



Transshipment Plays a Major Role in the Global Tuna Industry

Transfer of RFMO-managed species is a billion-dollar business

The Pew Charitable Trusts

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Acknowledgments

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Overview

Commercial tuna fisheries are among the most valuable fisheries on Earth, and with sales valued at more than US\$40 billion a year, they play a vital role in coastal economies.¹ Transshipment – the transfer of marine products from fishing vessels to carrier (i.e., transport) vessels at sea or in port – has emerged as a way to efficiently move fish to processing plants and markets.²

However, because of a lack of research, relatively little is known about the global scale and value of transshipment, leaving many people concerned that this activity could be an avenue for illegal, unreported, and unregulated fishing, the entry of illegal products into the marketplace, and other transnational crimes, especially in areas of the ocean where effective monitoring and controls are lacking.

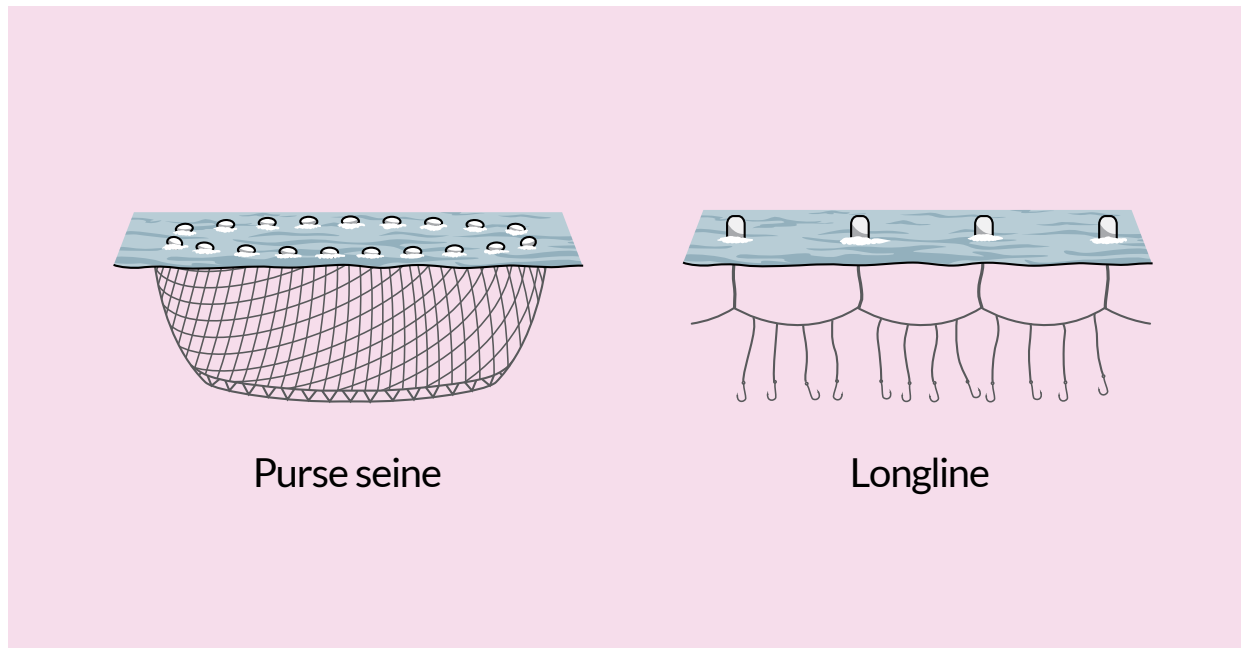
To begin illuminating the business of transshipment, The Pew Charitable Trusts commissioned a first-of-its-kind comprehensive analysis by Poseidon Aquatic Resource Management Ltd. This research examined fishing industry data from 2012 to 2018 to estimate the volume of fish managed by the world's five tuna regional fisheries management organizations (RFMOs) that was transshipped as well as the value of the transshipped quantities of tuna species during that span.³

The data shows that transshipment plays a significant role in the fishing industry worldwide. Poseidon estimates that in 2018 – the latest pre-pandemic year for which data is available – RFMO-managed fleets transshipped about 1.4 million metric tons of tuna, worth US\$10.4 billion dollars at the final point of sale, as well as roughly 200,000 metric tons of other species.⁴

This chartbook documents the findings of the Poseidon research, including detailed information on the volume of transshipped fish reported to all tuna RFMOs in 2018, as well as economic data for six highly valuable tuna species: skipjack (*Katsuwonus pelamis*), albacore (*Thunnus alalunga*), bigeye (*T. obesus*), yellowfin (*T. albacares*), Atlantic bluefin (*T. thynnus*), and southern bluefin (*T. maccoyii*). It also outlines a set of recommendations, compiled by Pew experts, to help RFMOs improve the oversight of transshipment and with it, the overall health of global fisheries.

Figure 1

The Role of Tuna Gear in Transshipment



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The type of fishing gear used influences the scale of transshipment of various species. Tuna vessels fall into two main gear categories: purse seine and longline.

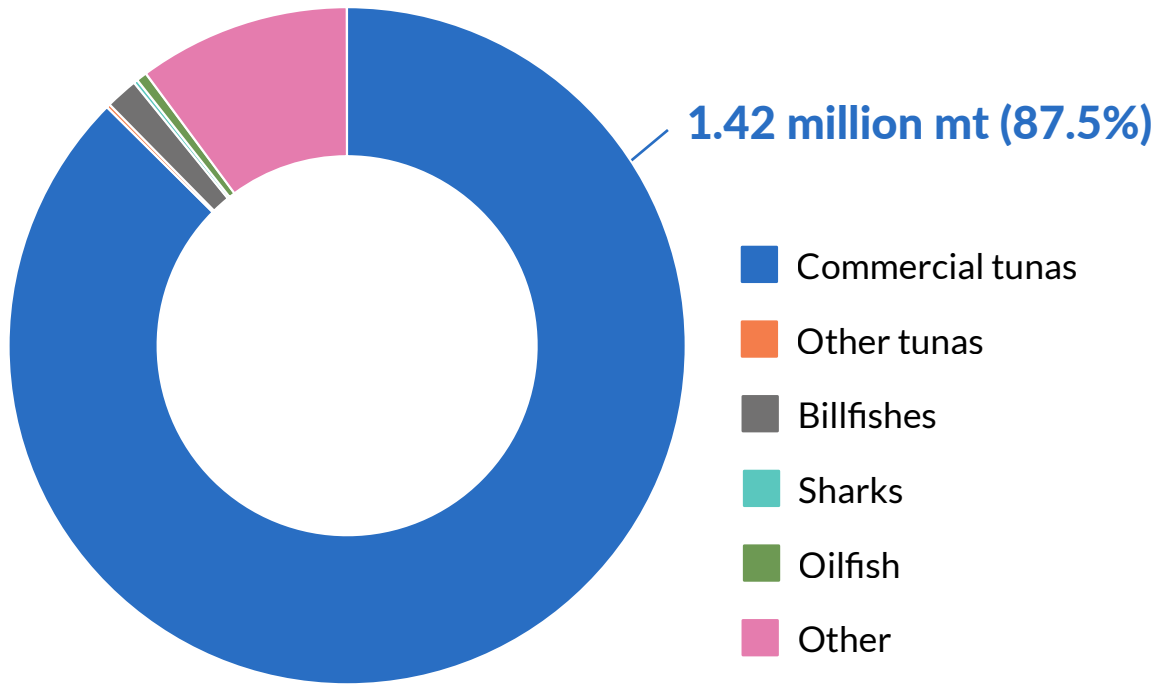
Purse seine vessels, which land most tunas worldwide, use large nets to encircle schools of fish. Because this gear is efficient at catching large volumes, it is the dominant method used for skipjack and yellowfin destined for canneries.

Longline vessels drag elaborate fishing lines made of up main lines that can be miles long and smaller branch lines that together carry thousands of baited hooks. Longlines are the second-most common type of gear (after purse seine), are used to catch several species of tuna, and mainly supply high-quality fresh or frozen fish to the market. Yellowfin, bigeye, and bluefin tunas for sashimi caught with longlines and handlines command higher prices per metric ton than tuna for canning that is caught by purse seine vessels.

Figure 2

Tuna Vessels Transship More Than Just Tunas

Transshipment volume in metric tons by species group, 2018



The tuna RFMOs oversee substantial transshipment of commercial tunas as well as billfishes, sharks, other tunas, and other unidentified species.⁵ In 2018, skipjack and yellowfin were the most transshipped tuna species, making up nearly 75% (more than 1.2 million metric tons) of all transshipped catch reported to the tuna RFMOs. Tuna fleets also reported transshipping some species that are not managed by tuna RFMOs. For example, more than 8,000 metric tons of oilfish, primarily caught by longline vessels in the Indian Ocean, was transshipped in 2018.

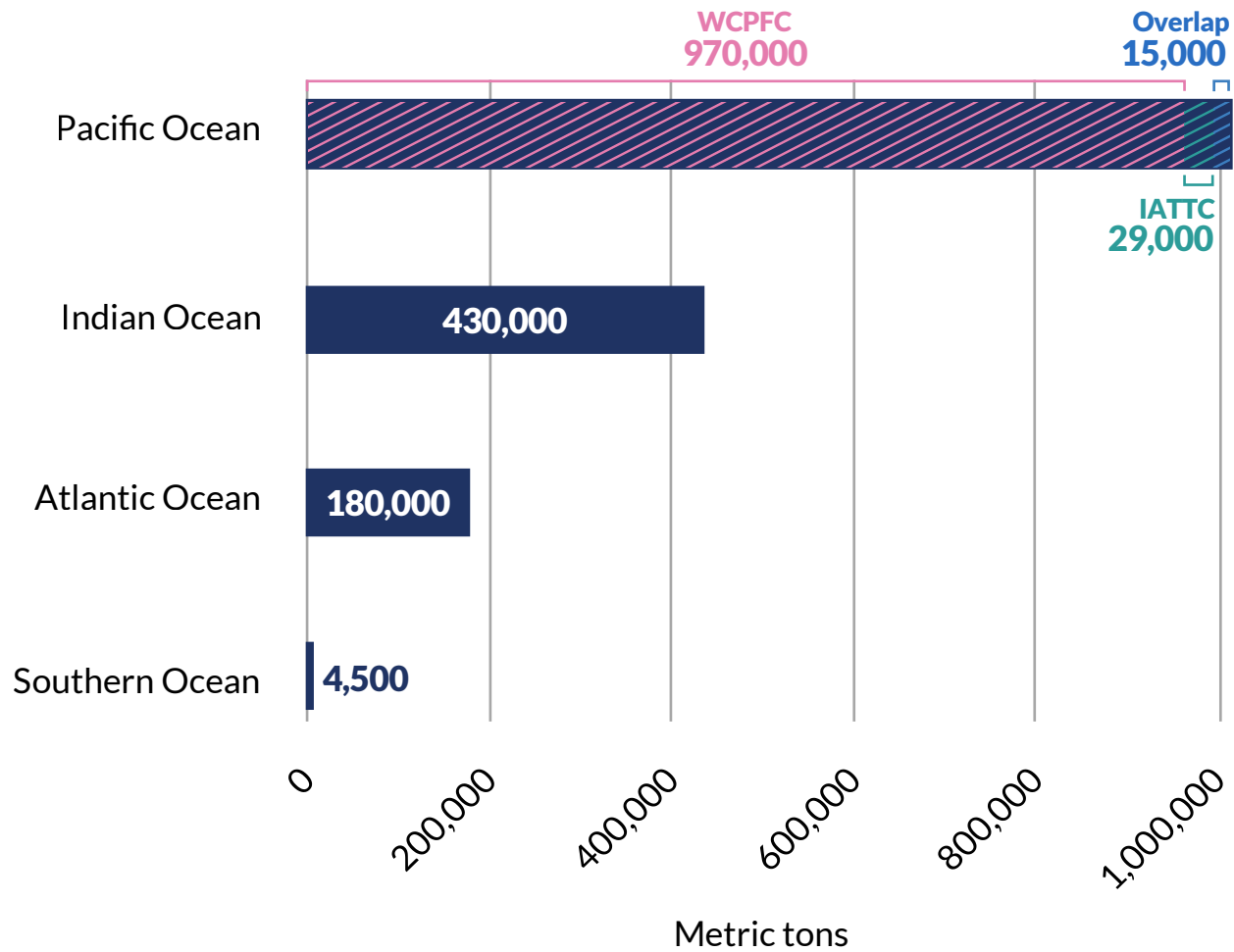
Source: Graeme Macfadyen, Transshipment Estimations, 2022

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Figure 3

Most Transshipment Occurs in the Pacific Ocean

Transshipped volume by ocean basin in metric tons, 2018



The Pacific Ocean is home to the majority of transshipment of tuna and tuna-like species—69% of the global total—with most of this activity occurring in areas managed by the Western and Central Pacific Fisheries Commission (WCPFC), including in the geographic overlap between WCPFC and the Inter-American Tropical Tuna Commission (IATTC).

The significant tuna catch in the Pacific and the overall size of the area explain the large volume of fish transshipped in the region.

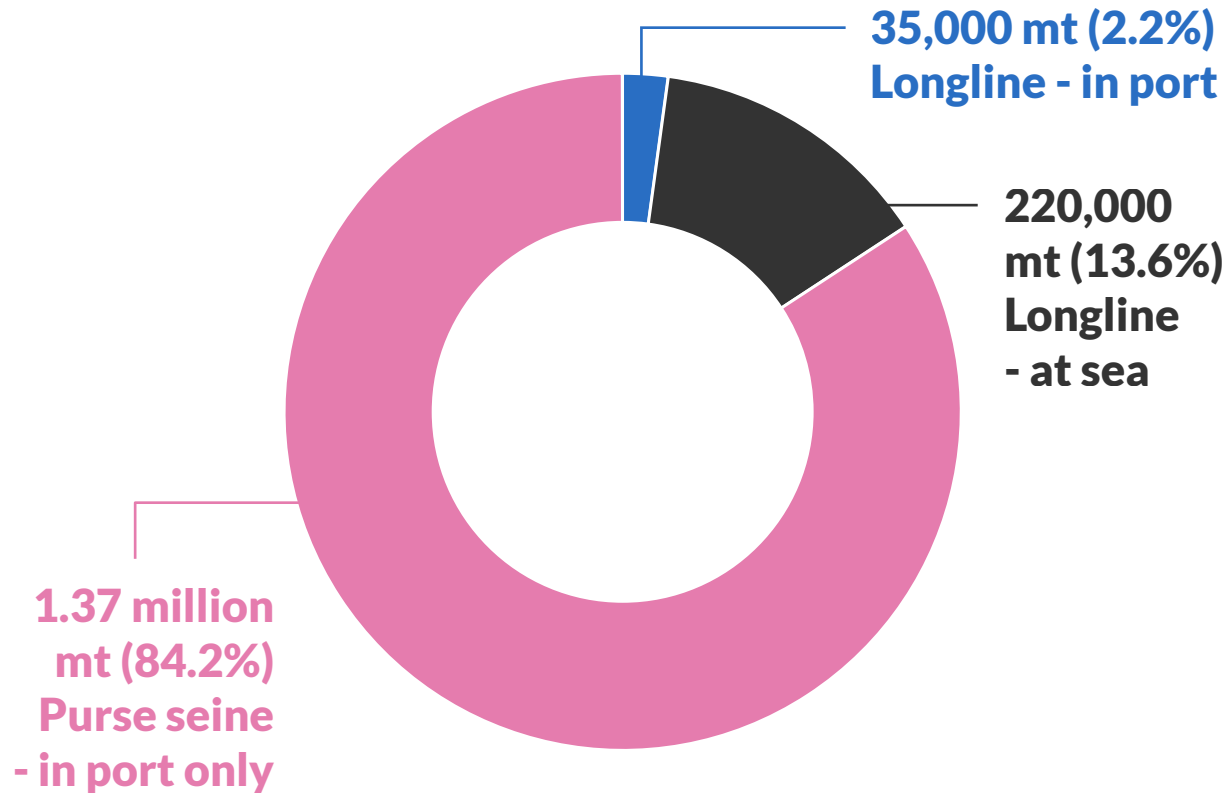
Source: Graeme Macfadyen, Transshipment Estimations, 2022

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Figure 4

Purse Seine Vessel Catch Makes Up the Vast Majority of Transshipped Fish

Transshipped volume by gear type and location in metric tons, 2018



Most transshipment occurs in port between carrier vessels and purse seine vessels, which mainly catch tuna that end up in cans and which accounted for 84% of all transshipped catch in 2018. Longline vessels primarily transship at sea, allowing high-value fresh catch, such as bigeye tuna, to reach the dock as quickly as possible.

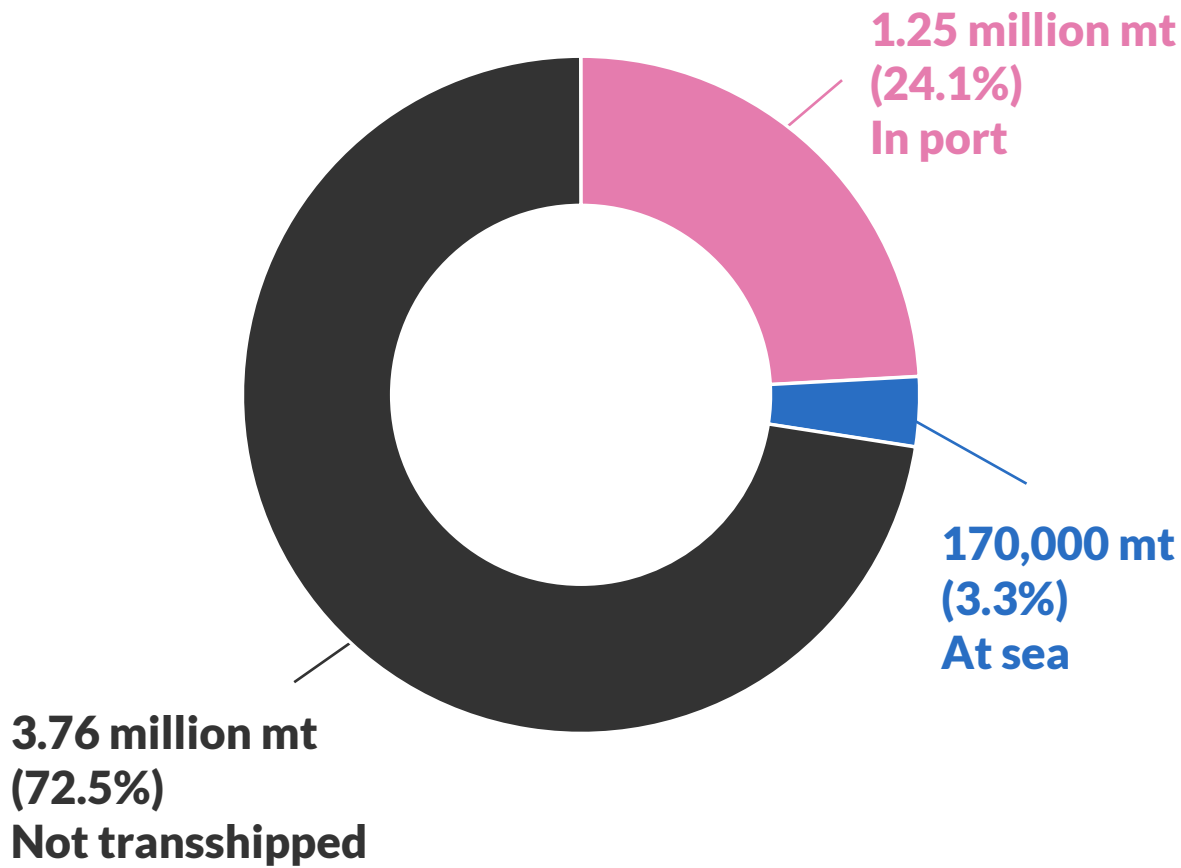
Source: Graeme Macfadyen, Transshipment Estimations, 2022

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Figure 5

Nearly a Third of High-Value Tuna Catch Is Transshipped

Tuna landings by transshipment location, 2018



Although many marine products are transshipped, six highly valuable tuna species drive the transshipment practices of tuna fleets around the world.⁶ In 2018, transshipment of these species accounted for more than 1.4 million metric tons of tuna, or about 27% of the year's total tuna catch, with most of that transshipped in port.

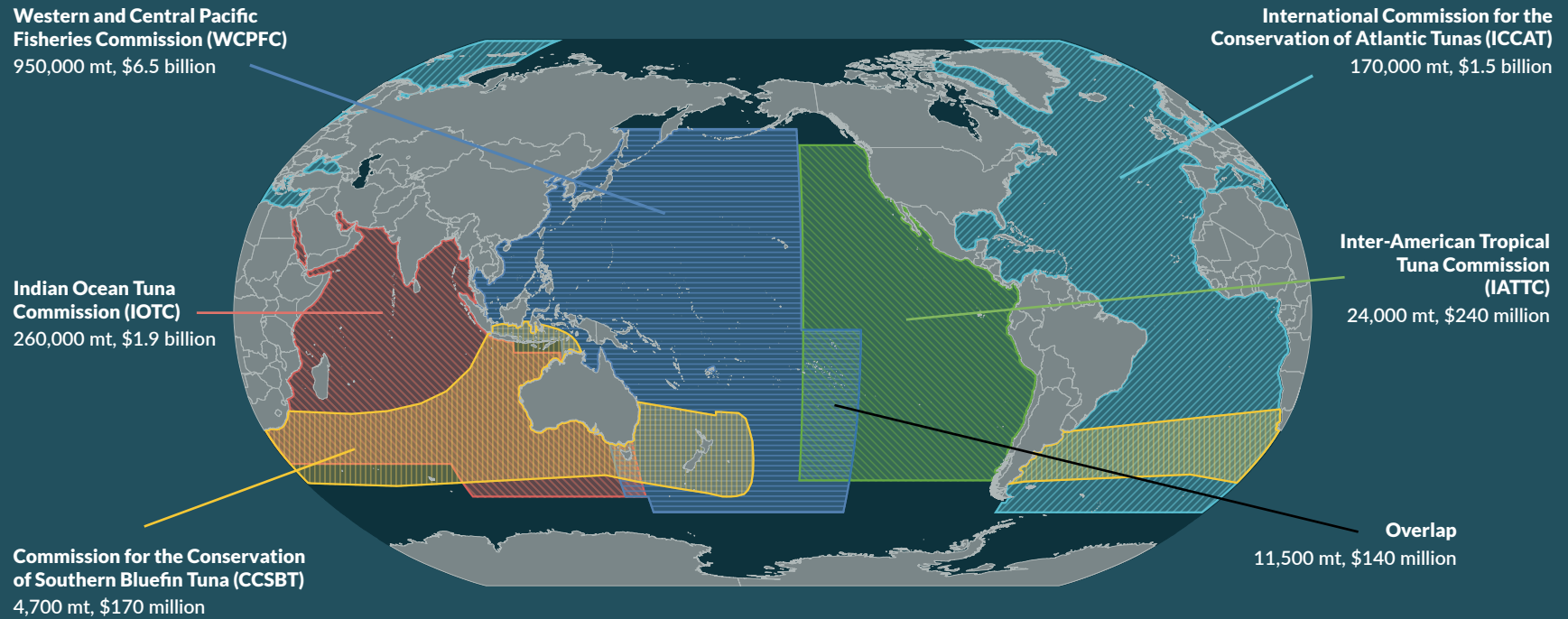
Source: Graeme Macfadyen, Transshipment Estimations, 2022

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Figure 6

Transshipped Tuna Is Worth Nearly US\$10.4 Billion, With Two-Thirds of That Coming From the Pacific Ocean

Volume and value of transshipped tunas by RFMO, in metric tons and U.S. dollars, 2018



The Pacific region, including areas managed by WCPFC and IATTC, is home to the most tuna transshipments in terms of quantity and end value, which is estimated at US\$6.8 billion.⁷ The waters managed by the Indian Ocean Tuna Commission have the second-most tuna transshipments. In the western Pacific and the Indian Ocean, tuna canneries can be far from the fishing areas, so transshipment is a frequently used tool that enables fishers to get significant amounts of catch to processors quickly and efficiently.

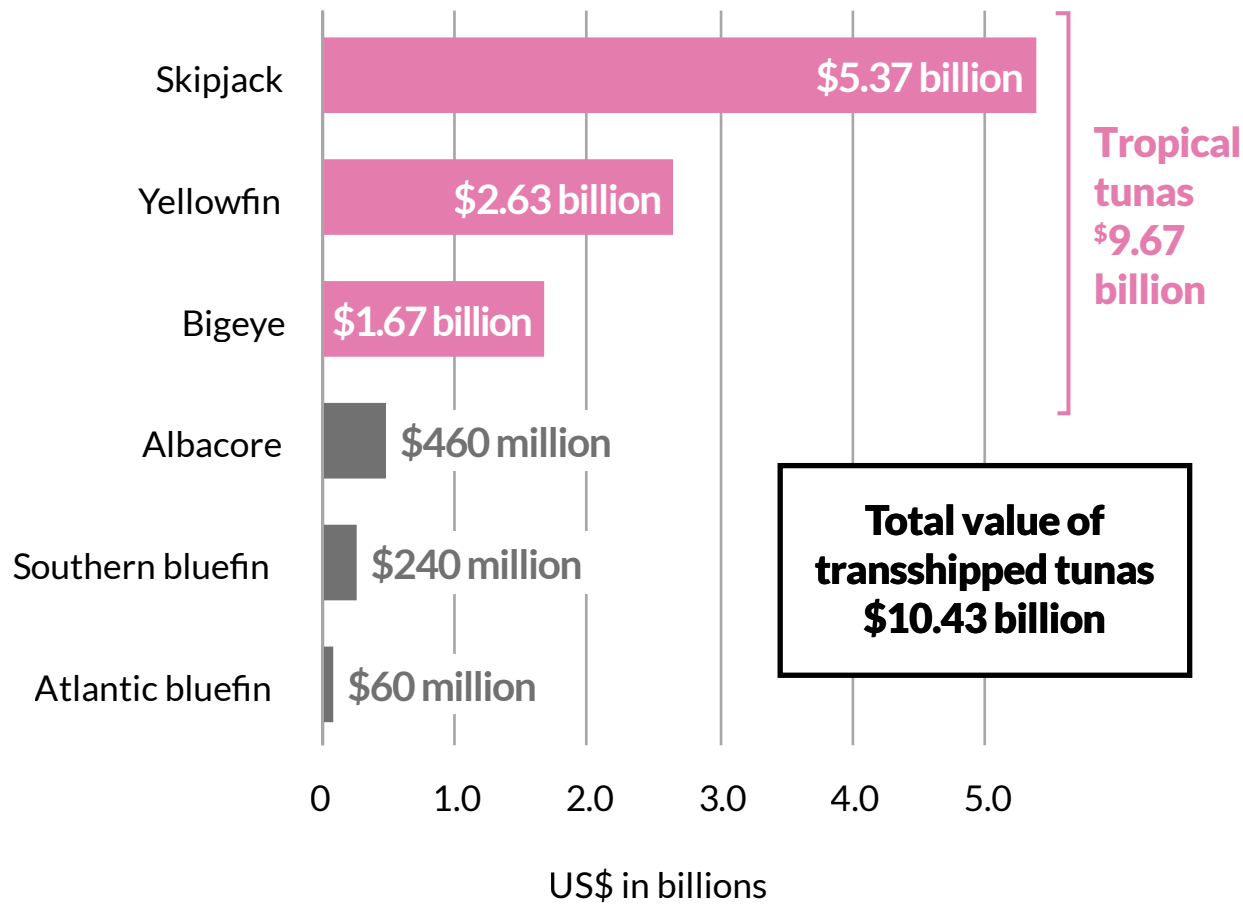
Note: The CCSBT sets no geographic limits of competence; it extends over all national waters and the high seas where southern bluefin tuna are found.

Sources: Food and Agriculture Organization of the United Nations Geonetwork, <http://www.fao.org/geonetwork/srv/en/main.home?uuid=cc7dbf20-1b8b-11dd-8bbb-0017f293bd28>. Natural Earth. Graeme Macfadyen, Transshipment Estimations, 2022

Figure 7

Transshipped Tropical Tunas Are the Most Valuable Overall

End value of transshipped catch by tuna species, in U.S. dollars, 2018



In 2018, vessels transshipped more than US\$9 billion worth of tropical tunas, skipjack, yellowfin, and bigeye. Of those, skipjack and yellowfin, which are primarily caught by purse seine vessels, made up the most significant portion. Although caught primarily with longlines and with less frequency, bigeye tuna requiring prompt delivery to high-end sushi and sashimi markets also accounted for a large share of the transshipped value worldwide.

Source: Graeme Macfadyen, Transshipment Estimations, 2022

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Table 1

Transshipped Longline-Caught Tunas Are Most Valuable Per Ton

End value and volume by gear type in metric tons, 2018

Gear	2018 volume by gear (metric tons)	2018 transshipped end value per metric ton (end value/volume)
Purse seine	1.23 million	US\$6,100
Longline	195,000	US\$14,600

Source: Graeme Macfadyen, Transshipment Estimations, 2022

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Although tuna caught by purse seine vessels makes up the bulk of the transshipped volume, longline-caught tunas, primarily bigeye, bluefin, and albacore, are the most valuable per ton, mainly because of the higher prices that consumers pay for tuna sushi, sashimi, and loins. These high-value species drive the at-sea transshipment industry, as fishers aim to bring these products to seafood markets as quickly as possible.

Recommendations

Transshipment serves an important role in the seafood supply chain, particularly for valuable tuna fisheries. More than 27% - US\$10.4 billion's worth - of global tuna catch is transshipped each year. And although many RFMOs have already begun to more closely monitor and manage transshipment, wider adoption of the United Nations Food and Agriculture Organization's (FAO's) Voluntary Guidelines for Transshipment, which include reporting, monitoring, and information-sharing, can guarantee more comprehensive oversight.⁸ To ensure that these transfers are legal and sustainable, fisheries managers and government officials should implement the guidelines and improve individual oversight in three key areas:

- 1. Reporting.** Fishing and carrier vessels should be required to submit timely transshipment activity reports so authorities, including at RFMOs, can verify the catch information and identify inaccuracies. In addition to information about target species, reports should include details on the amount and type of non-target species that are retained and transshipped.
- 2. Data sharing.** RFMOs and States should establish effective transshipment data-sharing procedures. Overlapping or neighboring RFMOs should also consider adopting data-sharing agreements to ensure robust oversight of cross-registered vessels and transshipment activities in shared waters.
- 3. Monitoring.** Fisheries managers should require 100% coverage by human or electronic observers (or a combination) on both the fishing and carrier vessels for all transshipping events, regardless of where the events occur. This should be achieved through adoption by RFMOs of electronic monitoring programs and through greater access for fishing operations to independent systems of fully staffed, trained, and licensed individuals from national or regional observer programs who are certified by the relevant RFMO to collect information and data for scientific and compliance purposes. And because most RFMO-managed transshipment occurs in the waters and ports of the western Pacific, the WCPFC in particular should ensure strong oversight by updating and implementing its transshipment management measure with new regulations that align with the language of the voluntary guidelines.

Conclusion

Whether at sea or in port, transshipment is a major part of the global tuna fishing industry. Strong oversight and port inspections are integral to keep illegal seafood out of global supply chains, particularly because nearly a third of high-value tuna is transshipped. Decision makers at RFMOs should embrace Pew's recommendations and the FAO's voluntary guidelines to improve the process and strengthen rules on the high seas and in port. Through intergovernmental and regional coordination, countries and RFMOs can continue to develop and implement regulations to ensure that all transshipment of catch is legal and verifiable, reduce opportunities for illegal products to reach the market, and maintain a healthy, transparent marine economy.

Endnotes

- 1 Raiana McKinney et al., “Netting Billions 2020: A Global Tuna Valuation,” The Pew Charitable Trusts, 2020, <https://www.pewtrusts.org/-/media/assets/2020/10/nettingbillions2020.pdf>.
- 2 This chartbook and the underlying study define transshipment in accordance with the Western Central Pacific Fisheries Commission’s Convention, as the “unloading of all or any of the fish on board a fishing vessel to another fishing vessel either at sea or in port” where “fishing vessels” includes carrier vessels. However, the volume and value estimates shown do not include transshipments between carrier vessels. The estimates also do not include fish transferred from vessels to aquaculture facilities. Further, fish that are containerized in non-fishing or fish carrier vessels are not considered as transshipments. All volume-related figures and statistics are probably underestimates compared with the actual transshipments because some flag States did not report transshipment data in all cases.
- 3 Graeme Macfadyen, “Transshipment Estimations,” Poseidon Aquatic Resources Management Ltd, 2022, <https://consult-poseidon.com/fishery-reports/1681%20Poseidon%20transshipment%20report%2029.4.22%20v2%20FINAL.pdf>. The full technical documents produced for this analysis, including a detailed methodology, can be found at [pewtrusts.org/TunaValue](https://www.pewtrusts.org/TunaValue).
- 4 End values are in nominal dollars.
- 5 These categories are equivalent to those reported to the tuna RFMOs: commercial tunas: skipjack tuna (*K. pelamis*), yellowfin tuna (*T. albacares*), bigeye tuna (*T. obesus*), albacore tuna (*T. alalunga*), Atlantic bluefin tuna (*T. thynnus*), and southern bluefin tuna (*T. maccoyii*); other/unidentified tunas: Atlantic bonito (*S. sarda*), frigate tuna, (*A. thazard*), dogtooth tuna (*G. unicolor*), and other lower-valued tuna species listed in Appendix 1 of the full technical documents available at [pewtrusts.org/TunaValue](https://www.pewtrusts.org/TunaValue), plus any unidentified tunas; billfishes: blue marlin (*M. nigricans*), striped marlin (*K. audax*), swordfish (*X. gladius*), and other billfishes listed in Appendix 1 of the full technical documents; sharks: thresher shark (*A. vulpinus*), blue shark (*P. glauca*), shortfin mako shark (*I. oxyrinchus*), whale shark (*R. typus*), and other shark species listed in Appendix 1 of the full technical documents; oilfish: oilfish (*R. pretiosus*); and, other/unidentified: wahoo (*A. solandri*), ocean sunfish (*M. mola*), chub mackerel (*S. japonicus*), and other species listed in Appendix 1 of the technical documents, plus any other unidentified species.
- 6 No Pacific bluefin were reported to tuna RFMOs as transshipped in the years studied.
- 7 This end value reflects all final sales of tuna products, including the full price of canned tuna.
- 8 Food and Agriculture Organization of the United Nations, “Voluntary Guidelines for Transshipment,” 2023, <https://www.fao.org/iuu-fishing/resources/detail/en/c/1638082/>.

For more information, please visit: www.pewtrusts.org/TunaValue

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