Analysis for: Satellites reveal global extent of forced labor in the world's fishing fleet

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This query generates the fraction of total time at sea by included vessels in the analysis. By running this query, we find that "These vessels represent 33% of the total time at sea spent by all fishing vessels operating in this time period tracked by Global Fishing Watch."

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Statistics

Using base model assumptions

The model correctly identifies 91% of positive vessel-years as being high-risk, while also identifying 7,576 total high-risk vessel-years (11% of the total vessel-years).

2,600 unique vessels were high-risk during at least one year (16% of the total unique vessels).

64,458 crew members were working on these boats and thus potential victims of forced labor during at least one year.

Taiwan longliners, China squid jiggers, China longliners, Japan longliners, South Korea longliners represent the five fisheries with the largest number of unique high-risk vessels.

While longliners have the largest number of high-risk vessel-years across years, squid jiggers have the highest percentage of high-risk vessels across all years (44%), followed by longliners (39%) and trawlers (1%).

We also find that known positive vessels visited ports in 21 countries during the 2012-2018-time frame using our base model assumptions.

In 2018 alone, model-identified high-risk vessels visited ports across 53 developed and developing countries in 2018 (34% of all visited countries for these gear types), including 29 Parties to the Port State Measures Agreement (Figure 4). The visited ports are predominantly in Asia, Africa, and South America, with notable exceptions being Canada, United States, New Zealand, and several European countries.

35 of the countries visited by high-risk vessels in 2018 had not been visited by known positive vessels, which is reflective of our limited training data set but may also be reflective of the limited port oversight currently occurring in many countries.

Table 1: Countries that were visited by high-risk vessels in 2018

country
American Samoa
Australia
Canada
Cape Verde
Chile
China
Congo - Brazzaville
Falkland Islands
Faroe Islands
Fiji
French Polynesia
Ghana
Guyana
Iceland
Indonesia
Japan
Kenya
Kiribati
Malaysia
Marshall Islands
Mauritania
Mauritius
Mayotte

Mexico
Micronesia (Federated States of)
Mozambique
Namibia
New Caledonia
New Zealand
Norway
Palau
Panama
Papua New Guinea
Peru
Philippines
Portugal
Samoa
Senegal
Seychelles
Singapore
Solomon Islands
South Africa
South Korea
Spain
Sri Lanka
Suriname
Taiwan
Tanzania
Thailand
Tonga
Trinidad & Tobago
United States
Uruguay

Table 2: Countries that had ratified the PSMA and were visited by high-risk vessels in 2018

country
Australia
Cape Verde
Chile
Faroe Islands
Ghana
Guyana
Iceland
Indonesia
Kenya
Mauritania
Mauritius
Namibia
New Zealand
Norway
Palau
Panama

Peru
Philippines
Portugal
Senegal
Singapore
South Africa
South Korea
Spain
Sri Lanka
Thailand
Tonga
United States
Uruguay

Using range of results from robustness checks

The model correctly identifies between 82% and 93% of positive vessel-years as being high-risk, while also identifying between 7576 total high-risk vessel-years (between 7% and 13% of the total vessel-years).

Between 1,783 and 2,674 unique vessels were high-risk during at least one year (between 11% and 16% of the total unique vessels).

Between 43,764 and 68,420 crew members were working on these boats and thus potential victims of forced labor during at least one year.

Looking across all model assumptions, Taiwan longliners, China squid jiggers, China longliners, Japan longliners, South Korea longliners represent the five fisheries with the largest number of unique high-risk vessels.

While longliners have the largest number of high-risk vessel-years across years, squid jiggers have the highest percentage of high-risk vessels across all years (between 20% and 60%), followed by longliners (between 29% and 40%) and trawlers (between 0% and 1%).