsiung have the highest activity.

Vessels are often reflagged to States that are unrelated to the ports in which they are changing their registrations. This means that a vessel can change its flag from one country to another without ever having to enter port in either of those countries.

While there are legitimate reasons for a vessel to change its identity, abusive reflagging, or "flag hopping," is one way that operators avoid oversight. The study found that fleets with prevalent reflagging are over five times more likely to be composed of vessels under foreign ownership which are often registered to "flags of convenience," defined by the International Transport Workers' Federation as countries that offer foreign shipowners the ability to register, or fly the flag, of their own State.

While reflagging and foreign ownership are lawful, when not properly regulated and monitored, they can indicate a risk of illegal, unreported and unregulated (IUU) fishing. IUU fishing accounts for as much as 20 percent of the global seafood catch with annual losses valued at up to $23.5 billion.

"Knowing the identities of vessels fishing the high seas is critical for uncovering the connection between the potential IUU fishing behavior and vessels that repeatedly change their name, flag State or registered

owner," said co-author Gabrielle Carmine, a doctoral candidate at Duke University's Nicholas School of the Environment. "This analysis could be used to help monitor fisheries more effectively and for accountability in the use and protection of marine biodiversity."

The study also identified concentrations of fishing activity by foreign-owned vessels, which are focused in parts of the high seas and certain national waters, including the southwest Pacific, the northwest Indian Ocean, Argentina and the Falkland Islands (Malvinas), and West Africa where vessels are typically owned by China, Chinese Taipei, and Spain. The hotspots in this study correspond to the areas in which multiple nongovernmental organizations have called for better governance systems.

"By synthesizing more than 100 billion GPS positions with consolidated identity information from 200,000 vessels, we were able to reveal patterns about vessel activity from the past decade," added Park. "This study represents a major step forward in our ability to enhance monitoring efforts and help authorities direct enforcement resources."

The data used in this study will be periodically updated and shared publicly to help enable better understanding of vessel behavior and bolster international fisheries management.

More information: Jaeyoon Park, Tracking elusive and shifting identities of the global fishing fleet, *Science Advances* (2023). DOI: 10.1126/sciadv.abp8200. www.science.org/doi/10.1126/sciadv.abp8200

Provided by Global Fishing Watch

Citation: Tracking the elusive and shifting identities of the global fishing fleet (2023, January 18)

retrieved 26 April 2024 from
https://phys.org/news/2023-01-tracking-elusive-shifting-identities-global.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.