



ILLEGAL FISHING

Which fish species are at highest risk
from illegal and unreported fishing?

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EXECUTIVE SUMMARY

New analysis by World Wildlife Fund (WWF) finds that over 85 percent of global fish stocks can be considered at significant risk of Illegal, Unreported, and Unregulated (IUU) fishing. This evaluation is based on the most recent comprehensive estimates of IUU fishing and includes the world's major commercial stocks or species groups, such as all those that are regularly assessed by the United Nations Food and Agriculture Organization (FAO). Based on WWF's findings, the majority of the stocks, 54 percent, are categorized as at high risk of IUU, with an additional 32 percent judged to be at moderate risk. Of the 567 stocks that were assessed, the findings show that 485 stocks fall into these two categories.

More than half of the world's most overexploited stocks are at the highest risk of IUU fishing. Examining IUU risk by location, the WWF analysis shows that in more than one-third of the world's ocean basins as designated by the FAO, all of these stocks were at high or moderate risk of IUU fishing.

The U.S. imports more than 100 different wild-caught species, which represent more than 400 diverse wild-caught products. In October 2015, the U.S. National Ocean Council (NOC) Working Group on IUU Fishing and Seafood Fraud released a list of species it identified as "at risk" of IUU fishing.

While there is some alignment between the species the NOC identified as "at risk" of IUU fishing and the species identified in this study, the WWF analysis demonstrates that IUU fishing is pervasive across species and regions. An effective solution to ending IUU imports into the United States must ultimately address all species entering the U.S. market.



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INTRODUCTION

IUU fishing is a serious threat to the sustainable management of fisheries worldwide – depleting fish stocks, undermining responsible management, destroying marine ecosystems, and threatening the livelihoods of coastal fishermen and communities. It has also been associated with slave labor and other human rights abuses and with drug and arms smuggling, further destabilizing vulnerable people and communities as well as the ocean environment. Conservative estimates of IUU fishing put it at 13 to 31 percent of the global catch, valued at between \$10 and \$23 billion annually.¹ Multiple sources make clear that it occurs in all oceans and threatens nearly all fisheries and species. Reports detailing IUU fishing across the globe have documented violations for many and varied species – from Bluefin tuna to mackerels, from snow crabs to shrimp, and hundreds of others.

WWF's analysis suggests that 86 percent of the number of global fish stocks are at risk for IUU fishing. In terms of the volume of the global catch, the stocks at highest risk to IUU fishing also represent more than 85 percent of the total. 57 percent of the volume of the global catch is at high risk of IUU fishing and 30 percent of the volume of the global catch is at moderate risk of IUU fishing.

The factors contributing to risk of IUU fishing, are generally not species-specific, but rather are multiple and complex and are present in the majority of the world's fisheries today. Often the economic gains from IUU fishing are significant enough to motivate otherwise law-abiding fishers to engage. There are many ways fishers can bypass regulations and management rules to engage in illegal fishing – they can overfish, fish in areas where they are not authorized, fish out of season, underreport catches and discard low-value fish, transship at sea to avoid detection, and report catches of one species for another in order to avoid quota violations, among other things. Illegal fishing often occurs because there is inadequate or ineffective monitoring, control, and surveillance (MCS) of fishing activities, due to capacity and resource constraints or corruption and a lack of effective penalties or sanctions in place to deter the activity.

The risk of IUU fishing can thus arise from a number of different public governance failures and/or from insufficient supply chain controls by private sector actors. Its prevention depends on governments doing their jobs as flag states, coastal states, port states, processing states, and market states. It also depends on market actors obtaining information and tracing products through complex supply chains. Broad factors relating to the rule of law, the prevalence of corruption, the transparency of fishing activities, the presence of organized crime, the potential for high profits, the low risk of detection, the strength of enforcement, and the availability of third party auditing mechanisms to verify information and traceability claims all contribute to whether and where IUU fishing occurs and whether IUU products enter supply chains.

Higher seafood prices increase the incentive for IUU fishing of the most valuable species. But pervasive IUU fishing persists because the costs of IUU operators are much lower than those of legitimate fishermen (IUU vessels do not typically pay for observers, licenses, fees or data collection, nor do they necessarily comply with safety rules, bycatch rules or labor requirements), resulting in higher profits even for lower value species. Global overcapacity, with more vessels operating to catch fewer and fewer fish, also serves as a potential driver of IUU fishing.

Risk of IUU fishing may also be related to the biology and/or behavior of the fish. For example, if the spatial range of the stock extends into more than one area, the fishery may be managed by multiple States that have varying capacities to monitor and patrol their waters. Spatial distribution can also change seasonally. Some tuna stocks, for example, follow migratory routes that take them through the waters of several countries and out into the high seas. This route may lead to a higher rate of underreporting compared to fisheries located within the territorial waters of States with strong and well-implemented regulations.

For all of these reasons, it is clear that virtually all stocks and fisheries are subject to some form of IUU fishing. In an attempt to answer two key questions – which fish stocks are at the greatest risk of IUU fishing, and where these risks are highest – WWF analyzed three sets of data: 1) the most comprehensive estimates of IUU fishing for species groups; 2) estimates of IUU fishing for ocean basins; and 3) the most recent information on stocks assessed by the FAO. This analysis, and our results, are described in detail herein.

METHODOLOGY

IUU Estimates

One of the main resources used for this analysis is the Agnew et al. 2009 study “Estimating the Worldwide Extent of Illegal Fishing,” which estimates illegal and unreported fishing (herein referred to as IUU) for groups of species as classified under the International Statistical Classification of Aquatic Animals and Plants (ISSCAAP).ⁱⁱ That study also presents estimates of IUU for ocean areas, as classified by the FAO. (See Appendix 1 for IUU estimates for species’ groups and IUU estimates for ocean basins.)

While the estimates are somewhat dated, they are the most comprehensive and the only ones that exist currently that have been conducted on a global basis and assess the level of IUU for species groups and ocean areas.ⁱⁱⁱ The situations around fisheries are dynamic, and changes have occurred since the initial data was collected; in some cases there have been improvements, while in others the situation has worsened (see e.g., Marine Policy 2014 Estimates of illegal and unreported fish in seafood imports to the U.S.).^{iv}

Stock Status

The FAO has collected information assessing the status of more than 550 commercially fished species or stock groups.^v Many of these species groups, however, may contain several species, and often the status of these individual stocks was not provided because a number of species were aggregated in a group (i.e. billfishes). These stock assessment reviews are conducted by the FAO every 5 years. The data used for this analysis is from the most recent stock assessment review conducted in 2011.

Scoring System

Stocks or species groups were categorized as either having high (Red), moderate (Yellow), or low (Green) risk of IUU fishing, based on a combination of estimates of IUU for the species group (based on factors of IUU related to the fish themselves, i.e. high-value, gear-type used, etc.) and for the ocean area in which the species was caught (based on factors related to the MCS, enforcement presence, and management schemes where the fishing occurred). The estimated level of IUU for both of these elements – IUU for species group/ISSCAAP and for Ocean Area – were used in concert to identify a stock’s risk for IUU fishing.



Remains of a fishing trawler © Peter Chadwick / WWF

LOW RISK OF IUU FISHING - GREEN

Stocks or species groups were categorized as at low risk of IUU if they met one of the following criteria:

- Where the average estimated IUU for stocks or species groups and for ocean areas was both less than 10 percent
- If the stock or species group had an average estimated level of IUU less than 10% and was from an ocean area with an estimated level of IUU less than the global average (18 percent)
- If the stock or species group had an average estimated level of IUU less than the global average (also 18%) and was from an ocean area with an estimated level of IUU less than 10 percent

Examples of species or species groups categorized as “low risk” based on estimates of IUU for the species group and for the ocean basin include:

Low Risk – Example of Scoring for Stocks

Stock	Scientific Name	Species Group (ISSCAAP)	Species Group (ISSCAAP) GLOBAL IUU Avg. Estimate (Agnew 2009)	Region	IUU Avg. Estimate by Region (Agnew 2009)
European plaice	<i>Pleuronectes platessa</i>	31	3%	Northeast Atlantic (FAO Area 27)	9%
Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>	36	6%	Western Indian Ocean (FAO Area 51)	18%
American sea scallop	<i>Placopecten magellanicus</i>	55	15%	Northwest Atlantic (FAO Area 21)	9%

In the above table, all three examples would be categorized as at low risk to IUU fishing based on the combination of estimates of IUU for the species group (ISSCAAP classification) and for the region. The first example, European plaice, is one of the species classified in ISSCAAP Group 31 (“Flounders, Halibuts, and Soles”) and is found in the Northeast Atlantic (FAO Area 27). Associated estimates of IUU for both the species group and for the region are less than 10 percent, putting the stock at low-risk.

The second example provided above, Narrow-barred Spanish mackerel from the Western Indian Ocean (FAO Area 51), has associated estimates of IUU for the region that are between 10 and 18 percent, but because the estimated level of IUU for the species group is less than 10 percent, it was categorized as low risk. In contrast, Narrow-barred Spanish mackerel caught in the Eastern Indian Ocean (FAO Area 57), is categorized as at “moderate” risk of IUU fishing because the estimated IUU for that Ocean Area is 32 percent. Using only one of the IUU estimates in isolation – for either the ISSCAAP Group or for the Ocean Region – would not be enough information to establish risk for IUU, and in this example knowing where the fish was caught is an important indicator for risk of IUU.

Information from the first four columns (Region, ISSCAAP Group, Stock, and Scientific name) are all taken from the FAO stock assessments while the estimates for IUU (ISSCAAP IUU Average and IUU Average by Region) are taken from the Agnew et al. study.

MODERATE RISK OF IUU FISHING - YELLOW

Stocks or species groups were categorized as at moderate risk of IUU if they met one of the following criteria:

- Where the average estimated IUU for stocks or species groups and for ocean areas was less than 10 percent but where the stock or species group was from an ocean area where the estimated level of IUU was unknown or greater than the global average (18 percent)
- If the stock or species group had an unknown level of IUU and was from an ocean area with an unknown level of IUU or an estimated level of IUU less than the global average (18 percent)
- If the stock or species group had an average estimated level of IUU less than the global average (18 percent) and was from an ocean area with an unknown level of IUU or an estimated level of IUU less than the global average (18 percent)
- If the stock or species group had an average estimated level of IUU greater than the global average (18 percent) but was from an ocean area with an estimated level of IUU less than 10 percent

Examples of species or species groups categorized as “moderate risk” based on estimates of IUU for the species group and for the ocean basin include:

Moderate Risk – Example of Scoring for Stocks

Stock	Scientific Name	Species Group (ISSCAAP)	Species Group (ISSCAAP) IUU Avg. Estimate (Agnew 2009)	Region	IUU Average Estimate by Region (Agnew 2009)
Kawakawa	<i>Euthynnus affinis</i>	36	6%	Western Central Pacific (FAO Area 71)	34%
Sharks, rays, chimaeras		38	Unknown	Western Central Atlantic (FAO Area 31)	10%
Chub mackerel	<i>Scomber japonicus</i>	37	17%	Mediterranean and Black Sea (FAO Area 37)	Unknown
Atlantic redfishes NEI	<i>Sebastes spp.</i>	34	50%	Northeast Atlantic (FAO Area 27)	9%
Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>	36	6%	Eastern Indian Ocean (FAO Area 57)	32%

HIGH RISK OF IUU FISHING - RED

Stocks or species groups were categorized as at high risk of IUU if they met one of the following criteria:

- Where the average estimated IUU for stocks or species groups and for ocean areas was greater than the global average (18 percent) and where the stock or species group was from an ocean area where the estimated level of IUU was unknown or greater than 10 percent
- If the stock or species group had an unknown level of IUU and was from an ocean area with an unknown level of IUU or an estimated level of IUU greater than the global average (18 percent)
- If the stock or species group had an average estimated level of IUU greater than 10 percent and was from an ocean area with an estimated level of IUU greater than the global average (18 percent)

Examples of species or species groups categorized as “high risk” based on estimates of IUU for the species group and for the ocean basin include:

High Risk – Example of Scoring for Stocks

Stock	Scientific Name	Species Group (ISSCAAP)	Species Group (ISSCAAP) IUU Avg. Estimate (Agnew 2009)	Region	IUU Average Estimate by Region (Agnew 2009)
European anchovy	<i>Engraulis encrasicolus</i>	35	21%	Eastern Central Atlantic (FAO Area 34)	37%
Silky shark	<i>Carcharhinus falciformis</i>	38	Unknown	Eastern Indian Ocean (FAO Area 57)	32%
Common octopus	<i>Octopus vulgaris</i>	57	25%	Mediterranean and Black Sea (FAO Area 37)	Unknown
Chub mackerel	<i>Scomber japonicus</i>	37	17%	Western Indian Ocean (FAO Area 51)	18%

OVERALL FINDINGS

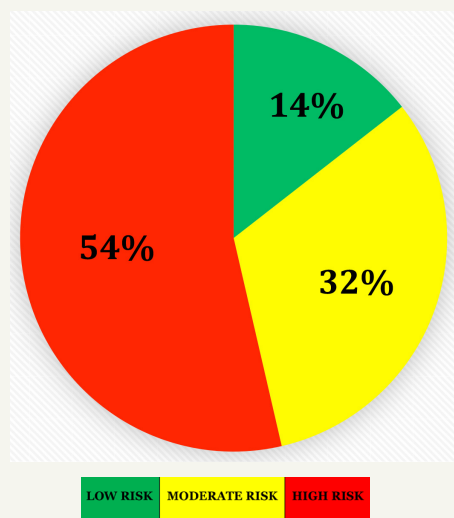
The number of stocks categorized at low-, moderate- and high- risk of IUU fishing based on this combination of estimates of IUU for the species group/stock and the region in which that species group/stock was caught result in an overwhelming majority of stocks that are either at high risk or moderate risk to IUU fishing. The following table provides a breakdown for the scoring of species and species' groups by their risk identification (See Appendix 2 for full table of stocks assessed and categorized for risk of IUU.)

Scoring Categories for Risk of IUU Fishing

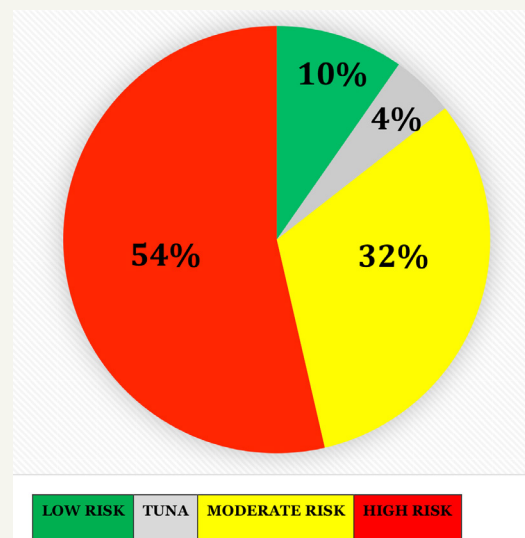
Score	IUU Average	IUU Ocean Area	Overall Number of Species
Low Risk	< 10%	< 10%	82
	<10%	10-18%	
	10-18%	< 10%	
Moderate Risk	<10%	Unknown	181
	<10%	>18%	
	Unknown	<10%	
	Unknown	10-18%	
	Unknown	Unknown	
	10-18%	Unknown	
High Risk	10-18%	10-18%	304
	>18%	< 10%	
	Unknown	>18%	
	>18%	Unknown	
	10-18%	>18%	
	>18%	10-18%	
	>18%	>18%	
TOTAL			567

Based on these criteria, 86 percent (485 out of 567) of all species/groups or stocks assessed were categorized as at high or moderate risk of IUU fishing; 54 percent experienced high levels of IUU fishing, while 32 percent experienced moderate levels of IUU fishing. Only 14 percent (82) of all species/groups or stocks assessed were categorized as at low risk of IUU fishing. However, of these, almost one-third (27) are tuna stocks, for which more recent studies have found significant levels of IUU. If tuna stocks were reclassified as moderate to high risk according to those analyses, only about 10 percent of total stocks globally would be categorized at low risk of IUU fishing.

Species at-risk of IUU Fishing
567 Stocks/Species Groups



Species at-risk of IUU Fishing
Tuna Stocks Separate



Fifty species/stock groups at highest risk of IUU fishing also had a stock status that was overexploited. These included high-volume, commercially important fisheries such as:

- Chilean jack mackerel from the Southeast Pacific (FAO Area 87)
- Argentine hake from the Southwest Atlantic (FAO Area 41)
- Round sardinella from the Eastern Central Atlantic (FAO Area 54)

The ocean basins with the highest percentage of fish stocks at high or moderate risk of IUU fishing were:

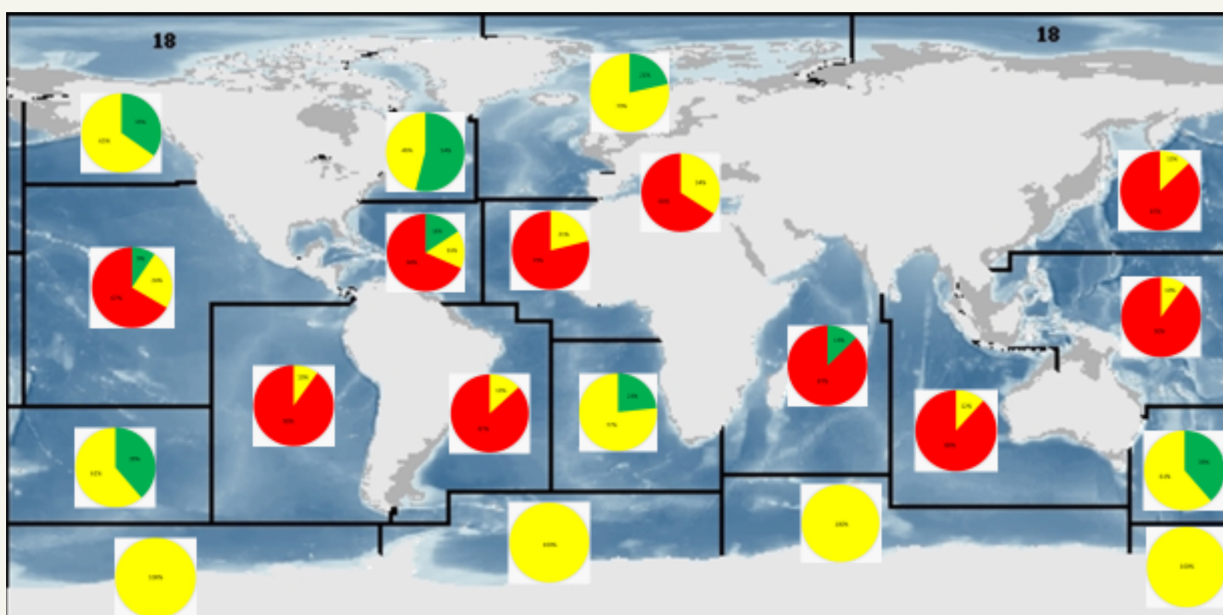
FAO Ocean Areas – Highest Risk of Stocks for IUU Fishing

Ocean Basin (FAO Area)	High Risk	Moderate Risk	% of Global Catch by Volume (excluding tunas)
Western Central Pacific (FAO Area 71)	90%	10%	12%
Southeast Pacific (FAO Area 87)	90%	10%	14%
Eastern Indian Ocean (FAO Area 57)	88%	12%	8%
Northwest Pacific (FAO Area 61)	87%	13%	24%
Southwest Atlantic (FAO Area 41)	87%	13%	2%
Western Indian Ocean (FAO Area 51)	87%	--	4%
Eastern Central Atlantic (FAO Area 34)	79%	21%	3%
Western Central Atlantic (FAO Area 31)	68%	16%	1%
Eastern Central Pacific (FAO Area 77)	67%	24%	2%
Mediterranean and Black Sea (FAO Area 37)	66%	34%	2%

These ocean basins accounted for 72 percent of the global catch, excluding stocks of tuna. Seven of these ocean basins had all of their stocks assessed as either at high risk or moderate risk for IUU fishing, accounting for 65 percent of the global catch (excluding stocks of tuna).

Tuna stocks were aggregated by entire ocean area (i.e for the Atlantic, Pacific, and Indian Oceans respectively) rather than by individual FAO Ocean Area. As a result, it was not possible to identify the specific FAO Ocean Area for migratory tuna stocks for inclusion in the assessment by FAO Ocean Area. More information on estimates of IUU in the ocean basins can be found in the final section of this analysis, “Ocean Basin Profiles”.

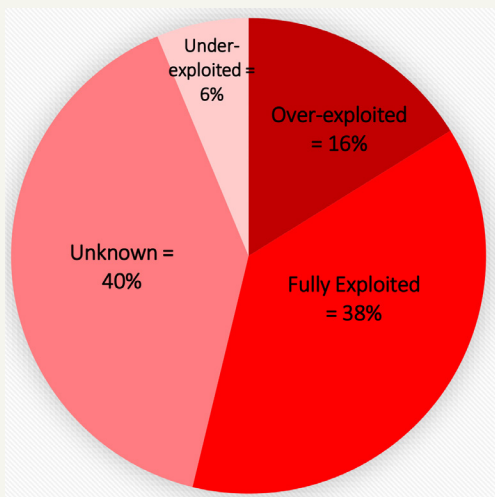
Stocks at-risk for IUU Fishing - Percent by FAO Ocean Area



High Risk/Red

304 stocks or species groups, representing 54 percent of the total number of stocks/species groups assessed, were categorized as of high risk of IUU fishing.

Stocks at High Risk to IUU Fishing



Of these 304 stocks or species groups:

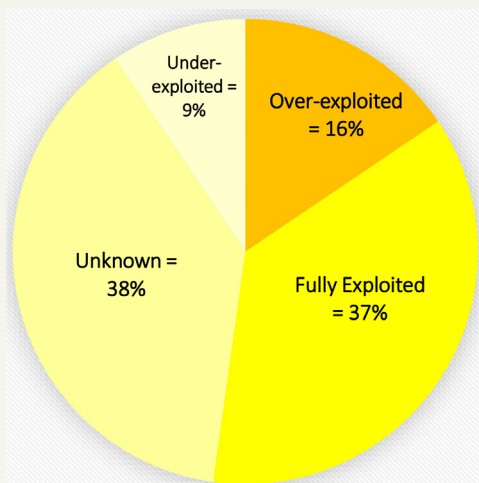
- 50 were assessed as overexploited (16% of total - or 27% when stocks with an “unknown” status are excluded)
- 114 were assessed as fully exploited (38%)
- 121 had an unknown status (40%)
- 19 were assessed as non-fully/under-exploited (6%)

These 304 stocks accounted for 57 percent of the volume of the global catch.

Moderate Risk/Yellow

181 stocks or species groups, representing 32 percent of the total number of stocks/species groups assessed were categorized as of moderate risk of IUU fishing.

Stocks at Moderate Risk to IUU Fishing



Of these 181 stocks:

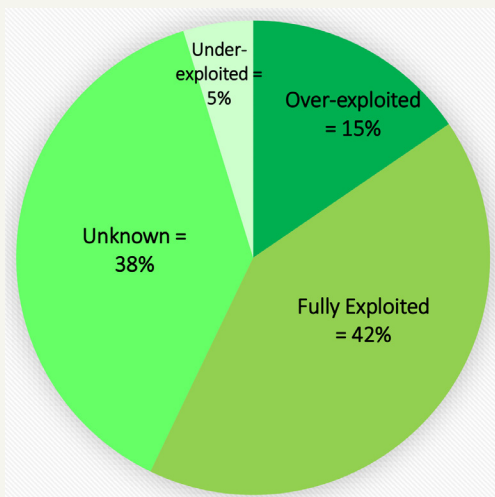
- 28 were assessed as overexploited (16%)
- 67 were assessed as fully exploited (37%)
- 69 had an unknown status (38%)
- 17 were assessed as non-fully/under-exploited (9%)

These 181 stocks accounted for 30 percent of the volume of the global catch.

Low Risk/Green

82 stocks or species groups, representing 14 percent of the total number of stocks/species groups assessed were categorized as of low risk of IUU fishing.

Stocks at Low Risk to IUU Fishing

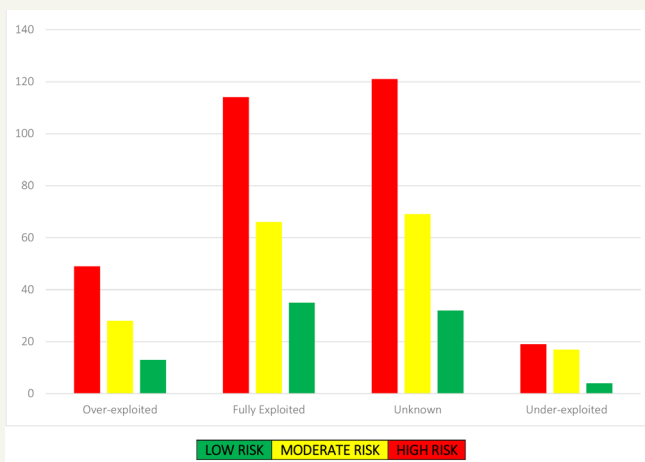


Of these 82 stocks:

- 12 were assessed as overexploited (15%)
- 34 were assessed as fully exploited (42%)
- 32 had an unknown status (39%)
- 4 were assessed as non-fully/under-exploited (4%)

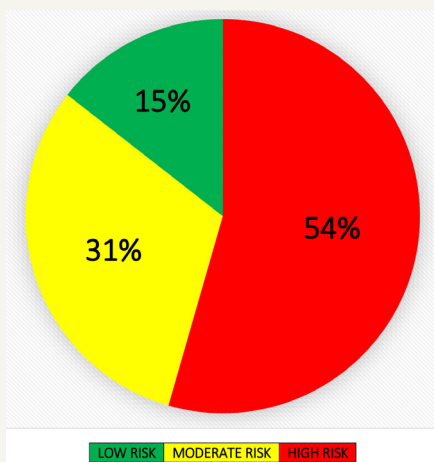
These 82 stocks accounted for 13 percent of the volume of the global catch.

Number of Stocks/Species Groups at-risk of IUU Fishing by Expolitation Status



Of the overexploited stocks, 54 percent were at high risk of IUU fishing, 31 percent were at moderate risk, and 15 percent were at low risk for IUU fishing.

Overexpolited Stocks, Risk of IUU Fish



Of the fully exploited stocks, 54 percent were at high risk to IUU fishing, 31 percent were at moderate risk, and 15 percent were at low risk.

NOTES ON ESTIMATES OF IUU FISHING

The 2009 Agnew et al. study presents comprehensive estimates of IUU for most species groups and Ocean areas. However, a few newer studies have presented more recent IUU estimates that are either higher than those in the Agnew et al. study or cover species groups and Ocean areas that the Agnew et al. study did not include.

Examples of where recent estimates suggest higher levels of IUU for a species groups (tunas) and additional information on estimates of IUU for species groups (sharks) and Ocean areas (the Mediterranean) not included in the Agnew et al. study are provided below. Additionally, the final note presented below examines the relative risk of IUU for fish products imported into the U.S. based solely on estimates of IUU for the species group.

Tuna

While the Agnew et al. study provides a relatively low estimate for tunas and billfish, more recent research and evidence suggests many tuna fisheries are subject to significantly higher levels of IUU fishing.

An analysis of the supply chain and fishing of tunas showed that tuna catches, particularly those from the Indian Ocean, are subject to rates of IUU fishing between 20 and 40 percent.^{vii} Much of this tuna ends up in the United States. The following table provides an estimate of illegal and unreported tuna catches from six of the largest exporters of tuna into the U.S. from 2011:

Estimated Illegal and Unreported Catches for Tuna Products Exported in 2011 from the Top 10 Countries Exporting Wild-Catches to US (in MT and percent by weight)^{viii}

Country	IU catches range by Product (Estimated % for Tuna)	Product	Catch Exported to the U.S. in 2011 (in MT)	IU Catches	
				Estimated % for Top 3 Products Exported to the U.S. by Each Country (in MT)	
				Lower Limit	Upper Limit
Thailand	25-40%	Tuna	128,381	32,095	51,352
Indonesia	20-35%	Tuna	19,443	3889	6805
Ecuador	10-15%	Tuna	21,510	2151	3226
Vietnam	25-35%	Tuna	24,513	6128	8579
Philippines	20-32%	Tuna	30,931	6186	9898
Mexico	15-25%	Tuna	4213	632	1053
Total			228,991	51,081	80,913

Indeed, tunas are recognized to be “at risk” of IUU fishing by the U.S. National Ocean Council (NOC) Working Group on IUU Fishing and Seafood Fraud for a number of reasons. The NOC states that:

There has been a history of violations in certain tuna fisheries and in certain regions. Further, harvesting, transshipment, and trade patterns for tunas can be complex, in particular for certain value-added products. While there are multilateral management and reporting measures in place for many stocks within the tuna species group, these management and reporting mechanisms vary in terms of information standards and requirements and do not all provide a complete catch documentation scheme. Tunas are also subject to complicated processing that includes comingling of species and transshipments.^{ix}

As noted in other studies, IUU fishing of tuna threatens proper management of stocks.^x Efforts to control catch through quotas, size limits and other restrictions are difficult to enforce when there is excess fishing capacity and tuna processing facilities that demand increasing amounts of raw material. These pressures add to the incentives for illegal and unreported fishing. Illegal tuna fishing in the Indian and Pacific Oceans, driven by demand in the fresh and frozen market, is facilitated by a lack of seafood traceability when supplies are consolidated during trans-shipping at sea.^{xi} The strong demand for tuna encourages brokers to combine supplies from different origins, leading to shipments consisting of different species fished by both legal and illegal operators.^{xii} The more recent analyses of IUU fishing for tunas suggest that the lower estimates provided in the Agnew study of 2009 are serious underestimates for the level of IUU fishing on tunas. As a result, while the WWF analysis ranks tunas as “low risk” to IUU based on the Agnew estimates, more recent information suggests that tunas should be considered at “high risk” of IUU.

Sharks

The Agnew et al. study does not provide estimates of IUU fishing for sharks. There is, however, substantial information and research suggesting that sharks experience high levels of IUU fishing, primarily for their fins. An earlier report by TRAFFIC, the wildlife trade monitoring network, found that the most frequently cited species taken in illegal shark fishing are hammerhead sharks (*Sphyrna* spp.) and silky sharks (*Carcharhinus falciformis*).^{xiii}

The practice of finning, in which the body of the shark is discarded at sea after the fins have been removed, is regulated in the Regional Fisheries Management Organizations (RFMOs), and prohibited in several countries, including in the waters of Costa Rica, Panama and Colombia where hammerhead species are caught in significant numbers.^{xiv} All of these countries were recently cited by the U.S. in the most recent report to Congress on IUU fishing for illegal catches of sharks^{xv}. “Hotspots” of IUU fishing for sharks have been identified in the Western and Central Pacific Ocean, the Indian Ocean, and off the coasts of Central and South America, but IUU fishing of sharks has been found in every ocean basin where fishing for sharks occurs.^{xvi}

Despite the absence of estimates for sharks in the Agnew 2009 study, there is a strong evidence that IUU fishing for sharks is a significant proportion of the global shark catch. One study noted that up to 73 million sharks are killed annually for their fins, with the practice of finning accounting for overwhelming majority of the total catch.^{xvii} The significant levels of illegal catches for sharks for their fins suggest that while the Agnew et al. study did not provide an estimate of IUU for the species group, actual IUU fishing of sharks is high.

The Mediterranean

Estimates for IUU fishing in the Mediterranean and Black Sea Ocean Basins are also not provided in the Agnew 2009 study. While the categorization for risk to IUU for species is based on the estimates for the species groups solely, there have been other studies analyzing IUU fishing in the region. One estimate suggests that lost catches in the Mediterranean amount to an average of 825 million euros a year – equivalent to about 15 percent of the total fishery value and more than 30 percent of the value of the fisheries considered.^{xviii} Regional fish stock models suggest that IUU fishing is preventing the recovery of depleted stocks and keeping fisheries locked in low-value states.^{xix} Illegal driftnet fishing has become a highly organized activity in some Mediterranean countries (i.e. Algeria, Italy, Tunisia, Albania) and total lost stocks (because of stock depletion or prevention of stock recovery) as a result of IUU fishing in the area has been estimated to cost almost 9 billion euros.^{xx}

Species targeted by IUU fishing in the Mediterranean include Bluefin tuna, swordfish, shrimps and clams, while in the Black Sea targets include turbot and sturgeon.^{xxi} A significant amount of unreported landings in the region has also been found, undermining stock assessments.^{xxii} A study on IUU in the region found IUU fishing levels of 30-40 percent of total catch to be commonplace, with 40-50 percent of the catch of tunas and swordfish in the Mediterranean estimated to be from IUU fishing.^{xxiii}

U.S. Imports

The United States imports more than 100 different wild-caught species which represent more than 400 diverse wild-caught products (from tuna that is fresh/frozen or tuna that is canned to anchovies that are canned, and various products in between – see Appendix 4 for list of wild-caught products imported into the U.S. for 2014).^{xxiv} However, because requirements to distinguish whether the product was wild-caught or farmed do not exist for certain products, it is difficult to say exactly how many wild-caught species/products are imported.

Additionally, because requirements for documenting origin of catch and other essential information (identity of specific species, information needed to establish legality, etc.) are absent, it is impossible to say that a product exported from a country was actually caught in the jurisdiction of that country's EEZ or even in a location in close proximity. As a result, it is challenging to determine the level of IUU risk based – as above – on both the level of IUU fishing for a species and for the ocean basin where that species was caught.

If only the average estimated IUU for the stocks/species groups is applied to U.S. imports, the criteria for high risk remains where the estimated average IUU is greater than the global average (18%); moderate risk remains where the estimated average IUU is between 10 and 18 percent or where the level of IUU was unknown; and, low risk remains where the estimated average IUU is less than 10 percent. For imports in 2014, not including shrimp (of which about 10 percent of shrimp imports have been estimated to be wild-caught)^{xxv} then a rough distinction of wild-caught imports suggests that:

- About 43 percent of the volume of wild-caught imports (~ 210 products), representing almost 492,000 MT, valued at \$3.7 billion would be categorized as high risk.
- About 28 percent of the volume of wild-caught imports (~ 130 products), representing almost 327,000 MT, valued at \$3.06 billion would be categorized as moderate risk.
- About 29 percent of the volume of wild-caught imports (~ 80 products), representing 329,000 MT, valued at \$1.87 billion would be categorized as low risk. (see Appendix 4 for list of wild-caught imports and categories of risk.)

U.S. customs codes and the harmonized tariff schedule do not provide species specific codes for most products that are imported. Combined with the lack of requirements to detail the location of the catch, it is not possible to say, for example, that the U.S. imports Chilean jack mackerel (*Trachurus murphyi*) caught from the Southeast Pacific without additional information. The U.S. does, however, import “Jack Horse Mackerel” in fresh and frozen forms and “Mackerel” in fresh, frozen, dried, salted, smoked and other prepared forms. If the results of the above analysis are evaluated through the lens of the species/products that the U.S. imports, then a rough approximation suggests that the U.S. may be importing products derived from more than 50 percent (27) of the 50 stocks or species groups that are categorized as high risk of IUU and are also assessed as overexploited. This includes:

- Chilean jack mackerel from the Southeast Pacific (FAO Area 87)
- Argentine hake from the Southwest Atlantic (FAO Area 41)
- Round sardinella from the Eastern Central Atlantic (FAO Area 34)
- Jack and horse mackerels from the Eastern Central Atlantic (FAO Area 34)
- South Pacific hake from the Southeast Pacific (FAO Area 87)
- Brazilian sardinella from the Southwest Atlantic (FAO Area 41)
- Octopuses, etc. NEI from the Eastern Central Atlantic (FAO Area 34)
- Butterfishes, pomfrets NEI from the Western Indian Ocean (FAO Area 51)
- Penaeus shrimps NEI from the Western Central Pacific (FAO Area 71)
- Snappers from the Western Central Atlantic (FAO Area 31)
- Groupers from the Western Central Atlantic (FAO Area 31)
- Red mullet from the Mediterranean and Black Sea (FAO Area 37)

A host of others have also been identified (see Appendix 5).

CONCLUSION

It is clear from this analysis that almost all stocks are subject to high or moderate levels of IUU fishing that are threatening the sustainable management of their fisheries. While the inherent nature of the activity, being illegal, and the dearth of recent data (and data overall) on the extent of IUU fishing make assessing the risk challenging, there is enough known to warrant strong action to combat IUU fishing. The lack of data also highlights the need for more data.

In general, species identifications are inadequate for determining IUU risk. Rather, risk to IUU fishing should be considered in terms of the conditions surrounding the fishing activity itself, supply chain vulnerability, and basic product substitutability. Products that originate from poorly managed fisheries, with weak enforcement, monitoring, control, and surveillance (MCS), are processed in countries with lax oversight, and travel through supply chains that are not secure are inherently at higher risk of IUU fishing. The widespread nature of the IUU problem, and the multiple factors that contribute to its prevalence, make it very difficult to assess IUU risk without access to a minimum set of basic information about all fish that are caught. The estimates of IUU provided in the Agnew et al. study however are the most comprehensive estimates of IUU for species groups and ocean basins that are currently published. As such they provide an instructive glimpse to identify which stocks might be at greater risk of IUU fishing.

For market states that are major consumers of fish, requiring basic information on the legality of the catch and traceability standards will help to combat IUU fishing by providing an incentive for fisheries to ensure their catches are legal in order to gain market access. The EU has already taken steps to require that all fish imported into the Common Market provide catch documentation establishing the legal origin of the product as a precondition for market access. The U.S. is now in discussions on how to close its market to IUU fish products as a result of President Obama's directive to establish a Task Force to address IUU fishing. The U.S. should follow the lead of the EU, and require basic information on the legal origin of catches for imports in order to make determinations of a product's legality.

With more than 85 percent of stocks at high or moderate risk of IUU fishing, and with the damage that IUU fishing does to fisheries, marine ecosystems, honest fishermen, and coastal communities, it is clear that significant action needs to be taken to more effectively combat illegal fishing activities. By requiring essential information on the legal origin of catches for all species that enter trade, market states can be more effective in helping to prevent IUU fishing.



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CITATIONS

- i Agnew D, Pearce J, Pramod G, Peatman T, Watson R, et al. 2009. Estimating the Worldwide Extent of Illegal Fishing. *PLoS ONE* 4(2): e4570. Doi:10.1371/journal.pone.0004570. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0004570>
- ii The ISSCAAP code is assigned according to the FAO 'International Standard Statistical Classification for Aquatic Animals and Plants' (ISSCAAP) which divides commercial species into 50 groups on the basis of their taxonomic, ecological and economic characteristics. International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP). ftp://ftp.fao.org/FI/STAT/DATA/ASFIS_structure.pdf
- iii Other attempts have been made to identify risk of overexploitation for marine species, particularly for species entering trade. One approach, undertaken by the UK's Joint Nature Conservation Committee and the NGO TRAFFIC utilized an FAO appraisal of the suitability of CITES criteria for listing commercially-exploited aquatic species and characterized risk in terms of 1) a species vulnerability, or inability to sustain levels of exploitation that it is subjected to; 2) value, related to the profitability of the species' exploitation; and 3) violability, related to the extent to which conventional management measures may be circumvented. These risk factors based on 'bio-ecological risk', 'economic risk', and 'compliance risk' found that 34 species were at high risk of overexploitation, 12 species at potentially high risk, and eight had high violability scores. These attempts, however, do not provide a picture of risk related solely to IUU. They can though, help inform to what degree vulnerable species at greater risk to IUU may be facing additional threats to overexploitation.
- iv Pramod G, Nakamura N, Pitcher T, Delagran L. 2014. Estimates of illegal and unreported fish in seafood imports to the USA. *Marine Policy* 48 (2014): 102-113. <http://www.sciencedirect.com/science/article/pii/S0308597X14000918>
- v Global catch info for 2009. FAO. 2011. FAO Fisheries and Aquaculture Technical Paper 569. Review of the state of world marine fishery resources. Stocks. Part D: Marine Resources Table.
- vi FAO did not provide information for these stocks, either because their status is unknown or sufficient data does not exist.
- vii Pramod et al. 2014.
- viii Ibid.
- ix NOAA. FR Notice August 2015. Presidential Task Force on Combatting Illegal Unreported and Unregulated (IUU) Fishing and Seafood Fraud Action Plan. http://www.nmfs.noaa.gov/ia/iuu/at_risk_iuu_notice.pdf
- x IUU in tuna fisheries has been noted in the following papers: Gillett R. Bycatch in small-scale tuna fisheries: a global study. FAO fisheries and aquaculture technical paper. Rome: FAO; 2011. p. 560. Ingles J, Flores J, Mustohof I, Mous P. Getting off the hook – reforming the tuna fisheries of Indonesia. WWF – Coral triangle initiative; 2008. The Fiji Times. Crackdown on illegal tuna fishing. (<http://www.fjtimes.com/story.aspx?id=223236>); January 23, 2013. Press article. Numerous French vessels denounced for under-reporting tuna catches. Fish information and services. <http://www.fis.com/fis/worldnews/worldnews.asp?mothyear=3-2011&day=15&id=41174&1=e&country=o&special=&ndb+1&df=o>. Indonesian Tuna Fishery Improvement Project. Sustainable Fisheries Partnership. <http://www.sustainablefish.org/fisheries-improvement/tuna/indonesia-yellowfin-tuna>. Ardill D, Itano D, Gillett R. A review of bycatch and discard issues in Indian Ocean tuna fisheries. Indian Ocean Commission: smartfish working papers. <http://iotc.org/files/proceedings/2012/wpeb/IOTC-2012-WPEB08-INF20.pdf> Garcia B. Tuna industry still thriving despite obstacles. Sunstar News, Philippines. <http://www.sunstar.com.ph/davao/bU.S.iness/2012/11/19/tuna-industry-still-thriving-despite-obstacles-254078>
- xi Pramod et al.
- xii Ibid.
- xiii Lack M and Sant G. April 2008. Illegal, unreported and unregulated shark catch: A review of current knowledge and action. TRAFFIC. http://www.traffic.org/species-reports/traffic_species_fish30.pdf
- xiv Ibid.
- xv NOAA. February 2015. Improving International Fisheries Management: Report to Congress. http://www.nmfs.noaa.gov/ia/iuu/msra_page/2015noaa reptcongress.pdf
- xvi Lack and Sant. 2008
- xvii Clarke S, McAllister M, Milner-Gulland E, Kirkwood G, Michielsens C, Agnew D, Pikitch E, Nakano H, Shivji M. 2006. Global estimates of shark catches using trade records from commercial markets. *Ecology Letters*, 9:1115-1126. Doi: 10.1111/j.1461-0248.2006.00968.x <http://onlinelibrary.wiley.com/doi/10.1111/j.1461-0248.2006.00968.x/full>
- xviii Economics for the Environment Consultancy Ltd. (Eftec). November 2008. Costs of illegal, unreported, and unregulated (IUU) fishing in EU fisheries. http://www.fishsec.org/downloads/1226500267_66037.pdf
- xix Ibid.
- xx Ibid.
- xxi FAO. April 22-24, 2015. Compliance Committee: Working Group on Illegal, unreported and unregulated (IUU) fishing in the GFCM area. Marrakech, Morocco. <http://www.fao.org/3/a-ax805e.pdf>
- xxii Ibid.
- xxiii Eftec. 2008.
- xxiv NOAA Office of Science and Technology. Commercial Fisheries Statistics. Foreign Trade Data. Accessed July 1, 2015. <http://www.st.nmfs.noaa.gov/commercial-fisheries/foreign-trade/applications/annual-product-by-summarized-countryassociation>
- xxv Pers. Comm. with NOAA.

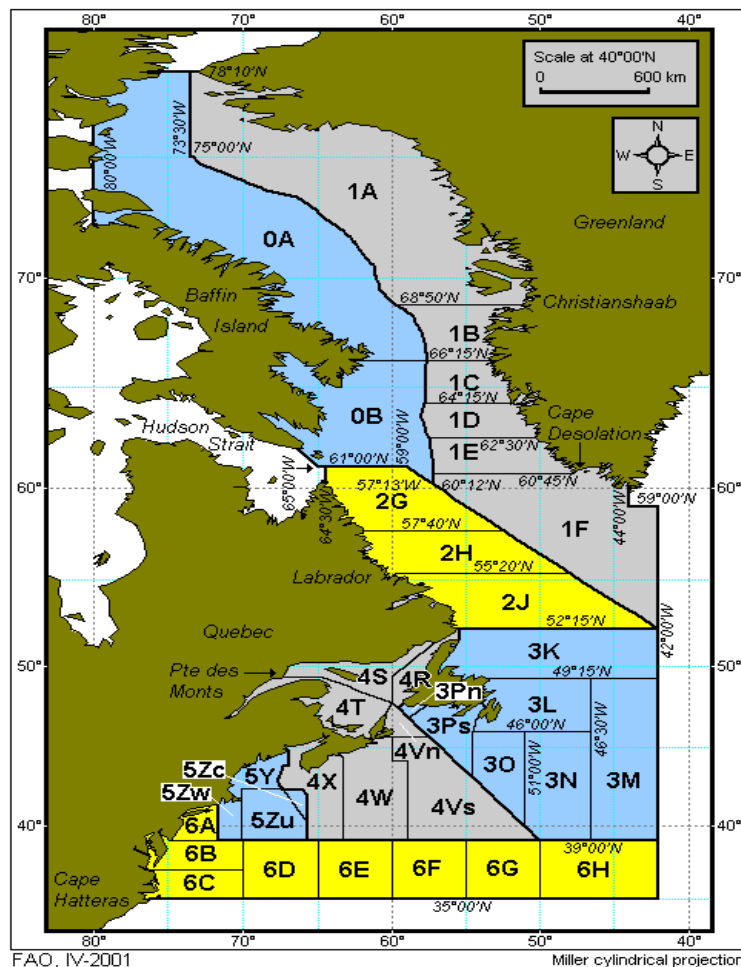
OCEAN BASIN PROFILES

Stock status information, percentage of global catch, and major fishing nation information presented below from FAO Technical Paper 569.ⁱ See Appendix 3 for description of boundaries of FAO Areas for the corresponding ocean basins.

The assessments for the Ocean Basin Profiles are for all of the stocks within the area assessed by the FAO, excluding tunas. Tuna stocks were aggregated by entire ocean area (i.e for the Atlantic, Pacific, and Indian Oceans respectively) and not by individual FAO Ocean Area. As a result, it was not possible to identify the specific FAO Ocean Area for the migratory tuna stocks and make an assessment by FAO Ocean Area.

See Appendix 3 for description of boundaries of FAO Areas for the corresponding ocean basins.

Northwest Atlantic Ocean (FAO Area 21)



This area includes portions of the EEZs of the US, Canada, and Greenland as well as high seas under the jurisdiction of the Northwest Atlantic Fisheries Organization (NAFO) RFMO.

37 stocks or species groups have been assessed by the FAO for this region.

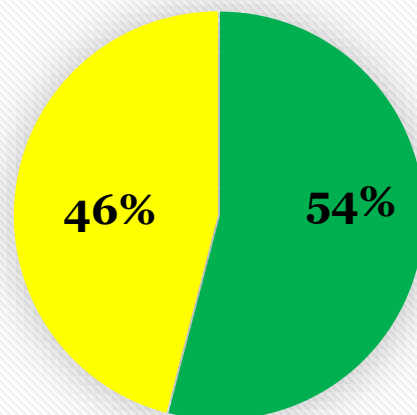
- No stocks or species groups were categorized as experiencing high levels of IUU in the region.
- 17 stocks or species groups (46%) were categorized as experiencing moderate levels of IUU in this region.
 - 3 stocks or species groups were assessed as overexploited.
 - 10 stocks or species groups were assessed as fully exploited.
 - 3 stocks or species groups had an unknown status.
 - 1 stock or species group was assessed as non-fully exploited.
- 20 stocks or species groups (54%) were categorized as experiencing low levels of IUU in this region.
 - 2 stocks or species groups were assessed as overexploited.
 - 12 stocks or species groups were assessed as fully exploited.
 - 6 stocks or species groups had an unknown status.

About 2% of the global catch is from this region (excluding tuna catches).

The major fishing nations in this region include:

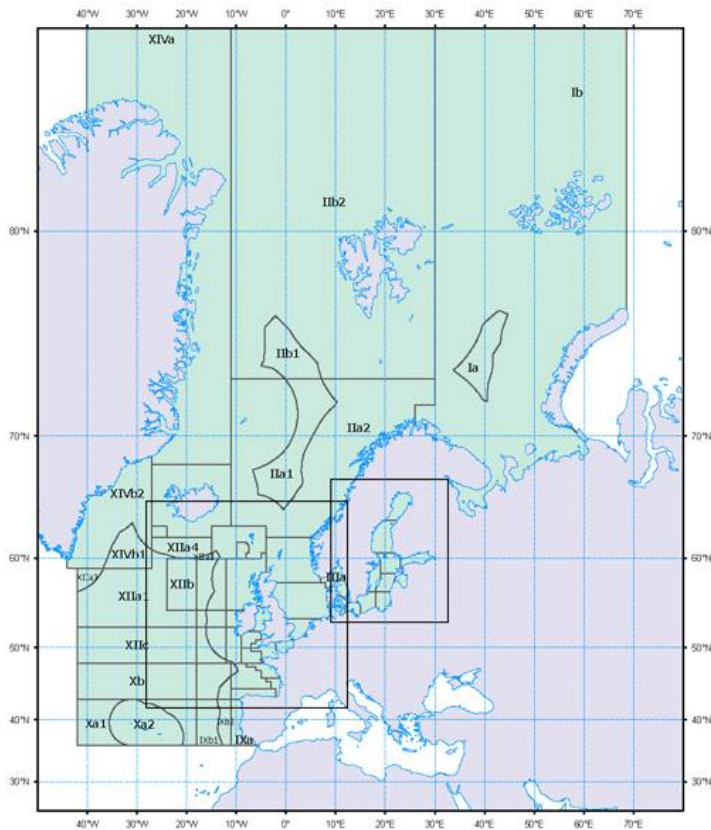
- US
- Spain
- Portugal
- Canada
- Faroe Islands
- Russia
- Greenland
- Saint Pierre and Miquelon (France)
- Norway
- Estonia

Northwest Atlantic (FAO Area 21) - Risk of IUU



LOW RISK MODERATE RISK HIGH RISK

Northeast Atlantic Ocean (FAO Area 27)



This area includes portions of the EEZs of the Greenland, Iceland, the EU, Norway and Russia and high seas areas, including areas managed within the International Council for the Exploration of the Sea (ICES).

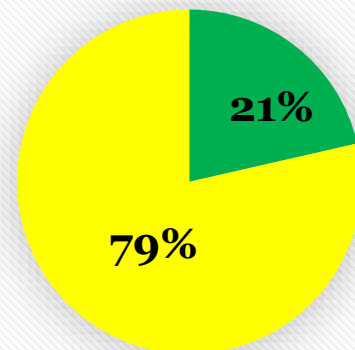
28 stocks or species groups have been assessed by the FAO for this region.

- 22 stocks or species groups (79%) were categorized as experiencing moderate levels of IUU in this region.
 - 6 stocks or species groups were assessed as overexploited.
 - 12 stocks or species groups were assessed as fully exploited.
 - 2 stocks or species groups had an unknown status.
 - 2 stocks or species groups were assessed as non-fully/under-exploited.
- 6 stocks or species groups (21%) were categorized as experiencing low levels of IUU in this region.
 - 2 stocks or species groups were assessed as overexploited.
 - 4 stocks or species groups were assessed as fully exploited.
- No stocks or species groups were categorized as experiencing high levels of IUU in the region.

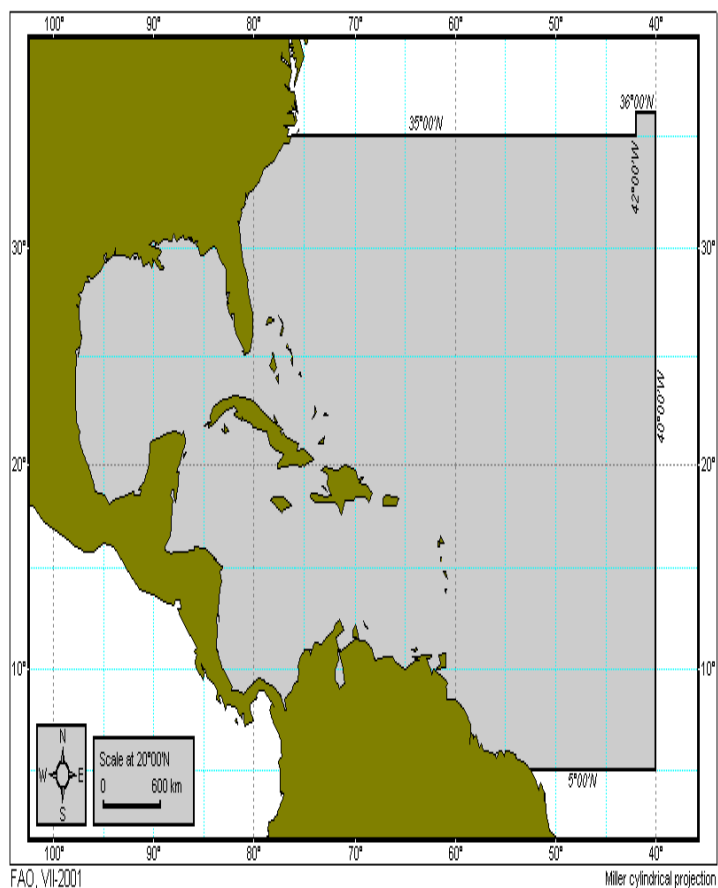
About 11% of the global catch is from this region.

The major fishing nations in this region include:

- Sweden
- Russia
- Finland
- Denmark
- UK
- Netherlands
- Iceland
- Russia
- Norway
- Faroe Islands
- Germany
- France
- Ireland
- Spain
- Lithuania
- Poland
- Latvia
- Estonia



Western Central Atlantic (FAO Area 31)



This area includes portions of or the entire EEZs of the US, Mexico, Cuba, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname and other Caribbean nations and high seas areas, including areas managed under the International Commission for the Conservation of Atlantic Tunas (ICCAT) RFMO.

38 stocks or species groups have been assessed by the FAO for this region.

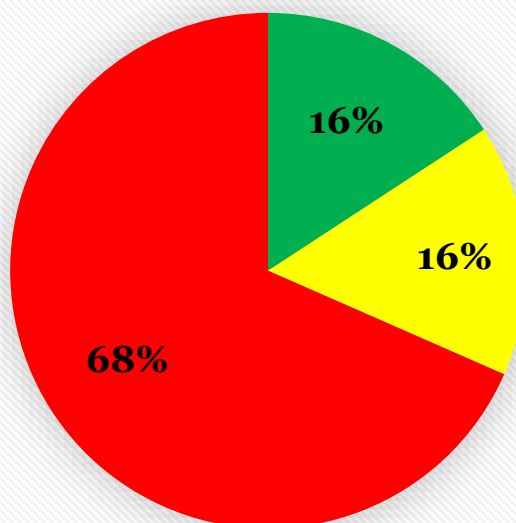
- 26 stocks or species groups (68%) were categorized as experiencing high levels of IUU in the region.
 - 5 stocks or species groups were assessed as overexploited.
 - 8 stocks or species groups were assessed as fully exploited.
 - 12 stocks or species groups had an unknown status.
 - 1 stock or species group was assessed as non-fully/under-exploited.
- 6 stocks or species groups (16%) were categorized as experiencing moderate levels of IUU in this region.
 - 1 stock or species group was assessed as fully exploited.
 - 5 stocks or species groups had an unknown status.
- 6 stocks or species groups (16%) were categorized as experiencing low levels of IUU in this region.
 - 1 stock or species group was assessed as overexploited.
 - 5 stocks or species groups had an unknown status.

About 1% of the global catch is from this region (excluding tuna catches).

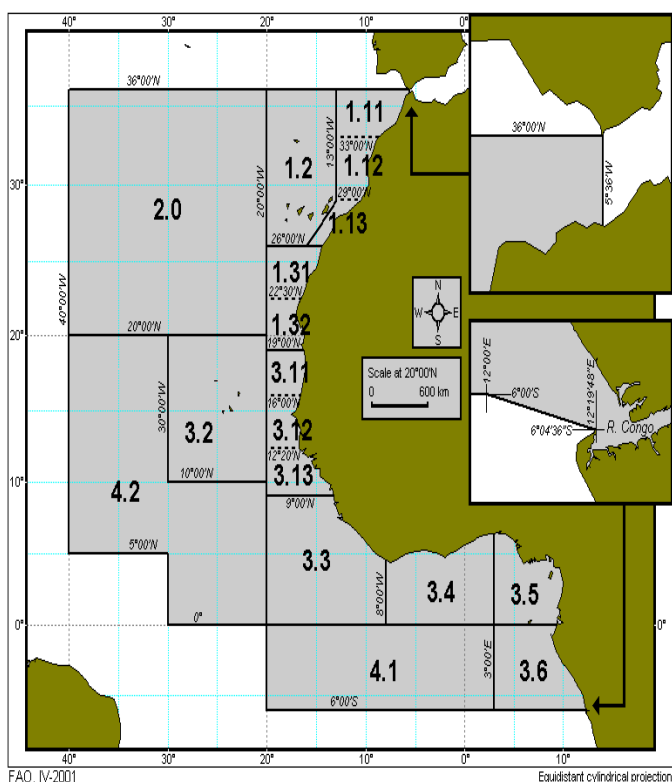
The major fishing nations in this region include:

- Venezuela
- Mexico
- US
- Dominican Republic
- Cuba
- Colombia
- French Guiana
- Trinidad and Tobago
- Saint Vincent and Grenadines
- Guyana
- Grenada
- Nicaragua
- Honduras
- Bahamas
- Suriname
- Jamaica
- Belize

Western Central Atlantic (FAO Area 31) - Risk of IUU



Eastern Central Atlantic (FAO Area 34)



This area includes portions of or the entire EEZs of Morocco, Western Sahara, Mauritania, Senegal, Cape Verde, the Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Sao Tome and Principe, Gabon and Congo and high seas areas, including areas managed under the International Commission for the Conservation of Atlantic Tunas (ICCAT) RFMO.

52 stocks or species groups have been assessed by the FAO for this region.

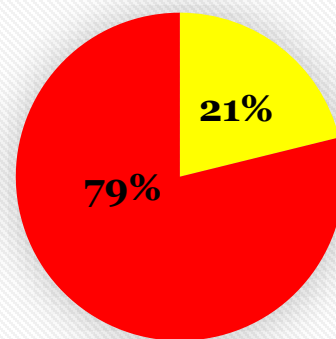
- 41 stocks or species groups (79%) were categorized as experiencing high levels of IUU in the region.
 - 11 stocks or species groups were assessed as overexploited.
 - 12 stocks or species groups were assessed as fully exploited.
 - 17 stocks or species groups had an unknown status.
 - 1 stock or species group was assessed as non-fully/under-exploited.
- 11 stocks or species groups (21%) were categorized as experiencing moderate levels of IUU in this region.
 - 4 stocks or species groups were assessed as overexploited.
 - 7 stocks or species groups had an unknown status.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

About 3% of the global catch is from this region (excluding tuna catches).

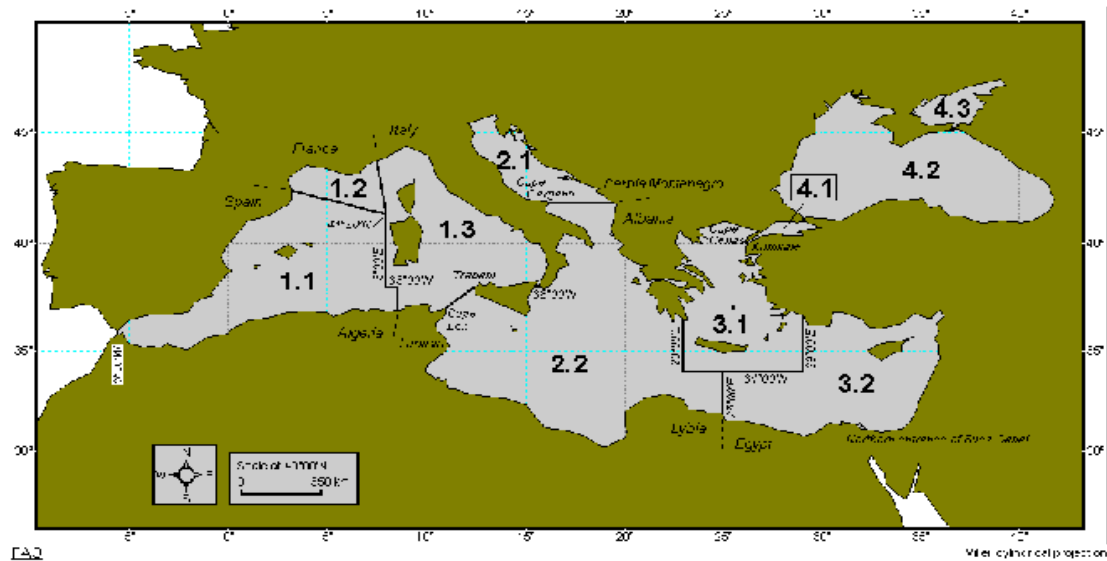
The major fishing nations in this region include:

- | | |
|----------------|------------------------------------|
| • Portugal | • Togo |
| • Morocco | • Cote d'Ivoire |
| • Italy | • Gambia |
| • Greece | • Gabon |
| • Spain | • Sao Tome and Principe |
| • Mauritania | • Democratic Republic of the Congo |
| • Guinea | • Cameroon |
| • Sierra Leone | • Russia |
| • Nigeria | • Netherlands |
| • South Korea | • Lithuania |
| • Ghana | • Cape Verde |
| • Senegal | • Taiwan |
| • Poland | • Japan |
| • Latvia | • Benin |

Eastern Central Atlantic (FAO Area 34) - Risk of IUU



Mediterranean and Black Sea (FAO Area 37)



This area includes portions of or the entire EEZs of Spain, France, Italy, Malta, Cyprus, Croatia, Montenegro, Albania, Greece, Bulgaria, Romania, Morocco, Algeria, Tunisia, Libya, Egypt, Israel, Jordan, Lebanon, Syria, Turkey, Russia, Georgia, Ukraine and high seas areas, including areas managed under the General Fisheries Commission for the Mediterranean (GFCM) and the International Commission for the Conservation of Atlantic Tunas (ICCAT) RFMOs.

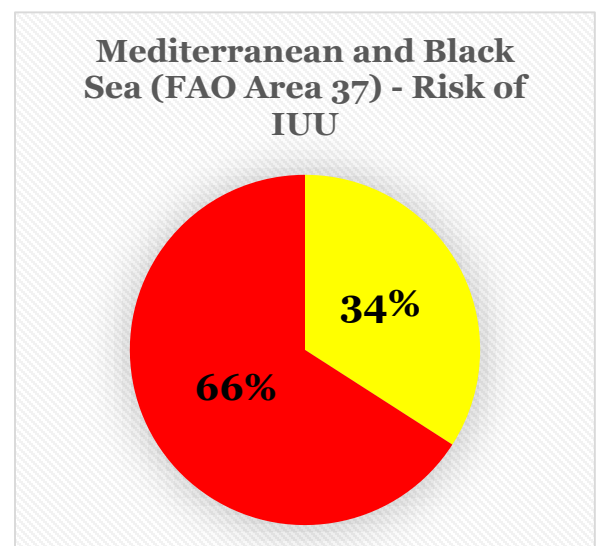
44 stocks or species groups have been assessed by the FAO for this region.

- 29 stocks or species groups (66%) were categorized as experiencing high levels of IUU in the region.
 - 9 stocks or species groups were assessed as overexploited.
 - 6 stocks or species groups were assessed as fully exploited.
 - 11 stocks or species groups had an unknown status.
 - 3 stocks or species groups were assessed as non-fully/under-exploited.
- 15 stocks or species groups (34%) were categorized as experiencing moderate levels of IUU in this region.
 - 3 stocks or species groups were assessed as overexploited.
 - 2 stocks or species groups were assessed as fully exploited.
 - 9 stocks or species groups had an unknown status.
 - 1 stock or species group was assessed as non-fully/under-exploited.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

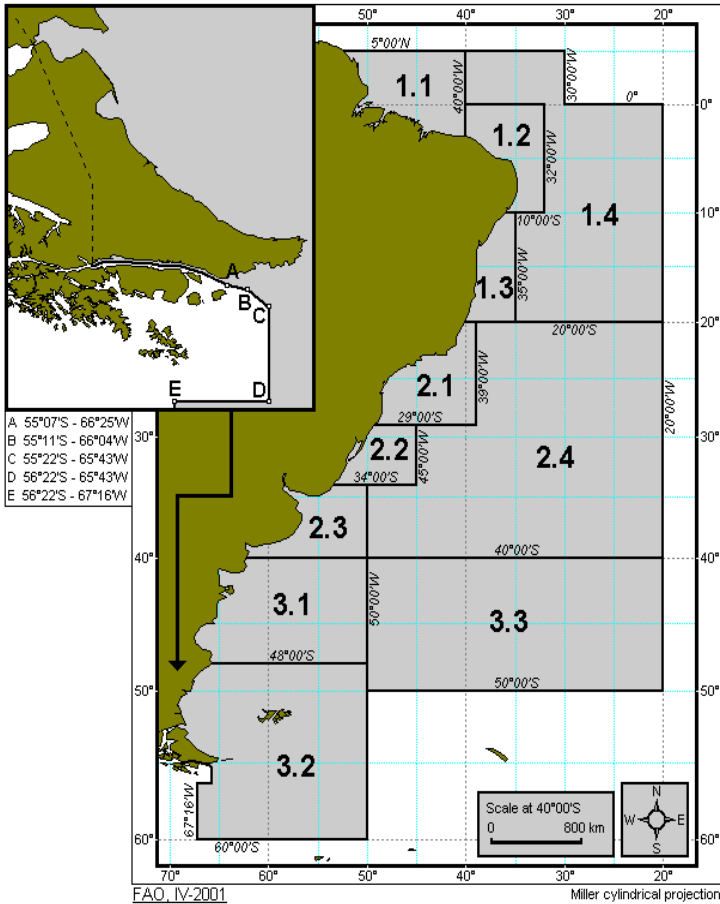
About 2% of the global catch is from this region (excluding tuna catches).

The major fishing nations in this region include:

- | | |
|------------|--------------|
| • Ukraine | • Algeria |
| • Russia | • Morocco |
| • Romania | • Libya |
| • Bulgaria | • Tunisia |
| • Turkey | • Montenegro |
| • Italy | • Lebanon |
| • Greece | • Israel |
| • Egypt | • Georgia |
| • Spain | • Croatia |
| • France | |



Southwest Atlantic (FAO Area 41)



This area includes portions of or the entire EEZs of Brazil, Uruguay, Argentina, and the Falkland Islands and high seas areas, including areas managed under the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) RFMO.

30 stocks or species groups have been assessed by the FAO for this region.

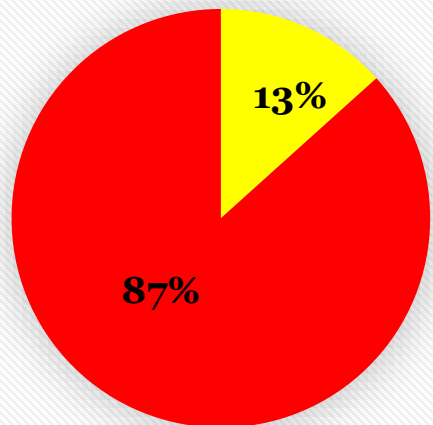
- 26 stocks or species groups (87%) were categorized as experiencing high levels of IUU in the region.
 - 5 stocks or species groups were assessed as overexploited.
 - 9 stocks or species groups were assessed as fully exploited.
 - 10 stocks or species groups had an unknown status.
 - 2 stocks or species groups were assessed as non-fully/under-exploited.
- 4 stocks or species groups (13%) were categorized as experiencing moderate levels of IUU in this region.
 - 4 stocks or species groups had an unknown status.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

About 2% of the global catch is from this region (excluding tuna catches).

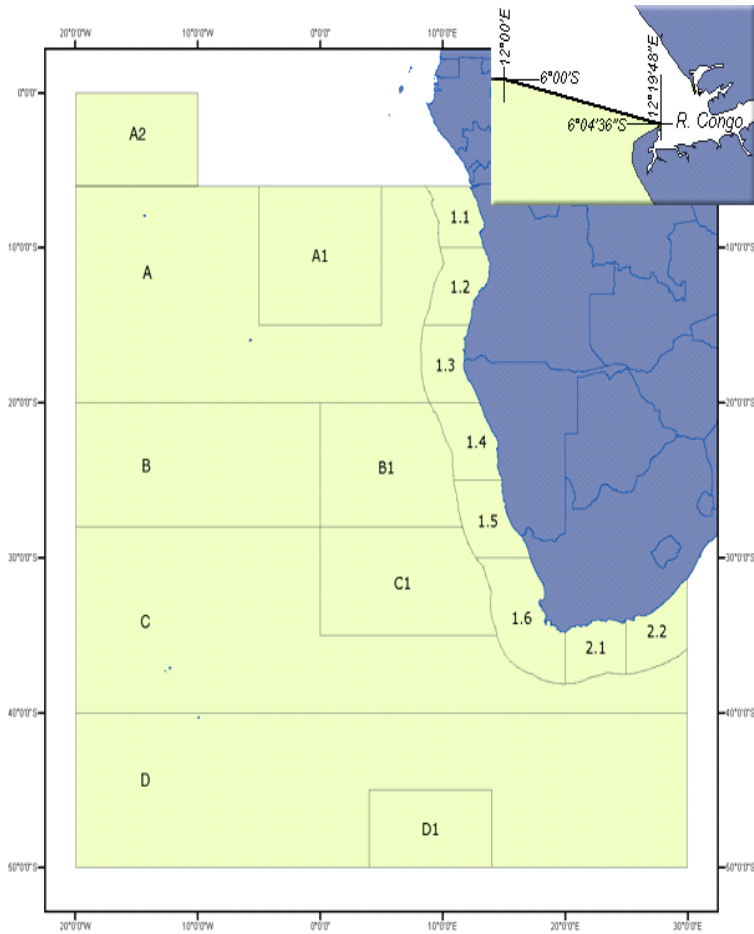
The major fishing nations in this region include:

- Uruguay
- Spain
- Falkland Islands
- Argentina
- Japan
- Brazil
- South Korea
- Taiwan
- China
- UK

Southwest Atlantic (FAO Area 41) - Risk of IUU



Southeast Atlantic (FAO Area 47)



This area includes portions of or the entire EEZs of Angola, Namibia, and South Africa and high seas areas, including areas managed under the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) RFMO.

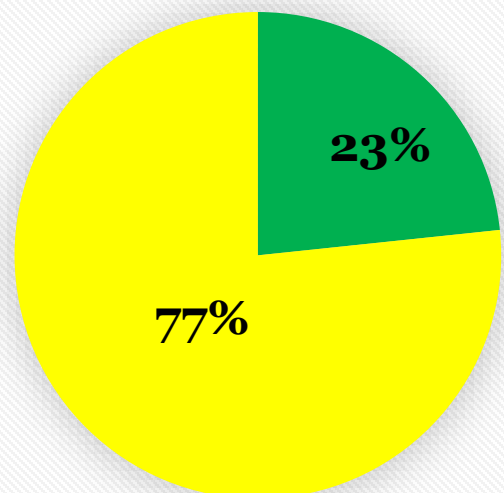
- 30 stocks or species groups have been assessed by the FAO for this region.
- No stocks or species groups were categorized as experiencing high levels of IUU in this region.
- 23 stocks or species groups (77%) were categorized as experiencing moderate levels of IUU in this region.
 - 7 stocks or species groups were assessed as overexploited.
 - 7 stocks or species groups were assessed as fully exploited.
 - 7 stocks or species groups had an unknown status.
 - 2 stocks or species groups were assessed as non-fully/under-exploited.
- 7 stocks or species groups (23%) were categorized as experiencing low levels of IUU in the region.
 - 2 stocks or species groups were assessed as overexploited.
 - 1 stock or species groups was assessed as fully exploited.
 - 4 stocks or species groups had an unknown status.

Less than 2% of the global catch is from this region (excluding tuna catches).

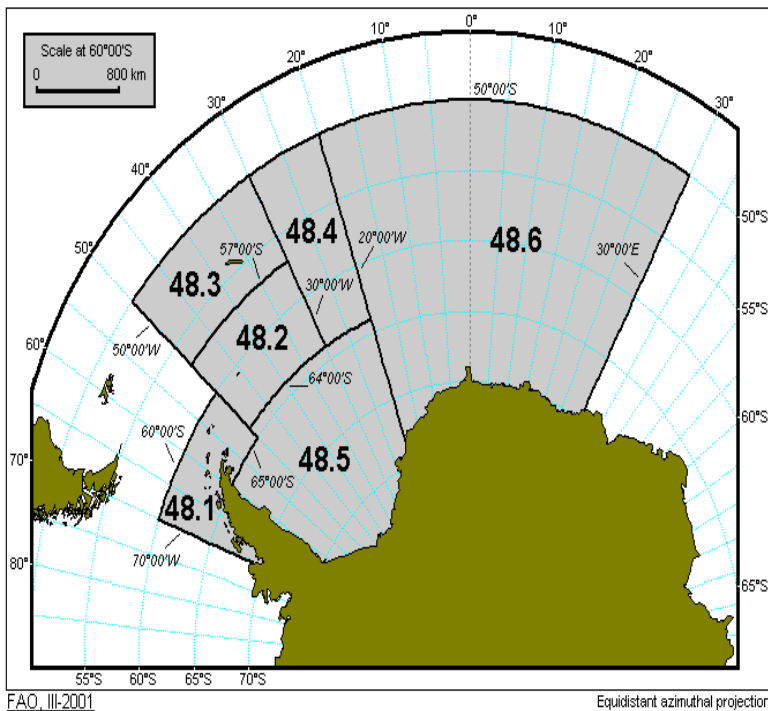
The major fishing nations in this region include:

- Spain
- South Africa
- Portugal
- Namibia
- Angola

Southeast Atlantic (FAO Area 47) - Risk of IUU



Southern Atlantic Ocean (FAO Area 48)



This area includes the high seas areas managed under the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) RFMO.

11 stocks or species groups have been assessed by the FAO for this region.

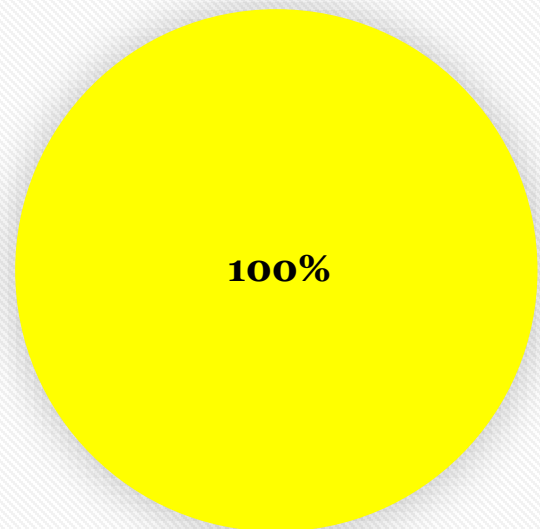
- No stocks or species groups were categorized as experiencing high levels of IUU in this region.
- All 11 stocks or species groups (100%) were categorized as experiencing moderate levels of IUU in this region.
 - 1 stock or species group was assessed as overexploited.
 - 1 stock or species group was assessed as fully exploited.
 - 7 stocks or species groups had an unknown status.
 - 2 stocks or species group was assessed as non-fully/under-exploited.
- No stocks or species groups were categorized as experiencing low levels of IUU in the region.

Less than 0.1% of the global catch is from this region.

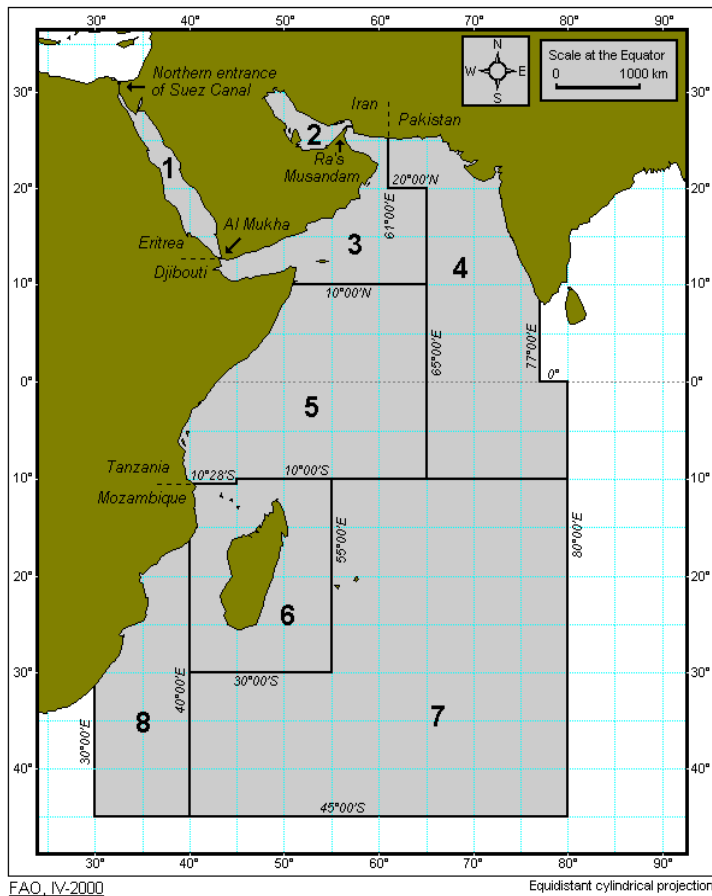
The major fishing nations in this region include:

- UK
- Spain
- New Zealand
- Chile
- Norway
- South Korea
- Russia
- Japan

Southern Atlantic Ocean (FAO Area 48) - Risk of IUU



Western Indian Ocean (FAO Area 51)



This area includes portions of or the entire EEZs of South Africa, Mozambique, Madagascar, Mauritius, Seychelles, Comoros, Maldives, Tanzania, Kenya, Somalia, Djibouti, Eritrea, Egypt, Yemen, Saudi Arabia, Kuwait, Oman, Bahrain, Qatar, UAE, Iraq, Iran, Pakistan, and India and high seas areas, including areas managed under the Indian Ocean Tuna Commission (IOTC) RFMO.

39 stocks or species groups have been assessed by the FAO for this region.

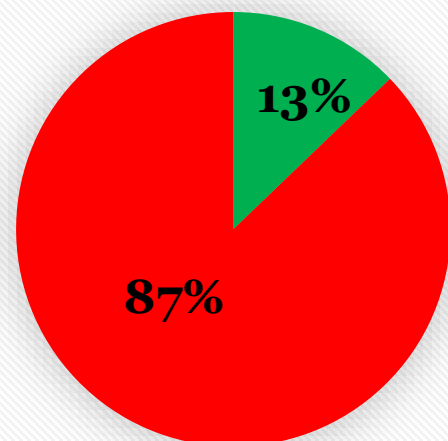
- 34 stocks or species groups (87%) were categorized as experiencing high levels of IUU in this region.
 - 3 stocks or species groups were assessed as overexploited.
 - 10 stocks or species groups were assessed as fully exploited.
 - 20 stocks or species groups had an unknown status.
 - 1 stock or species groups was assessed as non-fully/under-exploited.
- No stocks or species groups were categorized as experiencing moderate levels of IUU in this region.
- 5 stocks or species groups (13%) were categorized as experiencing low levels of IUU in the region.
 - 1 stock or species groups were assessed as fully exploited.
 - 4 stocks or species groups had an unknown status.

More than 4% of the global catch is from this region (excluding tuna catches).

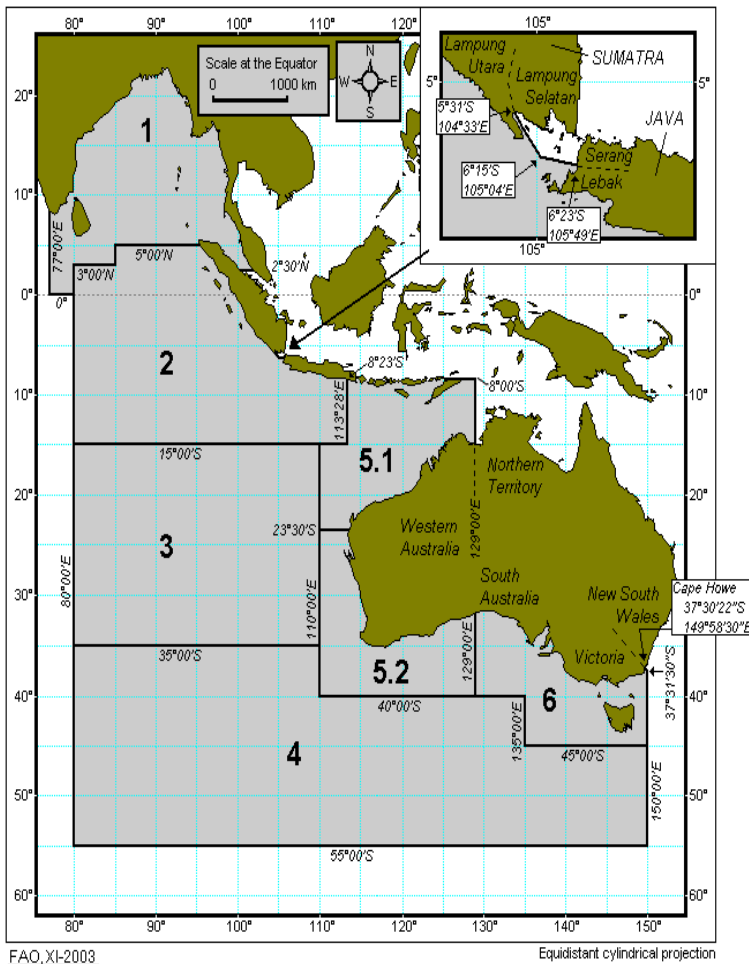
The major fishing nations in this region include:

- | | |
|----------------|-----------------------|
| • Pakistan | • Iraq |
| • India | • Yemen |
| • Oman | • Seychelles |
| • Iran | • South Korea |
| • UAE | • Kenya |
| • Saudi Arabia | • Comoros |
| • Qatar | • Tanzania (Zanzibar) |
| • Oman | • Maldives |
| • Eritrea | • South Africa |
| • Egypt | • Mozambique |

Western Indian Ocean (FAO Area 51) - Risk of IUU



Eastern Indian Ocean (FAO Area 57)



This area includes portions of or the entire EEZs of India, Sri Lanka, Bangladesh, Burma, Malaysia, Thailand, Indonesia, East Timor, Singapore, and Australia and high seas areas, including areas managed under the Indian Ocean Tuna Commission (IOTC) RFMO.

51 stocks or species groups have been assessed by the FAO for this region.

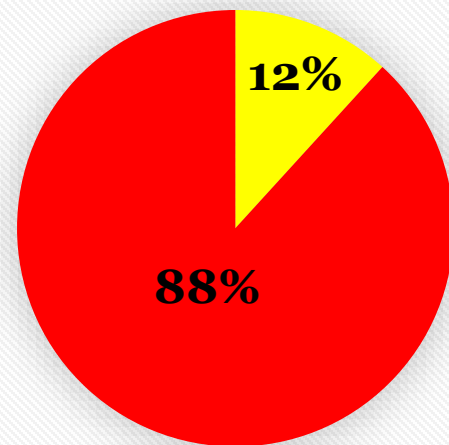
- 45 stocks or species groups (88%) were categorized as experiencing high levels of IUU in this region.
 - 8 stocks or species groups were assessed as overexploited.
 - 21 stocks or species groups were assessed as fully exploited.
 - 13 stocks or species groups had an unknown status.
 - 3 stocks or species groups were assessed as non-fully/under-exploited.
- 6 stocks or species groups (12%) were categorized as experiencing moderate levels of IUU in the region.
 - 2 stocks or species groups were assessed as fully exploited.
 - 1 stock or species groups had an unknown status.
 - 3 stocks or species groups were assessed as non-fully/under-exploited.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

More than 8% of the global catch is from this region (excluding tuna catches).

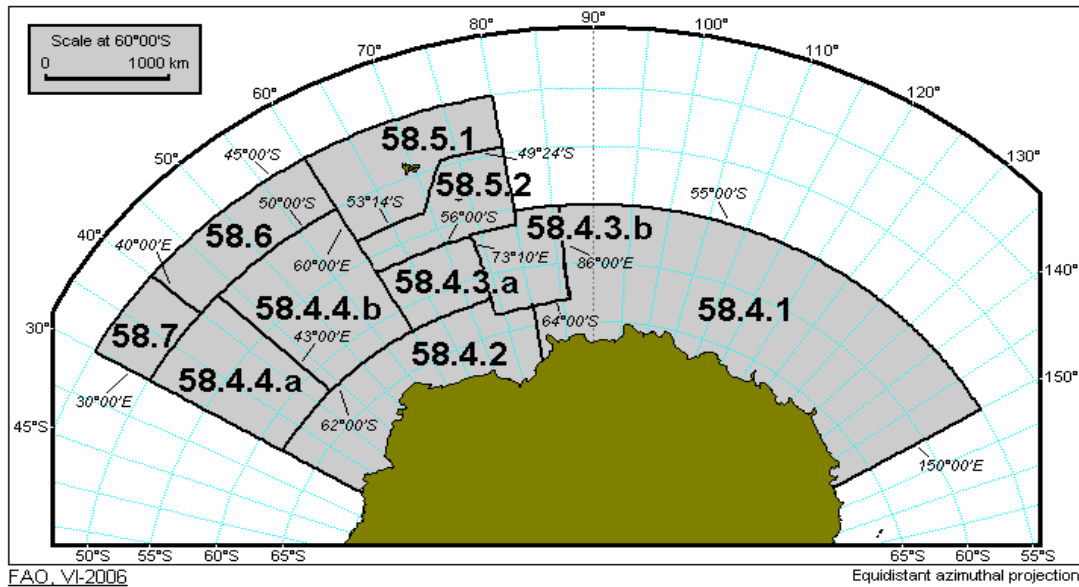
The major fishing nations in this region include:

- Malaysia
- Indonesia
- Bangladesh
- India
- Thailand
- Australia
- Sri Lanka
- East Timor
- Portugal
- Myanmar

Eastern Indian Ocean (FAO Area 57) - Risk of IUU



Southern Indian Ocean (FAO Area 58)



This area includes the high seas areas managed under the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) RFMO.

6 stocks or species groups have been assessed by the FAO for this region.

- No stocks or species groups were categorized as experiencing high levels of IUU in the region.
- All 6 stocks or species groups (100%) were categorized as experiencing moderate levels of IUU in this region.
 - 1 stock or species group was categorized as overexploited.
 - 1 stock or species group was categorized as fully exploited.
 - 3 stocks or species groups had an unknown status.
 - 1 stock or species group was categorized as non-fully/under exploited.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

Less than 0.01% of the global catch is from this region.

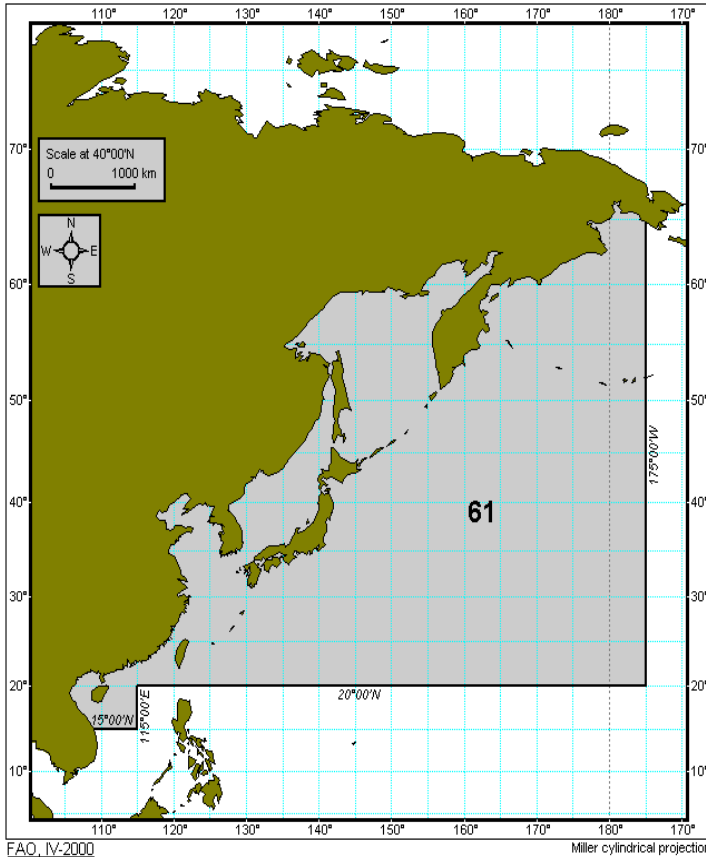
The major fishing nations in this region include:

- Australia
- South Africa
- Japan
- France

Southern Indian Ocean (FAO Area 58) - Risk of IUU

100%

Northwest Pacific (FAO Area 61)



This area includes portions of or the entire EEZs of China, Taiwan, Japan, North Korea, South Korea, and Russia and high seas areas, including areas managed under the Western and Central Pacific Fisheries Commission (WCPFC) RFMO.

31 stocks or species groups have been assessed by the FAO for this region.

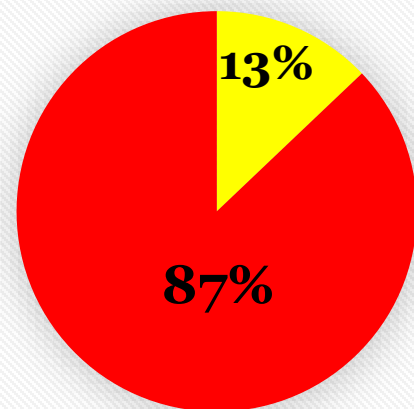
- 27 stocks or species groups (87%) were categorized as experiencing high levels of IUU in the region.
 - 2 stock or species group was assessed as overexploited.
 - 13 stocks or species groups were assessed as fully exploited.
 - 10 stocks or species groups had an unknown status.
 - 2 stocks or species groups were assessed as non-fully/under-exploited.
- 4 stocks or species groups (13%) were categorized as experiencing moderate levels of IUU in this region.
- 4 stocks or species groups had an unknown status.
- No stock or species groups was categorized as experiencing low levels of IUU in this region.

More than 24% of the global catch is from this region (excluding tuna catches).

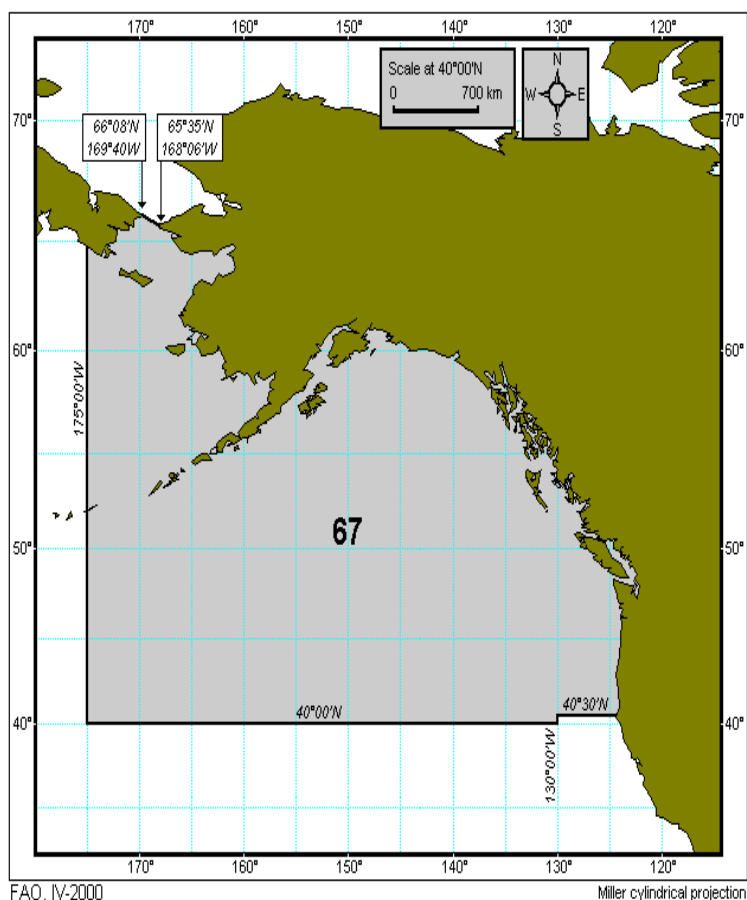
The major fishing nations in this region include:

- Russia
- Japan
- North Korea
- South Korea
- Taiwan
- China

Northwest Pacific (FAO Area 61) - Risk of IUU



Northeast Pacific (FAO Area 67)



This area includes portions of or the entire EEZs of the US, Canada, and Russia and high seas areas, including areas managed under the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea (CCBSP) RFMO.

23 stocks or species groups have been assessed by the FAO for this region.

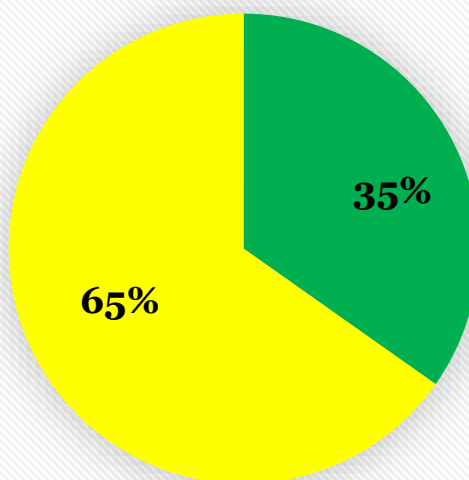
- No stocks or species groups were categorized as experiencing high levels of IUU in the region.
- 15 stocks or species groups (65%) were categorized as experiencing moderate levels of IUU in this region.
 - 10 stocks or species groups were assessed as fully exploited.
 - 5 stocks or species groups had an unknown status.
- 8 stocks or species groups (35%) were categorized as experiencing low levels of IUU in this region.
 - 6 stocks or species groups were assessed as fully exploited.
 - 1 stock or species group had an unknown status.
 - 1 stock or species group was assessed as non-fully/under-exploited.

Almost 3% of the global catch is from this region.

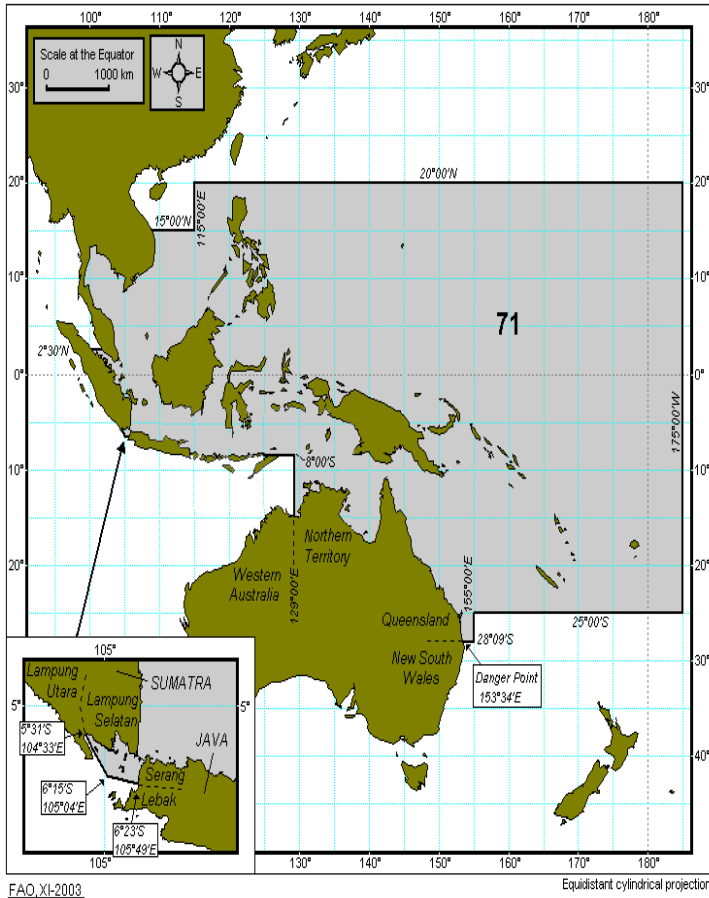
The major fishing nations in this region include:

- US
- Canada
- Russia

Northeast Pacific (FAO Area 67) - Risk of IUU



Western Central Pacific (FAO Area 71)



This area includes portions of or the entire EEZs of Australia, Papua New Guinea, Indonesia, Singapore, Malaysia, the Philippines, Viet Nam, Laos, Micronesia, Fiji, Kiribati, New Caledonia and several Pacific Island States and high seas areas, including areas managed under the Western and Central Pacific Fisheries Commission (WCPFC) RFMO.

49 stocks or species groups have been assessed by the FAO for this region.

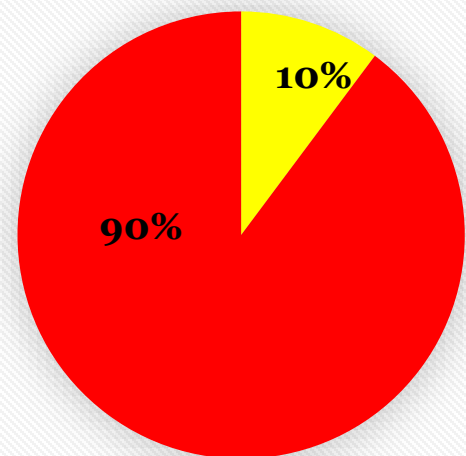
- 44 stocks or species groups (90%) were categorized as experiencing high levels of IUU in the region.
 - 4 stocks or species groups were assessed as overexploited.
 - 22 stocks or species groups were assessed as fully exploited.
 - 15 stocks or species groups have an unknown status.
 - 3 stocks or species groups were assessed as non-fully/under-exploited.
- 5 stocks or species groups (10%) were categorized as experiencing moderate levels of IUU in this region.
 - 1 stock or species group was assessed as overexploited.
 - 4 stocks or species groups were assessed as fully exploited.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

Almost 12% of the global catch is from this region (excluding tuna catches).

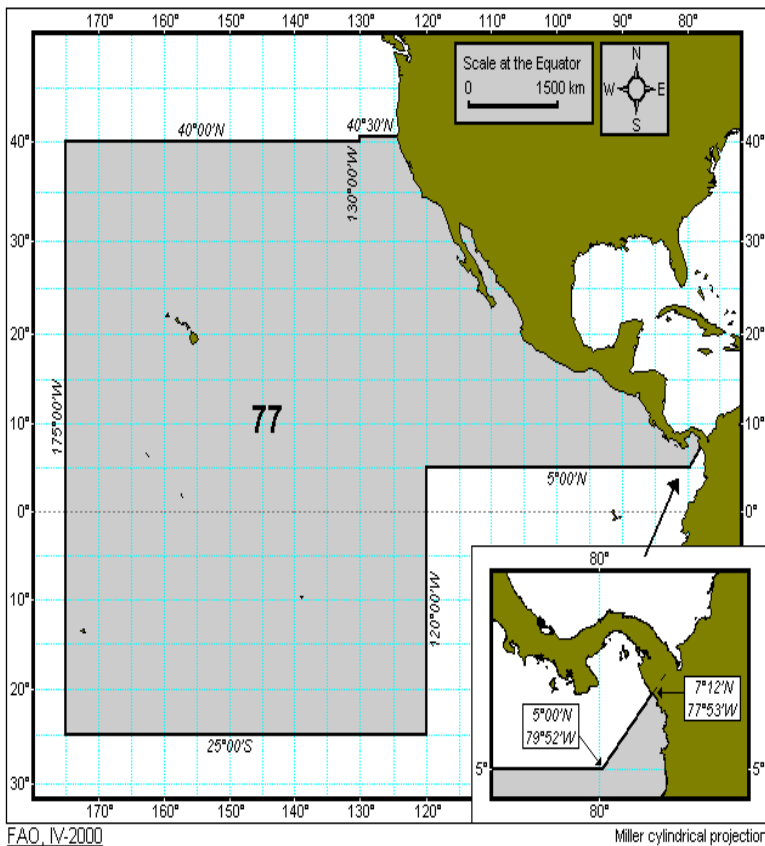
The major fishing nations in this region include:

- Philippines
- Malaysia
- Indonesia
- Thailand
- Singapore
- Kiribati
- Fiji
- Viet Nam
- New Caledonia
- Australia
- South Korea
- Papua New Guinea

Western Central Pacific (FAO Area 71) - Risk of IUU



Eastern Central Pacific (FAO Area 77)



This area includes portions of or the entire EEZs of the U.S., Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, the Cook Islands, and high seas areas, including areas managed under the Inter-American Tropical Tuna Commission (IATTC) RFMO.

21 stocks or species groups have been assessed by the FAO for this region.

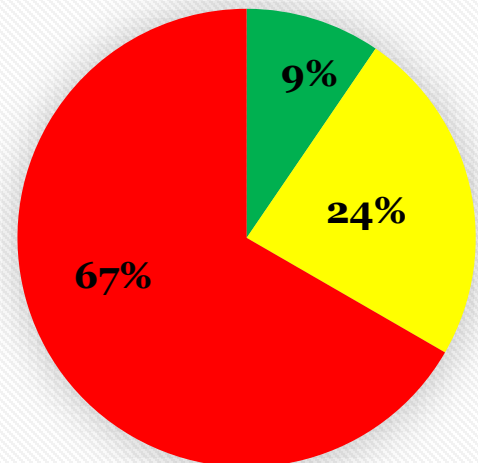
- 14 stocks or species groups (67%) were categorized as experiencing high levels of IUU in the region.
 - 6 stocks or species groups were assessed as fully exploited.
 - 6 stocks or species groups had an unknown status.
 - 2 stocks or species groups were assessed as non-fully/under-exploited.
- 5 stocks or species groups (24%) were categorized as experiencing moderate levels of IUU in this region.
 - 3 stocks or species groups had an unknown status.
 - 2 stocks or species groups were assessed as non-fully/under-exploited.
- 2 stocks or species groups (9%) were categorized as experiencing low levels of IUU in this region.
 - 2 stocks or species groups had an unknown status.

Almost 2% of the global catch is from this region (excluding tuna catches).

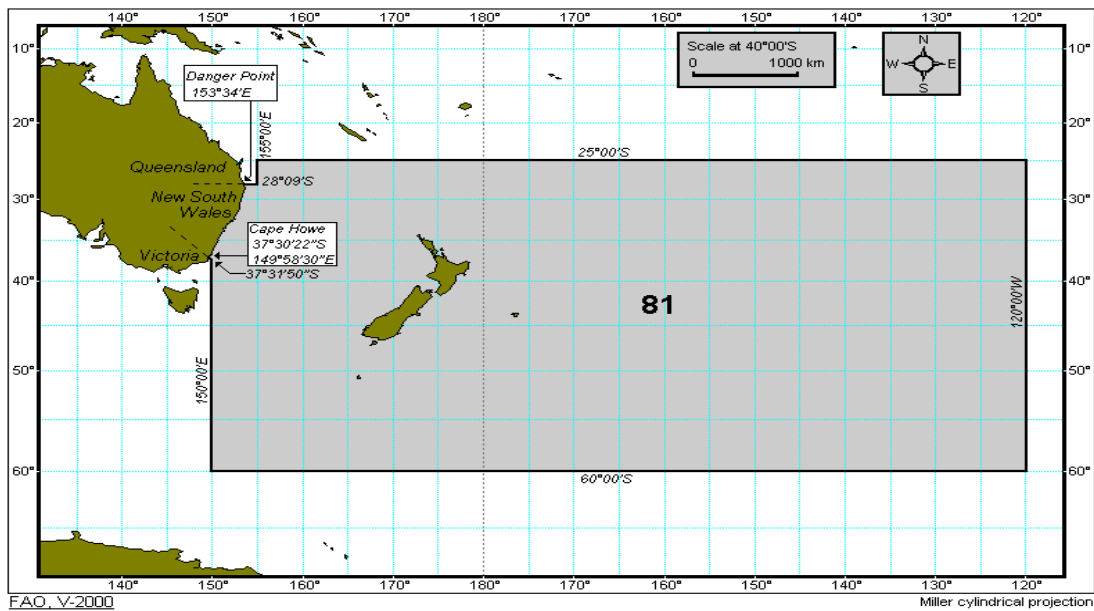
The major fishing nations in this region include:

- U.S.
- Mexico
- Panama
- Nicaragua
- Costa Rica
- Cook Islands
- El Salvador
- South Korea

Eastern Central Pacific (FAO Area 77) - Risk of IUU



Southwest Pacific (FAO Area 81)



This area includes portions of or the entire EEZs of Australia, New Zealand, and high seas areas, including areas managed under the Western and Central Pacific Fishery Commission (WCPFC) RFMO.

31 stocks or species groups have been assessed by the FAO for this region.

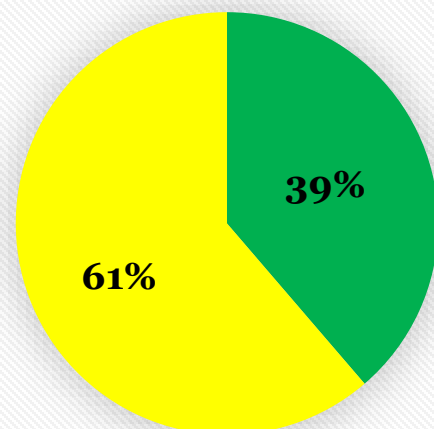
- No stocks or species groups were categorized as experiencing high levels of IUU in the region.
- 19 stocks or species groups (61%) were categorized as experiencing moderate levels of IUU in this region.
 - 1 stock or species group was assessed as overexploited.
 - 11 stocks or species group were assessed as fully exploited.
 - 5 stocks or species group had an unknown status.
 - 2 stocks or species group were assessed as non-fully/under-exploited.
- 12 stocks or species groups (39%) were categorized as experiencing low levels of IUU in this region.
 - 6 stocks or species group were assessed as fully exploited.
 - 3 stocks or species group had an unknown status.
 - 3 stocks or species group were assessed as non-fully/under-exploited.

Only 0.5% of the global catch is from this region (excluding tuna catches).

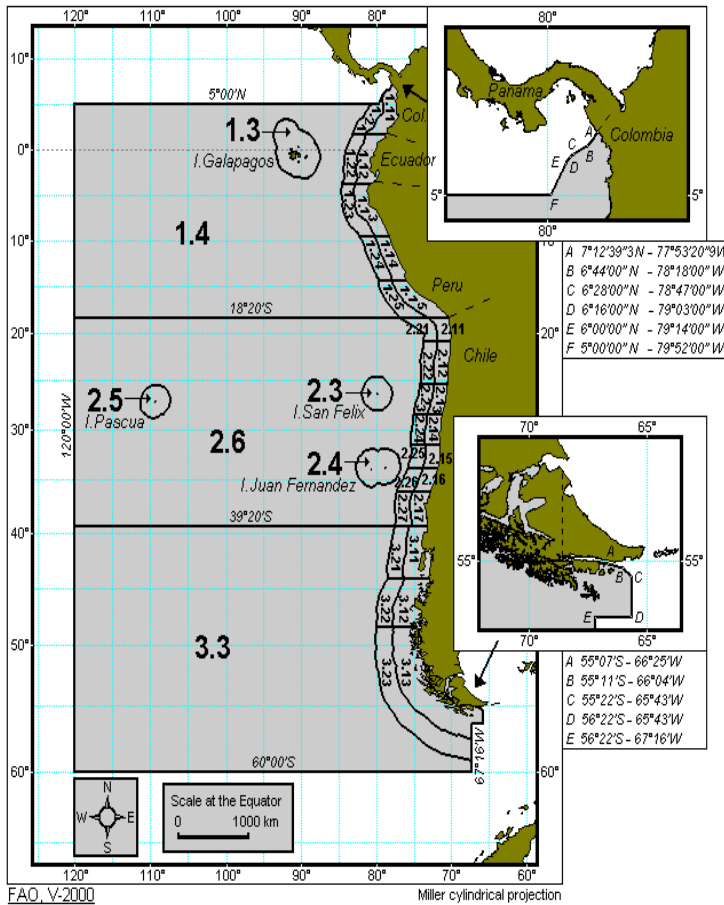
The major fishing nations in this region include:

- Australia
- New Zealand
- South Korea
- Spain
- Japan

Southwest Pacific (FAO Area 81) - Risk of IUU



Southeast Pacific (FAO Area 87)



This area includes portions of or the entire EEZs of Colombia, Ecuador, Peru, and Chile, and high seas areas, including areas managed under the Inter-American Tropical Tuna Commission (IATTC) RFMO.

20 stocks or species groups have been assessed by the FAO for this region.

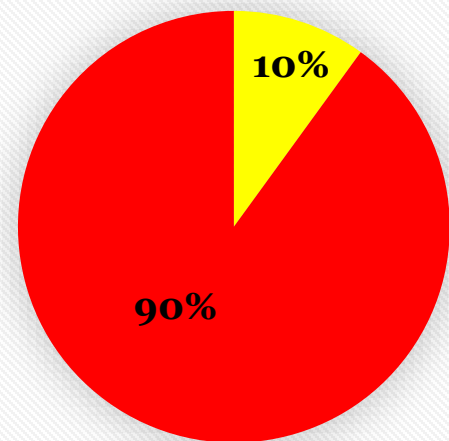
- 18 stocks or species groups (90%) were categorized as experiencing high levels of IUU in the region.
 - 3 stocks or species groups were assessed as overexploited.
 - 7 stocks or species groups were assessed as fully exploited.
 - 7 stocks or species groups had an unknown status.
 - 1 stock or species groups was assessed as non-fully exploited/overexploited.
- 2 stocks or species groups (10%) were categorized as experiencing moderate levels of IUU in this region.
 - 2 stocks or species groups had an unknown status.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

About 14% of the global catch is from this region (excluding tuna catches).

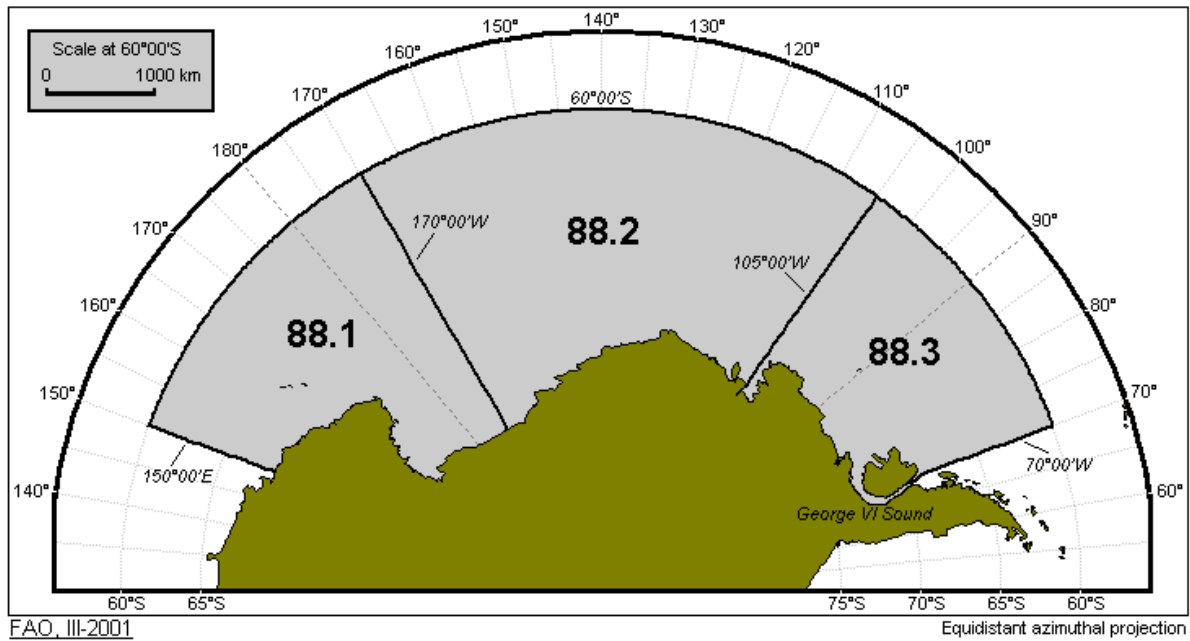
The major fishing nations in this region include:

- Chile
- Peru
- Ecuador
- Vanuatu
- China
- Japan
- Colombia

Southeast Pacific (FAO Area 87) - Risk of IUU



Southern/Antarctic Pacific (FAO Area 88)



This area includes the high seas areas managed under the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) RFMO.

3 stocks or species groups have been assessed by the FAO for this region.

- No stocks or species groups were categorized as experiencing high levels of IUU in the region.
- All 3 stocks or species groups (100%) were categorized as experiencing moderate levels of IUU in this region.
 - 2 of the stocks were assessed as fully exploited
 - 1 stock was assessed as non-fully/under-exploited.
- No stocks or species groups were categorized as experiencing low levels of IUU in this region.

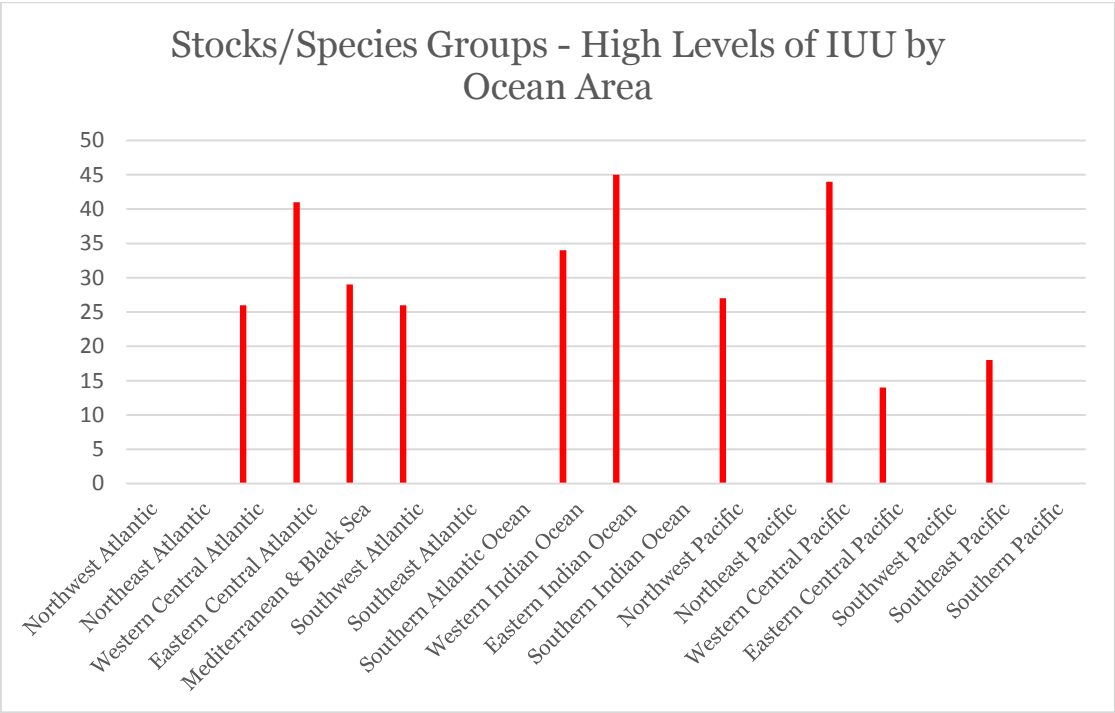
Less than 0.0003% of the global catch is from this region.

Southern/Antarctic Pacific (FAO Area 88) - Risk of IUU

100%

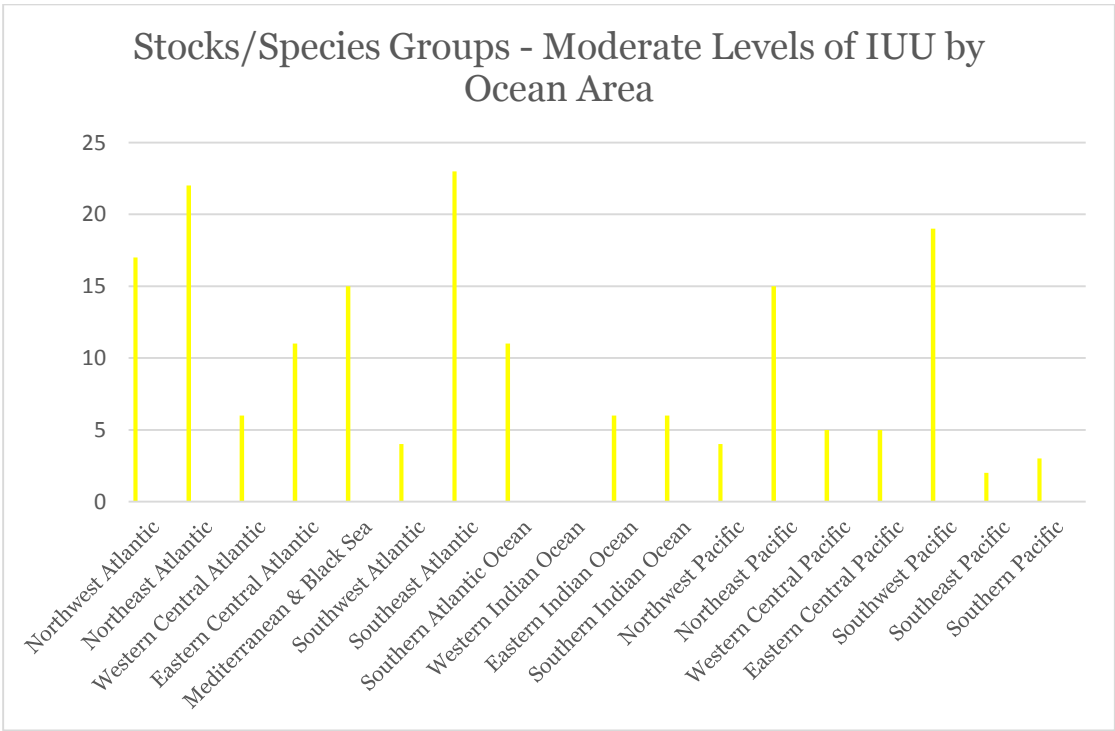
High Risk Stocks by Ocean Area

The Eastern Indian Ocean (FAO Area 57) and the Western Central Pacific (FAO Area 71) had the highest number of stocks categorized as high risk. 10 of the 18 Ocean Areas had stocks categorized as at high risk of IUU fishing.



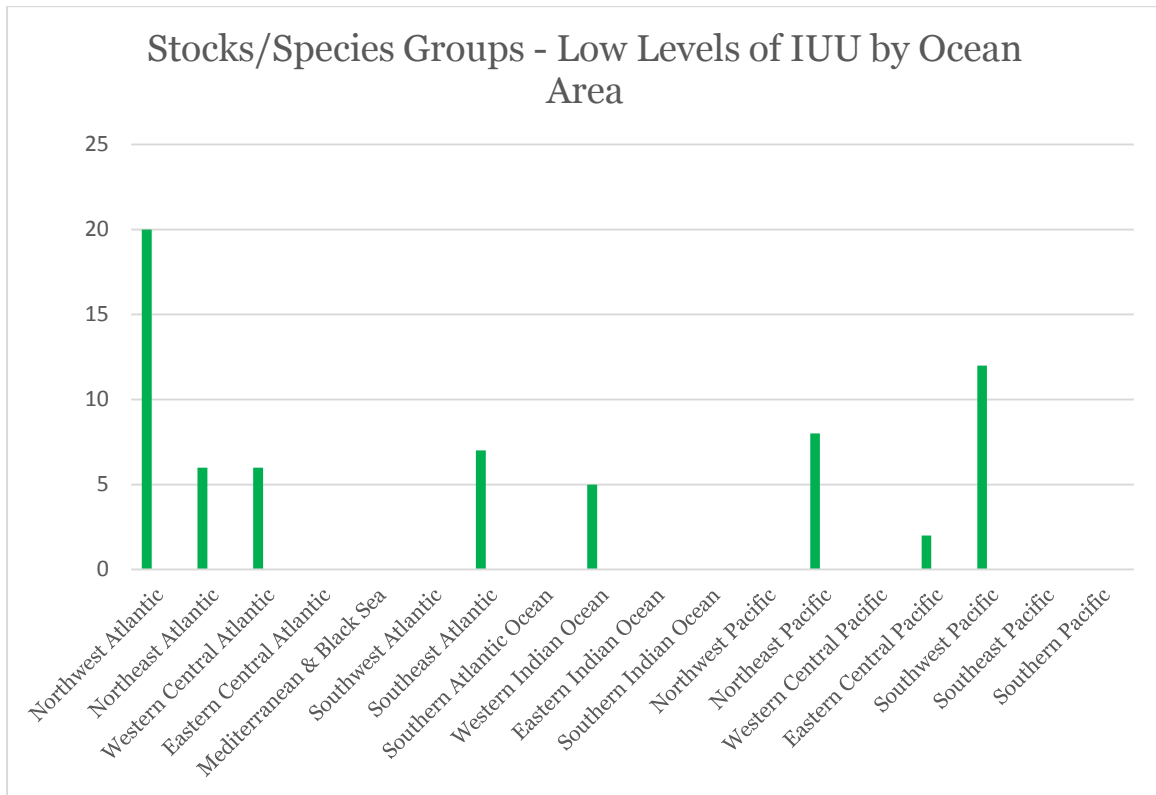
Moderate Risk Stocks by Ocean Area

The Southeast Atlantic (FAO Area 47) and the Northeast Atlantic (FAO Area 27) had the highest number of stocks categorized as moderate risk. All but one Ocean Area had stocks categorized as at moderate risk of IUU fishing.



Low Risk Stocks by Ocean Area

The Northwest Atlantic (FAO Area 21) had the highest number of stocks categorized as at low risk. Only 8 of the 18 Ocean Areas had stocks categorized as at low risk of IUU fishing.

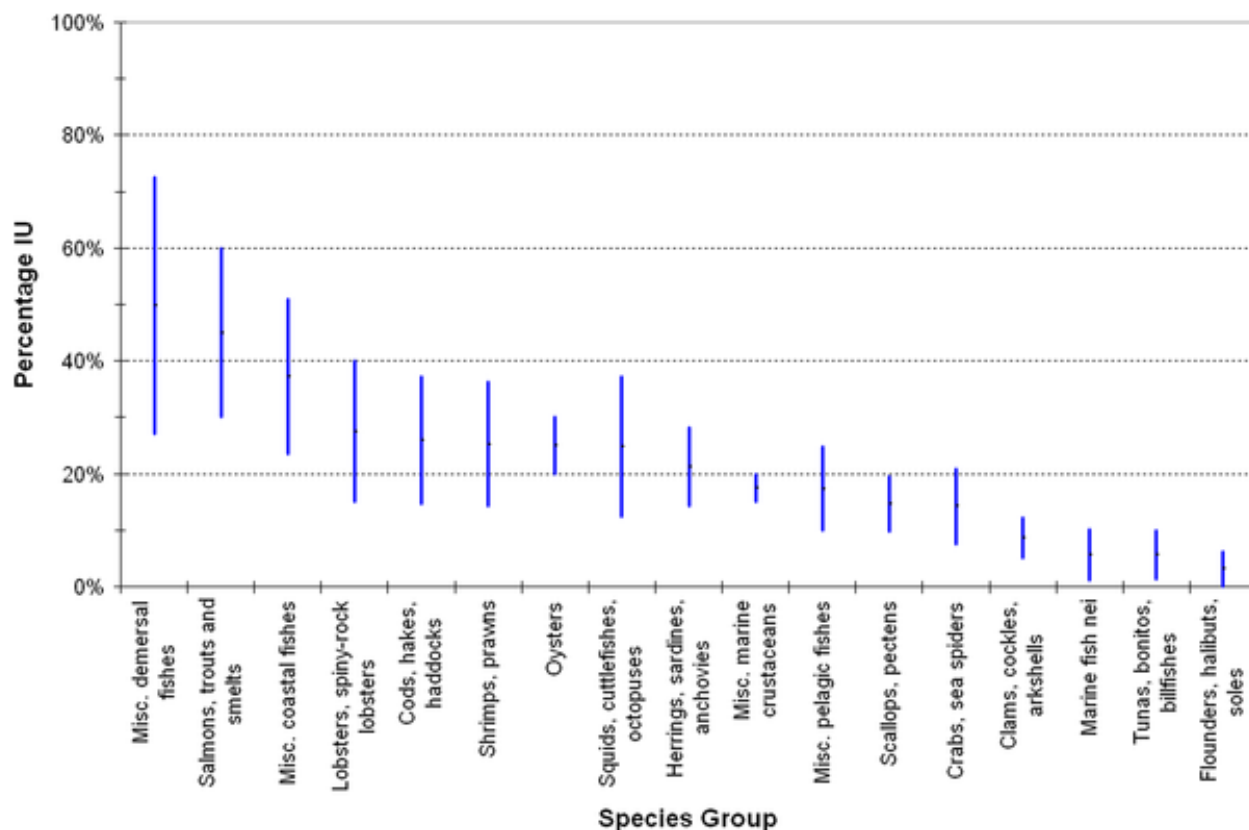


ⁱ FAO Technical Paper 569. 2011.

APPENDIX 1: IUU Estimates for Species Groups and Ocean Regions

IUU estimates for Species Groups and Ocean Basins from: Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4(2): e4570. doi:10.1371/journal.pone.0004570 <http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0004570>

IUU Estimates for Species Groups: Agnew et al. 2009.



ISSCAAP Group	High	Low	Average
23 - Salmons, trouts and smelts	60%	30%	45%
31 - Flounders, halibuts, soles	6%	0%	3%
32 - Cods, hakes, haddocks	37%	15%	26%
33 - Misc. coastal fishes	51%	23%	37%
34 - Misc. demersal fishes	73%	27%	50%
35 - Herrings, sardines, anchovies	28%	14%	21%
36 - Tunas, bonitos, billfishes	10%	1%	6%
37 - Misc. pelagic fishes	25%	10%	17%
39 - Marine fish nei	10%	1%	6%
42 - Crabs, sea spiders	21%	8%	14%
43 - Lobsters, spiny-rock lobsters	40%	15%	28%
45 - Shrimps, prawns	36%	14%	25%
47 - Misc. marine crustaceans	20%	15%	18%
53 - Oysters	30%	20%	25%
55 - Scallops, pectens	20%	10%	15%
56 - Clams, cockles, arkshells	12%	5%	9%
57 - Squids, cuttlefishes, octopuses	37%	12%	25%

IUU Estimates for Ocean Area: Agnew et al. 2009.

Region	IUU Estimate (average) 2000-2003
Eastern Central Atlantic	37%
Western Central Pacific	34%
Northwest Pacific	33%
Southwest Atlantic	32%
Eastern Indian	32%
Southeast Pacific	19%
Western Indian	18%
Eastern Central Pacific	15%
Western Central Atlantic	10%
Northwest Atlantic	9%
Northeast Atlantic	9%
Southeast Atlantic	7%
Antarctic	7%
Southwest Pacific	4%
Northeast Pacific	3%
Global Average	18%

APPENDIX 2 – Estimates of IUU Risk for FAO Assessed Stocks

Stock, State of Exploitation, Region, ISSCAAP Group, Main Fishing Countries from FAO Technical Paper 569.

ISSCAAP IUU Average Estimate and IUU Average Estimate for Ocean Region from Agnew et al. 2009.

High Risk/Red

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Eastern Central Atlantic (FAO Area 34)	34	Largehead hairtail	<i>Trichiurus lepturus</i>	Sierra Leone, Senegal, Nigeria, Morocco	13	Unknown		50%	37%
Eastern Central Atlantic (FAO Area 34)	34	Other miscellaneous demersal fishes			26	Unknown		50%	37%
Western Central Pacific (FAO Area 71)	34	Hairtails, scabbardfishes	<i>Trichiuridae</i>	Philippines, Indonesia	69	U	High	50%	34%
Western Central Pacific (FAO Area 71)	34	Largehead hairtail	<i>Trichiurus lepturus</i>	Thailand, Singapore, Malaysia	8	F	High	50%	34%
Western Central Pacific (FAO Area 71)	34	Other miscellaneous demersal fishes			7	Unknown		50%	34%
Northwest Pacific Ocean (FAO Area 61)	34	Largehead hairtail	<i>Trichiurus lepturus</i>	Taiwan, South Korea, Japan, China	1278	O	Intermediate	50%	33%
Northwest Pacific Ocean (FAO Area 61)	34	Other miscellaneous demersal fishes			479	Unknown		50%	33%
Southwest Atlantic (FAO Area 41)	34	Patagonian toothfish	<i>Dissostichus eleginoides</i>	Uruguay, South Korea, Falkland Islands, Argentina	5	O	Low	50%	32%
Southwest Atlantic (FAO Area 41)	34	Pink cusk-eel	<i>Genypterus blacodes</i>	Spain, South Korea, Falkland Islands, Argentina	21	O	Low	50%	32%
Southwest Atlantic (FAO Area 41)	34	Other miscellaneous demersal fishes			58	Unknown		50%	32%
Eastern Indian Ocean (FAO Area 57)	34	Hairtails, scabbardfishes	<i>Trichiuridae</i>	Indonesia, India	46	F	High	50%	32%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Eastern Indian Ocean (FAO Area 57)	34	Largehead hairtail	<i>Trichiurus lepturus</i>	Thailand, Malaysia	8	F	High	50%	32%
Eastern Indian Ocean (FAO Area 57)	34	Snoek	<i>Thyrsites atun</i>	Australia	<1	Unknown		50%	32%
Eastern Indian Ocean (FAO Area 57)	34	Other miscellaneous demersal fishes			33	Unknown		50%	32%
Southeast Pacific (FAO Area 87)	34	Patagonian toothfish	<i>Dissostichus eleginoides</i>	Chile	5	F	High	50%	19%
Southeast Pacific (FAO Area 87)	34	Other miscellaneous demersal fishes			19	Unknown		50%	19%
Western Indian Ocean (FAO Area 51)	34	Demersal percomorphs	<i>Perciformes</i>	Yemen, Seychelles, Oman, Kenya	17	F	Intermediate	50%	18%
Western Indian Ocean (FAO Area 51)	34	Hairtails, scabbardfishes		Oman, South Korea, India	84	Unknown		50%	18%
Western Indian Ocean (FAO Area 51)	34	NEI	<i>Trichiuridae</i>					50%	18%
Western Indian Ocean (FAO Area 51)	34	Largehead hairtail	<i>Trichiurus lepturus</i>	Pakistan, Iran	27	Unknown		50%	18%
Western Indian Ocean (FAO Area 51)	34	Other miscellaneous demersal fishes			26	Unknown		50%	18%
Eastern Central Pacific (FAO Area 77)	34	Miscellaneous demersal fishes			5	Unknown		50%	15%
Western Central Atlantic (FAO Area 31)	34	Miscellaneous demersal fishes			17	Unknown		50%	10%
Western Central Atlantic (FAO Area 31)	34	Atlantic menhaden	<i>Brevoortia tyrannus</i>	US	<1	F/O	Low	50%	10%
Western Central Atlantic (FAO Area 31)	34	Atlantic thread herring	<i>Opisthonema oglinum</i>	Venezuela, US, Dominican Republic, Cuba	9	Unknown		50%	10%
Western Central Atlantic (FAO Area 31)	34	Gulf menhaden	<i>Brevoortia patronus</i>	US	455	F	Low	50%	10%
Western Central Atlantic (FAO Area 31)	34	Round sardinella	<i>Sardinella aurita</i>	Venezuela, US	37	O	Low	50%	10%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Western Central Atlantic (FAO Area 31)	34	Other herrings, sardines, anchovies			7	Unknown		50%	10%
Mediterranean and Black Sea (FAO Area 37)	34	Miscellaneous demersal fishes			25	Unknown		50%	
Northwest Pacific Ocean (FAO Area 61)	23	Chum salmon	<i>Oncorhynchus keta</i>	Russia, Japan	251	F	Low	45%	33%
Northwest Pacific Ocean (FAO Area 61)	23	Pink salmon	<i>Oncorhynchus gorbuscha</i>	Russia, Japan	412	F	Low	45%	33%
Northwest Pacific Ocean (FAO Area 61)	23	Other salmon, trouts, smelts			26	F	High	45%	33%
Eastern Central Atlantic (FAO Area 34)	33	Bigeye grunt	<i>Brachydeuterus auritus</i>	Togo, Sierra Leone, Ghana, Cote d'Ivoire	31	F	Low	37%	37%
Eastern Central Atlantic (FAO Area 34)	33	Bobo croaker	<i>Pseudotolithus elongatus</i>	Sierra Leone, Guinea, Gambia, Gabon	22	O	Low	37%	37%
Eastern Central Atlantic (FAO Area 34)	33	Common dentex	<i>Dentex dentex</i>	Latvia, Greece	<1	F	Intermediate	37%	37%
Eastern Central Atlantic (FAO Area 34)	33	Croakers, drums NEI	<i>Sciaenidae</i>	Senegal, Nigeria, Morocco, South Korea	25	Unknown		37%	37%
Eastern Central Atlantic (FAO Area 34)	33	Mulletts NEI	<i>Mugilidae</i>	Senegal, Nigeria, Mauritania, Guinea	21	Unknown		37%	37%
Eastern Central Atlantic (FAO Area 34)	33	Threadfins, tasselfishes NEI	<i>Polynemidae</i>	Sao Tome and Principe, the DRC	<1	Unknown		37%	37%
Eastern Central Atlantic (FAO Area 34)	33	Other miscellaneous coastal fishes			253	Unknown		37%	37%
Western Central Pacific (FAO Area 71)	33	Bigeyes NEI	<i>Priacanthus spp.</i>	Thailand, Malaysia, Indonesia	50	Unknown		37%	34%
Western Central Pacific (FAO Area 71)	33	Lizardfishes NEI	<i>Synodontidae</i>	Thailand, Singapore, Philippines, Malaysia	36	F	High	37%	34%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Western Central Pacific (FAO Area 71)	33	Mulletts NEI	<i>Mugilidae</i>	Thailand, Philippines, Malaysia, Indonesia	56	F	High	37%	34%
Western Central Pacific (FAO Area 71)	33	Percoids NEI	<i>Percoidei</i>	Philippines, Kiribati	17	Unknown		37%	34%
Western Central Pacific (FAO Area 71)	33	Ponyfishes (=slipmouths) NEI	<i>Leiognathus spp.</i>	Singapore, Malaysia, Fiji	3	Unknown		37%	34%
Western Central Pacific (FAO Area 71)	33	Ponyfishes (=slipmouths) NEI	<i>Leiognathidae</i>	Philippines, Indonesia	126	F	High	37%	34%
Western Central Pacific (FAO Area 71)	33	Sea catfishes NEI	<i>Ariidae</i>	Thailand, Philippines, Malaysia, Indonesia	98	F	High	37%	34%
Western Central Pacific (FAO Area 71)	33	Threadfin breams NEI	<i>Nemipterus spp.</i>	Thailand, Philippines, Malaysia, Indonesia	137	F	High	37%	34%
Western Central Pacific (FAO Area 71)	33	Other miscellaneous coastal fishes			729	Unknown		37%	34%
Northwest Pacific Ocean (FAO Area 61)	33	Yellow croaker	<i>Larimichthys polyactis</i>	Taiwan, South Korea, China	407	F	High	37%	33%
Northwest Pacific Ocean (FAO Area 61)	33	Other miscellaneous coastal fishes			2032	Unknown		37%	33%
Southwest Atlantic (FAO Area 41)	33	Argentine croaker	<i>Umbrina canosai</i>	Uruguay, Brazil, Argentina	18	F/O	Intermediate	37%	32%
Southwest Atlantic (FAO Area 41)	33	Striped weakfish	<i>Cynoscion striatus</i>	Uruguay, Argentina	20	F/O	Low	37%	32%
Southwest Atlantic (FAO Area 41)	33	Weakfishes NEI	<i>Cynoscion spp.</i>	Brazil	7	Unknown		37%	32%
Southwest Atlantic (FAO Area 41)	33	Whitemouth croaker	<i>Micropogonias furnieri</i>	Uruguay, Brazil, Argentina	96	F/O	Low	37%	32%
Southwest Atlantic (FAO Area 41)	33	Other miscellaneous coastal fishes			168	Unknown		37%	32%
Eastern Indian Ocean (FAO Area 57)	33	Croakers, drums NEI	<i>Sciaenidae</i>	Thailand, Malaysia, Indonesia, India	103	F	High	37%	32%
Eastern Indian Ocean (FAO Area 57)	33	Mulletts NEI	<i>Mugilidae</i>	Thailand, Malaysia, Indonesia, India	40	Unknown		37%	32%

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Eastern Indian Ocean (FAO Area 57)	33	Percoids NEI	<i>Percoidei</i>	India	60	Unknown		37%	32%
Eastern Indian Ocean (FAO Area 57)	33	Ponyfishes (=slipmouths) NEI	<i>Leiognathidae</i>	Indonesia, India, Malaysia, Indonesia, India, Bangladesh	60	F	High	37%	32%
Eastern Indian Ocean (FAO Area 57)	33	Sea catfishes NEI	<i>Ariidae</i>		100	F	High	37%	32%
Eastern Indian Ocean (FAO Area 57)	33	Threadfin breams NEI	<i>Nemipterus spp.</i>	Thailand, Malaysia, Indonesia	38	F	High	37%	32%
Eastern Indian Ocean (FAO Area 57)	33	Other miscellaneous coastal fishes	<i>Arripis trutta</i>		319	Unknown		37%	32%
Southeast Pacific (FAO Area 87)	33	Miscellaneous coastal fishes			225	Unknown		37%	19%
Western Indian Ocean (FAO Area 51)	33	Bombay-duck	<i>Harpadon nephereus</i>	Pakistan, India	178	F	Intermediate	37%	18%
Western Indian Ocean (FAO Area 51)	33	Croakers, drums NEI	<i>Sciaenidae</i>	Pakistan, Oman, Iran, India	212	F	High	37%	18%
Western Indian Ocean (FAO Area 51)	33	Emperors (=scavengers) NEI	<i>Lethrinidae</i>	UAE, Saudi Arabia, Qatar, Oman	62	F	Low	37%	18%
Western Indian Ocean (FAO Area 51)	33	Lizardfishes NEI	<i>Synodontidae</i>	Saudi Arabia, India, Eritrea, Egypt	16	Unknown		37%	18%
Western Indian Ocean (FAO Area 51)	33	Mulletts NEI	<i>Mugilidae</i>	Pakistan, Iraq, India, Egypt	25	Unknown		37%	18%
Western Indian Ocean (FAO Area 51)	33	Sea catfishes NEI	<i>Ariidae</i>	UAE, Pakistan, Iran, India	95	Unknown		37%	18%
Western Indian Ocean (FAO Area 51)	33	Other miscellaneous coastal fishes			284	Unknown		37%	18%
Eastern Central Pacific (FAO Area 77)	33	Miscellaneous coastal fishes			44	F	High	37%	15%
Western Central Atlantic (FAO Area 31)	33	Flathead grey mullet	<i>Mugil cepahlus</i>	Venezuela, Mexico	6	F/O	Intermediate	37%	10%

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Western Central Atlantic (FAO Area 31)	33	Groupers	<i>Epinephelus morio</i>	Venezuela, Mexico, Dominican Rep.	20	O	Intermediate	37%	10%
Western Central Atlantic (FAO Area 31)	33	Grunts	<i>Haemulidae (=Pomadasyidae)</i>	Venezuela, Mexico, Dominican Rep., Cuba	8	F/O	Intermediate	37%	10%
Western Central Atlantic (FAO Area 31)	33	Mulletts NEI	<i>Mugilidae</i>	US, Mexico, Cuba, Colombia	6	Unknown		37%	10%
Western Central Atlantic (FAO Area 31)	33	Sciaenides	<i>Sciaenops ocellatus</i>	Venezuela, US, Mexico, French Guiana	20	F/O	Intermediate	37%	10%
Western Central Atlantic (FAO Area 31)	33	Snappers	<i>Lutjanus campechanus</i>	Venezuela, US, Mexico, Cuba	27	O	Intermediate	37%	10%
Western Central Atlantic (FAO Area 31)	33	Other miscellaneous coastal fishes			28	Unknown		37%	10%
Mediterranean and Black Sea (FAO Area 37)	33	Bogue	<i>Boops boops</i>	Morocco, Greece, Egypt, Algeria	30	F	Low	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Common dentex	<i>Dentex dentex</i>	Turkey, Libya, Italy, Greece	2	Unknown		37%	
Mediterranean and Black Sea (FAO Area 37)	33	Common pandora	<i>Pagellus erythrinus</i>	Tunisia, Spain, Libya, Algeria	12	O	Low	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Dusky grouper	<i>Epinephelus marginatus</i>	Turkey, Libya, Italy, Greece	1	O	Low	37%	
Mediterranean and Black Sea (FAO Area 37)	33	European seabass	<i>Dicentrarchus labrax</i>	Spain, Greece, Egypt, Albania	3	O	Intermediate	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Flathead grey mullet	<i>Mugil cepahlus</i>	Tunisia, Montenegro, Libya, Greece	3	F	Intermediate	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Gilthead seabream	<i>Sparus aurata</i>	Turkey, Tunisia, Spain, Egypt	5	O	Low	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Mulletts NEI	<i>Mugilidae</i>	Turkey, Tunisia, Russia, Egypt	15	Unknown		37%	

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Mediterranean and Black Sea (FAO Area 37)	33	Picarels NEI	<i>Spicara spp.</i>	Turkey, Tunisia, Italy, Greece	7	Unknown		37%	
Mediterranean and Black Sea (FAO Area 37)	33	Porgies, seabreams NEI	<i>Sparidae</i>	Turkey, Tunisia, Lebanon, Israel	3	O	Low	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Red mullet	<i>Mullus barbatus</i>	Turkey, Tunisia, Italy, Greece	16	O	Low	37%	
Mediterranean and Black Sea (FAO Area 37)	33	Surmullets (=red mullets) NEI	<i>Mullus spp.</i>	Spain, Libya, Egypt, Algeria	12	Unknown		37%	
Mediterranean and Black Sea (FAO Area 37)	33	Other miscellaneous coastal fishes			63	Unknown		37%	
Eastern Central Atlantic (FAO Area 34)	43	European lobster	<i>Homarus gammarus</i>	Morocco, Greece	<1	Unknown		28%	37%
Eastern Central Atlantic (FAO Area 34)	43	Norway lobster	<i>Nephrops norvegicus</i>	Morocco	<1	Unknown		28%	37%
Eastern Central Atlantic (FAO Area 34)	43	Palinurid spiny lobsters NEI	<i>Palinurus spp.</i>	Senegal, Morocco, Gambia	<1	O	High	28%	37%
Eastern Central Atlantic (FAO Area 34)	43	Tropical spiny lobsters NEI	<i>Palinurus spp.</i>	Sierra Leone, Nigeria, Ghana, Congo	4	F	High	28%	37%
Eastern Central Atlantic (FAO Area 34)	43	Other lobsters, spiny-rock lobsters			<1	Unknown		28%	37%
Southwest Atlantic (FAO Area 41)	43	Lobsters, spiny-rock lobsters			7	Unknown		28%	32%
Western Central Atlantic (FAO Area 31)	43	Caribbean spiny lobster	<i>Panulirus argus</i>	Nicaragua, Honduras, Cuba, Bahamas	24	F/O	Low	28%	10%
Western Central Atlantic (FAO Area 31)	43	Other lobsters, spiny-rock lobsters			<1	Unknown		28%	10%
Eastern Central Atlantic (FAO Area 34)	32	European hake	<i>Merluccius merluccius</i>	Spain, Portugal, Morocco, Italy	9	O	Low	26%	37%
Eastern Central Atlantic (FAO Area 34)	32	Senegalese hake	<i>Merluccius senegalensis</i>	Spain, Senegal, Poland, Latvia	13	F	Low	26%	37%

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Eastern Central Atlantic (FAO Area 34)	32	Other cods, hakes, haddocks			4	Unknown		26%	37%
Northwest Pacific Ocean (FAO Area 61)	32	Alaska pollock	<i>Theragra chalcogramma</i>	Russia, South Korea, North Korea, Japan	1649	F,F,O	Intermediate	26%	33%
Northwest Pacific Ocean (FAO Area 61)	32	Pacific cod	<i>Gadus macrocephalus</i>	Russia, South Korea, Japan	108	F	High	26%	33%
Northwest Pacific Ocean (FAO Area 61)	32	Other cods, hakes, haddocks			86	F	High	26%	33%
Southwest Atlantic (FAO Area 41)	32	Argentine hake	<i>Merluccius hubbsi</i>	Uruguay, Spain, Falkland Islands, Argentina	331	O	Low	26%	32%
Southwest Atlantic (FAO Area 41)	32	Patagonian grenadier	<i>Macruronus magellanicus</i>	Spain, Japan, Falkland Islands, Argentina	135	U	Low	26%	32%
Southwest Atlantic (FAO Area 41)	32	Southern blue whiting	<i>Micromesistius australis</i>	Spain, Japan, Falkland Islands, Argentina	32	O	Low	26%	32%
Southwest Atlantic (FAO Area 41)	32	Southern hake	<i>Merluccius australis</i>	Spain, Argentina	3	F/O	Intermediate	26%	32%
Southwest Atlantic (FAO Area 41)	32	Other cods, hakes, haddocks			29	Unknown		26%	32%
Southeast Pacific (FAO Area 87)	32	Patagonian grenadier	<i>Macruronus magellanicus</i>	Chile	78	O	High	26%	19%
Southeast Pacific (FAO Area 87)	32	South Pacific hake	<i>Merluccius gayi</i>	Peru, Chile	94	O	High	26%	19%
Southeast Pacific (FAO Area 87)	32	Southern hake	<i>Merluccius australis</i>	Chile	26	F	High	26%	19%
Southeast Pacific (FAO Area 87)	32	Other cods, hakes, haddocks			26	Unknown		26%	19%
Eastern Central Pacific (FAO Area 77)	32	Cods, hakes, haddocks			1	Unknown		26%	15%
Mediterranean and Black Sea (FAO Area 37)	32	European hake	<i>Merluccius merluccius</i>	Spain, Italy, Greece, France	30	O	Low	26%	
Mediterranean and Black Sea (FAO Area 37)	32	Whiting	<i>Merlangius merlangus</i>	Turkey, Italy, Greece, Algeria	13	F	Intermediate	26%	

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Mediterranean and Black Sea (FAO Area 37)	32	Other cods, hakes, haddocks			10	Unknown		26%	
Eastern Central Atlantic (FAO Area 34)	45	Deep-water rose shrimp	<i>Parapenaeus longirostris</i>	Spain, Senegal, Portugal, Liberia	1	F	Low	25%	37%
Eastern Central Atlantic (FAO Area 34)	45	Natantian decapods NEI	<i>Natania</i>	Nigeria, Morocco, Italy, Ghana	24	Unknown		25%	37%
Eastern Central Atlantic (FAO Area 34)	45	Penaeus shrimps NEI	<i>Penaeus spp.</i>	Sierra Leone, Cote d'Ivoire, Congo, Cameroon	3	O	Low	25%	37%
Eastern Central Atlantic (FAO Area 34)	45	Southern pink shrimp	<i>Penaeus notialis</i>	Senegal, Portugal, Nigeria, Gambia	13	O	Low	25%	37%
Eastern Central Atlantic (FAO Area 34)	45	Other shrimps, prawns			12	Unknown		25%	37%
Eastern Central Atlantic (FAO Area 34)	57	Common octopus	<i>Octopus vulgaris</i>	Spain, Italy, Guinea-Bissau, Congo	8	O	Low	25%	37%
Eastern Central Atlantic (FAO Area 34)	57	Common squids NEI	<i>Loligo spp.</i>	Portugal, Italy	0	Unknown		25%	37%
Eastern Central Atlantic (FAO Area 34)	57	Cuttlefish, bobtail squids NEI	<i>Sepiidae, Sepiidae</i>	Senegal, Morocco, Mauritania, Ghana	34	O	Low	25%	37%
Eastern Central Atlantic (FAO Area 34)	57	Octopuses, etc. NEI	<i>Octopodidae</i>	Senegal, Morocco, Mauritania, Greece	74	O	Low	25%	37%
Eastern Central Atlantic (FAO Area 34)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	Spain, Senegal, Morocco, Mauritania	8	Unknown		25%	37%
Eastern Central Atlantic (FAO Area 34)	57	Other squids, cuttlefishes, octopuses			0	Unknown		25%	37%
Western Central Pacific (FAO Area 71)	45	Banana prawn	<i>Penaeus merguensis</i>	Thailand, Papua New Guinea, Indonesia, Australia	61	F	High	25%	34%
Western Central Pacific (FAO Area 71)	45	Giant tiger prawn	<i>Penaeus monodon</i>	Thailand, Philippines, Indonesia, Australia	26	F	High	25%	34%

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Western Central Pacific (FAO Area 71)	45	Natantian decapods NEI	<i>Natantia</i>	Viet Nam, Malaysia, Indonesia, Cambodia	220	Unknown		25%	34%
Western Central Pacific (FAO Area 71)	45	Penaeus shrimps NEI	<i>Penaeus spp.</i>	Thailand, Philippines, Australia	31	O	High	25%	34%
Western Central Pacific (FAO Area 71)	45	Sergestid shrimp NEI	<i>Sergestidae</i>	Thailand, Philippines, Malaysia	26	F	High	25%	34%
Western Central Pacific (FAO Area 71)	45	Other shrimps, prawns			41	Unknown		25%	34%
Western Central Pacific (FAO Area 71)	57	Common squids NEI	<i>Loligo spp.</i>	Thailand, Singapore, Philippines, Indonesia	170	F	High	25%	34%
Western Central Pacific (FAO Area 71)	57	Cuttlefish, bobtail squids NEI	<i>Sepiidae, Sepiolidae</i>	Thailand, Philippines, Malaysia, Indonesia	44	F	High	25%	34%
Western Central Pacific (FAO Area 71)	57	Octopuses, etc. NEI	<i>Octopodidae</i>	Thailand, Philippines, Malaysia, Indonesia	20	F	High	25%	34%
Western Central Pacific (FAO Area 71)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	Malaysia, South Korea, Australia	30	Unknown		25%	34%
Western Central Pacific (FAO Area 71)	57	Other squids, cuttlefishes, octopuses			256	Unknown		25%	34%
Northwest Pacific Ocean (FAO Area 61)	45	Akiami paste shrimp	<i>Acetes japonicus</i>	South Korea, China	602	Unknown		25%	33%
Northwest Pacific Ocean (FAO Area 61)	45	Other shrimps, prawns			631	Unknown		25%	33%
Northwest Pacific Ocean (FAO Area 61)	57	Japanese flying squid	<i>Todarodes pacificus</i>	Russia, South Korea, Japan	406	U	Low	25%	33%
Northwest Pacific Ocean (FAO Area 61)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	North Korea, Japan, China, Hong Kong, China	454	F	High	25%	33%
Northwest Pacific Ocean (FAO Area 61)	57	Other squids, cuttlefishes, octopuses			474	Unknown		25%	33%

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Southwest Atlantic (FAO Area 41)	45	Argentine red shrimp	<i>Pleoticus muelleri</i>	Argentina	54	F	Low	25%	32%
Southwest Atlantic (FAO Area 41)	45	Other shrimps, prawns			41	F/O	Intermediate	25%	32%
Southwest Atlantic (FAO Area 41)	57	Argentine shortfin squid	<i>Illex argentinus</i>	Taiwan, South Korea, China, Argentina	261	F/O	Intermediate	25%	32%
Southwest Atlantic (FAO Area 41)	57	Patagonian squid	<i>Loligo gahi</i>	UK, Spain, Falkland Islands, Argentina	35	F	Intermediate	25%	32%
Southwest Atlantic (FAO Area 41)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	Spain	<1	F	Intermediate	25%	32%
Southwest Atlantic (FAO Area 41)	57	Other squids, cuttlefishes, octopuses			4	Unknown		25%	32%
Eastern Indian Ocean (FAO Area 57)	45	Banana prawn	<i>Penaeus merguensis</i>	Thailand, Indonesia, Australia	31	F	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	45	Giant tiger prawn	<i>Penaeus monodon</i>	Thailand, Indonesia, India, Australia	79	F	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	45	Natantian decapods NEI	<i>Natantia</i>	Myanmar, Malaysia, Indonesia, India	140	Unknown		25%	32%
Eastern Indian Ocean (FAO Area 57)	45	Penaeus shrimps NEI	<i>Penaeus spp.</i>	Thailand, Australia	9	F	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	45	Sergestid shrimp NEI	<i>Sergestidae</i>	Thailand, Malaysia	26	O	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	57	Cephalopods NEI	<i>Cephalopoda</i>	Timor-Leste, India	13	O	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	57	Common squids NEI	<i>Loligo spp.</i>	Thailand, Indonesia	30	F	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	57	Cuttlefish, bobtail squids NEI	<i>Sepiidae, Sepiolidae</i>	Thailand, Sri Lanka, Malaysia, Indonesia	26	F	High	25%	32%
Eastern Indian Ocean (FAO Area 57)	57	Octopuses, etc. NEI	<i>Octopodidae</i>	Thailand, Malaysia, Indonesia, Australia	6	O	Intermediate	25%	32%
Eastern Indian Ocean (FAO Area 57)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	Malaysia, Australia	28	F	High	25%	32%

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Southeast Pacific (FAO Area 87)	57	Jumbo flying squid	<i>Dosidicus gigas</i>	Peru, Japan, China, Chile	571	U	High	25%	19%
Southeast Pacific (FAO Area 87)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	Ecuador, Colombia, Chile	<1	Unknown		25%	19%
Southeast Pacific (FAO Area 87)	57	Other squids, cuttlefishes, octopuses			4	Unknown		25%	19%
Western Indian Ocean (FAO Area 51)	45	Indian white prawn			0	O	Intermediate	25%	18%
Western Indian Ocean (FAO Area 51)	45	Knife shrimp	<i>Haliporoides triarthrus</i>	Mozambique	<1	O	Intermediate	25%	18%
Western Indian Ocean (FAO Area 51)	45	Natantian decapods NEI	<i>Natantia</i>	Madagascar, Kuwait, Iran, India	133	F	High	25%	18%
Western Indian Ocean (FAO Area 51)	45	Penaeus shrimps NEI	<i>Penaeus</i>	Yemen, Tanzania, Pakistan, Mozambique	11	F	High	25%	18%
Western Indian Ocean (FAO Area 51)	45	Other shrimps, prawns			146	Unknown		25%	18%
Eastern Central Pacific (FAO Area 77)	45	Shrimps, prawns			58	F/O	High	25%	15%
Eastern Central Pacific (FAO Area 77)	53	Oysters			3	Unknown		25%	15%
Eastern Central Pacific (FAO Area 77)	57	Jumbo flying squid	<i>Dosidicus gigas</i>	US, Mexico	58	U	Intermediate	25%	15%
Eastern Central Pacific (FAO Area 77)	57	Octopuses, etc. NEI	<i>Octopodidae</i>	Nicaragua, Mexico, Costa Rica, Cook Islands	2	Unknown		25%	15%
Eastern Central Pacific (FAO Area 77)	57	Opalescent inshore squid	<i>Loligo opalescens</i>	US, Mexico	92	U	Intermediate	25%	15%
Eastern Central Pacific (FAO Area 77)	57	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	US, Nicaragua, South Korea, El Salvador	2	Unknown		25%	15%
Western Central Atlantic (FAO Area 31)	45	Atlantic seabob	<i>Xiphopenaeus kroyeri</i>	US, Suriname, Mexico, Guyana	26	F	Low	25%	10%

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Western Central Atlantic (FAO Area 31)	45	Northern brown shrimp	<i>Penaeus aztecus</i>	US, Mexico	57	F	Low	25%	10%
Western Central Atlantic (FAO Area 31)	45	Northern pink shrimp	<i>Penaeus duorarum</i>	US, Mexico, Cuba	4	O	Intermediate	25%	10%
Western Central Atlantic (FAO Area 31)	45	Northern white shrimp	<i>Penaeus setiferus</i>	US, Mexico	56	Unknown		25%	10%
Western Central Atlantic (FAO Area 31)	45	Penaeus shrimps NEI	<i>Penaeus spp.</i>	Venezuela, Nicaragua, Mexico, French Guiana	25	Unknown		25%	10%
Western Central Atlantic (FAO Area 31)	45	Redspotted shrimp	<i>Penaeus brasiliensis</i>		<1	O	High	25%	10%
Western Central Atlantic (FAO Area 31)	45	Rock shrimp	<i>Sicyonia brevirostris</i>	US	2	Unknown		25%	10%
Western Central Atlantic (FAO Area 31)	45	Royal red shrimp	<i>Pleoticus robustus</i>	US	<1	Unknown		25%	10%
Western Central Atlantic (FAO Area 31)	45	Other shrimps, prawns			4	Unknown		25%	10%
Western Central Atlantic (FAO Area 31)	53	American cupped oyster	<i>Crassotrea virginica</i>	US, Mexico	84	U/F	High	25%	10%
Western Central Atlantic (FAO Area 31)	53	Other oysters			2	Unknown		25%	10%
Mediterranean and Black Sea (FAO Area 37)	45	Common prawn	<i>Palaemon serratus</i>	Spain	<1	Unknown		25%	
Mediterranean and Black Sea (FAO Area 37)	45	Deep-water rose shrimp	<i>Parapenaeus longirostris</i>	Turkey, Tunisia, Italy, Algeria	16	O	Low	25%	
Mediterranean and Black Sea (FAO Area 37)	45	Other shrimps, prawns			27	Unknown		25%	
Mediterranean and Black Sea (FAO Area 37)	57	Common cuttlefish	<i>Sepia officinalis</i>	Turkey, Tunisia, Libya, Greece	9	U	Low	25%	

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Mediterranean and Black Sea (FAO Area 37)	57	Common octopus	<i>Octopus vulgaris</i>	Tunisia, Italy, Greece, France	9	F	Intermediate	25%	
Mediterranean and Black Sea (FAO Area 37)	57	Common squids NEI	<i>Loligo spp.</i>	Spain, Libya, Italy, Greece	6	U	Intermediate	25%	
Mediterranean and Black Sea (FAO Area 37)	57	Other squids, cuttlefishes, octopuses			38	Unknown		25%	
Eastern Central Atlantic (FAO Area 34)	35	Bonga shad	<i>Ethmalosa fimbriata</i>	Sierra Leone, Nigeria, Guinea, Cameroon	222	F	Low	21%	37%
Eastern Central Atlantic (FAO Area 34)	35	European anchovy	<i>Engraulis encrasicolus</i>	Morocco, Mauritania, Latvia, Ghana	105	F	Low	21%	37%
Eastern Central Atlantic (FAO Area 34)	35	European pilchard (=sardine)	<i>Sardina pilchardus</i>	Russia, Netherlands, Morocco, Lithuania	0	U/F	Low	21%	37%
Eastern Central Atlantic (FAO Area 34)	35	Madeiran sardinella	<i>Sardinella maderensis</i>	Senegal, Nigeria, Ghana, Congo	123	F	Low	21%	37%
Eastern Central Atlantic (FAO Area 34)	35	Round sardinella	<i>Sardinella aurita</i>	Senegal, Netherlands, Lithuania, Ghana	269	O	Low	21%	37%
Eastern Central Atlantic (FAO Area 34)	35	Other herrings, sardines, anchovies			194	F	Intermediate	21%	37%
Western Central Pacific (FAO Area 71)	35	Anchovies, etc. NEI	<i>Engraulidae</i>	Thailand	120	F	High	21%	34%
Western Central Pacific (FAO Area 71)	35	Bali sardinella	<i>Sardinella lemuru</i>	Indonesia	50	F	High	21%	34%
Western Central Pacific (FAO Area 71)	35	Goldstripe sardinella	<i>Sardinella gibbosa</i>	Indonesia	130	F	High	21%	34%
Western Central Pacific (FAO Area 71)	35	Sardinellas NEI	<i>Sardinella spp.</i>	Thailand, Philippines	547	F	High	21%	34%
Western Central Pacific (FAO Area 71)	35	Stolephorus anchovies NEI	<i>Stolephorus spp.</i>	Philippines, Malaysia, Indonesia	236	F	High	21%	34%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Western Central Pacific (FAO Area 71)	35	Other herrings, sardines, anchovies			84	Unknown		21%	34%
Northwest Pacific Ocean (FAO Area 61)	35	Japanese anchovy	<i>Engraulis japonicus</i>	Taiwan, South Korea, Japan, China	1071	F	Intermediate	21%	33%
Northwest Pacific Ocean (FAO Area 61)	35	Japanese pilchard	<i>Sardinops melanosticus</i>	South Korea, Japan, China	196	?, O	Low	21%	33%
Northwest Pacific Ocean (FAO Area 61)	35	Pacific herring	<i>Clupea pallasii</i>	Russia, South Korea, Japan, China	254	F	High	21%	33%
Northwest Pacific Ocean (FAO Area 61)	35	Other herrings, sardines, anchovies			130	Unknown		21%	33%
Southwest Atlantic (FAO Area 41)	35	Argentine anchovy	<i>Engraulis anchoita</i>	Argentina	28	U	Low	21%	32%
Southwest Atlantic (FAO Area 41)	35	Brazilian sardinella	<i>Sardinella brasiliensis</i>	Brazil	83	O		21%	32%
Southwest Atlantic (FAO Area 41)	35	Other herrings, sardines, anchovies			34	Unknown		21%	32%
Eastern Indian Ocean (FAO Area 57)	35	Anchovies, etc. NEI	<i>Engraulidae</i>	Thailand, India	62	F	High	21%	32%
Eastern Indian Ocean (FAO Area 57)	35	Clupeoids NEI	<i>Clupeoidei</i>	Sri Lanka, Malaysia, India, Australia	156	U-F	High	21%	32%
Eastern Indian Ocean (FAO Area 57)	35	Indian oil sardine	<i>Sardinella longiceps</i>	India	62	O	Intermediate	21%	32%
Eastern Indian Ocean (FAO Area 57)	35	Sardinellas NEI	<i>Sardinella spp.</i>	Thailand	17	O	Intermediate	21%	32%
Eastern Indian Ocean (FAO Area 57)	35	Stolephorus anchovies NEI	<i>Stolephorus spp.</i>	Malaysia, Indonesia	74	F	High	21%	32%
Eastern Indian Ocean (FAO Area 57)	35	Other herrings, sardines, anchovies			180	Unknown		21%	32%
Southeast Pacific (FAO Area 87)	35	Anchoveta (=Peruvian anchovy)	<i>Engraulis ringens</i>	Peru, Ecuador, Chile	6910	F	Low	21%	19%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Southeast Pacific (FAO Area 87)	35	Araucanian herring	<i>Strangomera benticki</i>	Chile	855	F	Intermediate	21%	19%
Southeast Pacific (FAO Area 87)	35	Pacific thread herring	<i>Opisthonema libertate</i>	Ecuador	23	F	High	21%	19%
Southeast Pacific (FAO Area 87)	35	South American pilchard	<i>Sardinops sagax</i>	Peru, Chile	<1	F	Low	21%	19%
Southeast Pacific (FAO Area 87)	35	Other herrings, sardines, anchovies			129	Unknown		21%	19%
Western Indian Ocean (FAO Area 51)	35	Anchovies, etc. NEI	<i>Engraulidae</i>	Zanzibar, Pakistan, India, Comoros	74	F	Low	21%	18%
Western Indian Ocean (FAO Area 51)	35	Clupeoids NEI	<i>Clupeoidei</i>	Zanzibar, Pakistan, Iran, India	57	Unknown		21%	18%
Western Indian Ocean (FAO Area 51)	35	Dorab wolf-herring	<i>Chirocentrus dorab</i>	Pakistan	1	Unknown		21%	18%
Western Indian Ocean (FAO Area 51)	35	Indian oil sardine	<i>Sardinella longiceps</i>	Pakistan, Oman, Iran, India	360	U	Low	21%	18%
Western Indian Ocean (FAO Area 51)	35	Sardinellas NEI	<i>Sardinella spp.</i>	Zanzibar, Tanzania, Egypt, Comoros	21	Unknown		21%	18%
Western Indian Ocean (FAO Area 51)	35	Wolf-herrings NEI	<i>Chirocentrus spp.</i>	India	11	Unknown		21%	18%
Western Indian Ocean (FAO Area 51)	35	Other herrings, sardines, anchovies			11	Unknown		21%	18%
Eastern Central Pacific (FAO Area 77)	35	California pilchard	<i>Sardinops caeruleus</i>	US, Mexico	729	F	Low	21%	15%
Eastern Central Pacific (FAO Area 77)	35	Californian anchovy	<i>Engraulis mordax</i>	US, Mexico	13	F	Low	21%	15%
Eastern Central Pacific (FAO Area 77)	35	Pacific anchoveta	<i>Cetengraulis mysticetus</i>	Panama, Mexico	103	F	Intermediate	21%	15%
Eastern Central Pacific (FAO Area 77)	35	Pacific thread herring	<i>Opisthonema libertate</i>	Panama, Mexico	163	F	High	21%	15%

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Eastern Central Pacific (FAO Area 77)	35	Other herrings, sardines, anchovies			6	Unknown		21%	15%
Mediterranean and Black Sea (FAO Area 37)	35	European anchovy	<i>Engraulis encrasicolus</i>	Turkey, Italy, Georgia, Croatia	366	F	Low	21%	
Mediterranean and Black Sea (FAO Area 37)	35	European pilchard (=sardine)	<i>Sardina pilchardus</i>	Turkey, Tunisia, Croatia, Algeria	198	F	Low	21%	
Mediterranean and Black Sea (FAO Area 37)	35	European sprat	<i>Sprattus sprattus</i>	Ukraine, Turkey, Russia, Bulgaria	92	O	Intermediate	21%	
Mediterranean and Black Sea (FAO Area 37)	35	Sardinellas NEI	<i>Sardinella spp.</i>	Tunisia, Spain, Egypt, Algeria	52	U	Low	21%	
Mediterranean and Black Sea (FAO Area 37)	35	Other herrings, sardines, anchovies			12	Unknown		21%	
Eastern Central Atlantic (FAO Area 34)	37	Atlantic horse mackerel	<i>Trachurus trachurus</i>	Portugal	<1	O	Low	17%	37%
Eastern Central Atlantic (FAO Area 34)	37	Barracudas NEI	<i>Sphyræna spp.</i>	Togo, Sierra Leone, Senegal, Nigeria	23	F	Intermediate	17%	37%
Eastern Central Atlantic (FAO Area 34)	37	Chub mackerel	<i>Scomber japonicus</i>	Russia, Morocco, Lithuania, Latvia	178	F	Low	17%	37%
Eastern Central Atlantic (FAO Area 34)	37	False scad	<i>Caranx rhoncus</i>	Ghana, Gambia	1	F/O	Intermediate	17%	37%
Eastern Central Atlantic (FAO Area 34)	37	Jack and horse mackerels NEI	<i>Trachurus spp.</i>	Russia, Poland, Lithuania, Latvia	258	O	Low	17%	37%
Eastern Central Atlantic (FAO Area 34)	37	Other miscellaneous pelagic fishes			63	Unknown		17%	37%
Western Central Pacific (FAO Area 71)	37	Bigeye scad	<i>Selar crumenophthalmus</i>	Thailand, Philippines, Malaysia, Indonesia	161	F	High	17%	34%
Western Central Pacific (FAO Area 71)	37	Carangids NEI	<i>Carangidae</i>	Thailand, Singapore, Philippines, Malaysia	106	Unknown		17%	34%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Western Central Pacific (FAO Area 71)	37	Flyingfishes NEI	<i>Exocoetidae</i>	Philippines, Kiribati, Indonesia	37	F	High	17%	34%
Western Central Pacific (FAO Area 71)	37	Indian mackerel	<i>Rastrelliger kanagurta</i>	Thailand, Philippines, Indonesia, Fiji	120	F	High	17%	34%
Western Central Pacific (FAO Area 71)	37	Indian mackerels NEI	<i>Rastrelliger spp.</i>	Thailand, Singapore, Malaysia	113	F	High	17%	34%
Western Central Pacific (FAO Area 71)	37	Indian scad	<i>Decapterus russelli</i>	Thailand, Malaysia	68	F	High	17%	34%
Western Central Pacific (FAO Area 71)	37	Short mackerel	<i>Rastrelliger brachysoma</i>	Philippines, Indonesia	220	U	High	17%	34%
Western Central Pacific (FAO Area 71)	37	Other miscellaneous pelagic fishes			970	O	High	17%	34%
Northwest Pacific Ocean (FAO Area 61)	37	Chub mackerel	<i>Scomber japonicus</i>	Taiwan, South Korea, Japan, China	1056	F	Low	17%	33%
Northwest Pacific Ocean (FAO Area 61)	37	Japanese jack mackerel	<i>Trachurus japonicus</i>	Taiwan, South Korea, Japan, China	217	F	Low	17%	33%
Northwest Pacific Ocean (FAO Area 61)	37	Pacific saury	<i>Cololabis saira</i>	Taiwan, Russia, South Korea, Japan	477	U	Intermediate	17%	33%
Northwest Pacific Ocean (FAO Area 61)	37	Other miscellaneous pelagic fishes			1067	Unknown		17%	33%
Southwest Atlantic (FAO Area 41)	37	Miscellaneous pelagic fishes			63	Unknown		17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Butterfishes, pomfrets NEI	<i>Stromateidae</i>	Malaysia, India	22	F	High	17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Carangids NEI	<i>Carangidae</i>	Thailand, Sri Lanka, Malaysia, India	46	F	High	17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Indian mackerel	<i>Rastrelliger kanagurta</i>	Thailand, Indonesia, India	50	F	High	17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Indian mackerels NEI	<i>Rastrelliger spp.</i>	Thailand, Malaysia	184	F	High	17%	32%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Eastern Indian Ocean (FAO Area 57)	37	Indian scad	<i>Decapterus russelli</i>	Thailand, Malaysia	50	F	High	17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Jacks, crevalles NEI	<i>Caranx spp.</i>	Indonesia, India	45	F	High	17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Scads NEI	<i>Decapterus spp.</i>	Indonesia	50	F	High	17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Torpedo scad	<i>Megalaspis cordyla</i>	Thailand, Malaysia, Indonesia	45	Unknown		17%	32%
Eastern Indian Ocean (FAO Area 57)	37	Other miscellaneous pelagic fishes			300	Unknown		17%	32%
Southeast Pacific (FAO Area 87)	37	Chilean jack mackerel	<i>Trachurus murphyi</i>	Vanuatu, Peru, China, Chile	1253	O	Intermediate	17%	19%
Southeast Pacific (FAO Area 87)	37	Chub mackerel	<i>Scomber japonicus</i>	Vanuatu, Peru, Ecuador, Chile	317	F	High	17%	19%
Southeast Pacific (FAO Area 87)	37	Miscellaneous pelagic fishes			15	Unknown		17%	19%
Western Indian Ocean (FAO Area 51)	37	Barracudas NEI	<i>Sphyraena spp.</i>	Yemen, Pakistan, Oman, Iran	29	F	Low	17%	18%
Western Indian Ocean (FAO Area 51)	37	Butterfishes, pomfrets NEI	<i>Stromateidae</i>	Pakistan, Kuwait, India	32	O	Low	17%	18%
Western Indian Ocean (FAO Area 51)	37	Carangids NEI	<i>Carangidae</i>	UAE, Pakistan, Oman, India	78	Unknown		17%	18%
Western Indian Ocean (FAO Area 51)	37	Chub mackerel	<i>Scomber japonicus</i>	South Africa, Egypt	<1	Unknown		17%	18%
Western Indian Ocean (FAO Area 51)	37	Indian mackerel	<i>Rastrelliger kanagurta</i>	Yemen, Pakistan, Oman, India	116	F	Intermediate	17%	18%
Western Indian Ocean (FAO Area 51)	37	Indian mackerels NEI	<i>Rastrelliger spp.</i>	Seychelles, Comoros	<1	F	Low	17%	18%
Western Indian Ocean (FAO Area 51)	37	Jacks, crevalles NEI	<i>Caranx spp.</i>	Yemen, Pakistan, Oman, India	55	Unknown		17%	18%

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Western Indian Ocean (FAO Area 51)	37	Mackerels NEI			0	Unknown		17%	18%
Western Indian Ocean (FAO Area 51)	37	Pelagic percomorphs NEI	<i>Perciformes</i>	Yemen, Oman, Kenya	37	Unknown		17%	18%
Western Indian Ocean (FAO Area 51)	37	Pompanos NEI	<i>Trachinotus spp.</i>	India	<1	Unknown		17%	18%
Western Indian Ocean (FAO Area 51)	37	Other miscellaneous pelagic fishes			71	Unknown		17%	18%
Northwest Pacific Ocean (FAO Area 61)	55	Yesso scallop	<i>Patinopecten yessoensis</i>	Russia, South Korea, Japan	323	Unknown		15%	33%
Northwest Pacific Ocean (FAO Area 61)	42	Gazami crab	<i>Portunus trituberculatus</i>	South Korea, Japan, China	366	F	High	14%	33%
Northwest Pacific Ocean (FAO Area 61)	42	Other crabs, sea-spiders			308	Unknown		14%	33%
Southwest Atlantic (FAO Area 41)	42	Crabs, sea-spiders			13	Unknown		14%	32%
Eastern Central Atlantic (FAO Area 34)	38	Sharks, rays, chimaeras			68	Unknown			37%
Western Central Pacific (FAO Area 71)	24	Chacunda gizzard shad	<i>Anodontostoma chacunda</i>	Philippines, Malaysia, Indonesia	7	Unknown			34%
Western Central Pacific (FAO Area 71)	24	Diadromous clupeoids NEI	<i>Clupeoidei</i>	Malaysia	1	Unknown			34%
Western Central Pacific (FAO Area 71)	24	Indian pellona	<i>Pellona ditchela</i>	Philippines, Malaysia	4	Unknown			34%
Western Central Pacific (FAO Area 71)	24	Toli shad	<i>Tenuulosa toli</i>	Indonesia, Thailand, Philippines, Malaysia, South Korea	3	U	High		34%
Western Central Pacific (FAO Area 71)	38	Rays, stingrays, mantas NEI	<i>Rajiformes</i>		16	O	Intermediate		34%

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Western Central Pacific (FAO Area 71)	38	Sharks, rays, skates, etc. NEI	<i>Elasmobranchii</i>	Thailand, Philippines, Malaysia, Australia	15	O	Intermediate		34%
Western Central Pacific (FAO Area 71)	38	Other sharks, rays, chimaeras			63	Unknown			34%
Northwest Pacific Ocean (FAO Area 61)	38	Sharks, rays, chimaeras			39	Unknown			33%
Southwest Atlantic (FAO Area 41)	38	Sharks, rays, chimaeras			83	Unknown			32%
Eastern Indian Ocean (FAO Area 57)	24	Chacunda gizzard shad	<i>Anodontostoma chacunda</i>	Malaysia, Indonesia	3	U	High		32%
Eastern Indian Ocean (FAO Area 57)	24	Diadromous clupeoids NEI	<i>Clupeoidei</i>	Malaysia	<1	Unknown			32%
Eastern Indian Ocean (FAO Area 57)	24	Hilsa shad	<i>Tenualosa ilisha</i>	Bangladesh	203	U	High		32%
Eastern Indian Ocean (FAO Area 57)	24	Indian pellona	<i>Pellona ditchela</i>	Malaysia	10	Unknown			32%
Eastern Indian Ocean (FAO Area 57)	24	Kelee shad	<i>Hilsa kelee</i>	India	14	O	Intermediate		32%
Eastern Indian Ocean (FAO Area 57)	24	Toli shad	<i>Tenualosa toli</i>	Indonesia	2	Unknown			32%
Eastern Indian Ocean (FAO Area 57)	38	Rays, stingrays, mantas NEI	<i>Rajiformes</i>	Thailand, Malaysia, Australia	8	O	Intermediate		32%
Eastern Indian Ocean (FAO Area 57)	38	Silky shark	<i>Carcharhinus falciformis</i>	Sri Lanka	<1	O	Intermediate		32%
Eastern Indian Ocean (FAO Area 57)	38	Other sharks, rays, chimaeras	<i>Squatinidae</i>		97	Unknown			32%
TOTAL					42,834				

Moderate Risk/Yellow

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Northwest Atlantic (FAO Area 21)	34	American angler	<i>Lophius americanus</i>	US, Portugal, Canada	9	F	Low	50%	9%
Northwest Atlantic (FAO Area 21)	34	Atlantic redfishes	<i>Sebastes spp.</i>	Spain, Portugal, Estonia, Canada	29	O	Low	50%	9%
Northwest Atlantic (FAO Area 21)	34	Other miscellaneous demersal fishes			11	Unknown		50%	9%
Northeast Atlantic (FAO Area 27)	34	Atlantic redfishes	<i>Sebastes spp.</i>	Spain, Lithuania, Iceland, Faroe Islands	32	O	Low	50%	9%
Northeast Atlantic (FAO Area 27)	34	Other miscellaneous demersal fishes			381	F	Low	50%	9%
Southeast Atlantic (FAO Area 47)	34	Devil anglerfish	<i>Lophius vomerinus</i>	Spain, South Africa	7	O	High	50%	7%
Southeast Atlantic (FAO Area 47)	34	Kingklip	<i>Genypterus capensis</i>	South Africa, Namibia	7	O		50%	7%
Southeast Atlantic (FAO Area 47)	34	Snoek	<i>Thyrsites atun</i>	Spain, South Africa, Namibia	12	F	Intermediate	50%	7%
Southeast Atlantic (FAO Area 47)	34	Other miscellaneous demersal fishes			8	Unknown		50%	7%
Southern Atlantic Ocean (FAO Area 48)	34	Blackfin icefish	<i>Chaenocephalus aceratus</i>		0	Unknown		50%	7%
Southern Atlantic Ocean (FAO Area 48)	34	Lanternfishes	<i>Myctophidae</i>		0	U/F	Intermediate	50%	7%
Southern Atlantic Ocean (FAO Area 48)	34	NEI							
Southern Atlantic Ocean (FAO Area 48)	34	Mackerel icefish	<i>Champsocephalus gunnari</i>		2	O	Intermediate	50%	7%
Southern Atlantic Ocean (FAO Area 48)	34	Patagonian toothfish	<i>Dissostichus eleginoides</i>	UK, Spain, New Zealand, Chile	3	F	Intermediate	50%	7%
Southern Atlantic Ocean (FAO Area 48)	34	South Georgia icefish	<i>Pseudochaenichthys georgianus</i>	UK, Norway	<1	Unknown		50%	7%
Southern Atlantic Ocean (FAO Area 48)	34	Other miscellaneous demersal fishes			<1	Unknown		50%	7%
Southern Indian Ocean (FAO Area 48)	34	Mackerel icefish	<i>Champsocephalus gunnari</i>	Australia	<1	O	Intermediate	50%	7%

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Southern Indian Ocean (FAO Area 48)	34	Patagonian toothfish	<i>Dissostichus eleginoides</i>	South Africa, Japan, France, Australia	9	F	Intermediate	50%	7%
Southern Pacific Ocean (FAO Area 48)	34	Lanternfishes NEI	<i>Myctophidae</i>		-	F	Intermediate	50%	7%
Southern Pacific Ocean (FAO Area 48)	34	Other miscellaneous demersal fishes	<i>Dissostichus mawsoni</i>		3	F	Intermediate	50%	7%
Southwest Pacific (FAO Area 81)	34	Demersal percomorphs NEI	<i>Perciformes</i>		-	Unknown		50%	4%
Southwest Pacific (FAO Area 81)	34	Hairtails, scabbardfishes NEI	<i>Trichiuridae</i>	South Korea	<1	Unknown		50%	4%
Southwest Pacific (FAO Area 81)	34	Orange roughy	<i>Hoplostethus atlanticus</i>	New Zealand, Australia	12	O	Intermediate	50%	4%
Southwest Pacific (FAO Area 81)	34	Oreo dories NEI	<i>Oreosomatidae</i>	New Zealand	<1	F,O	High	50%	4%
Southwest Pacific (FAO Area 81)	34	Pink cusk-eel	<i>Genypterus blacodes</i>	Spain, New Zealand, South Korea, Australia	13	F	Intermediate	50%	4%
Southwest Pacific (FAO Area 81)	34	Silver gemfish	<i>Rexea solandri</i>	New Zealand, Australia	<1	F,O	High	50%	4%
Southwest Pacific (FAO Area 81)	34	Silver scabbardfish	<i>Lepidopus caudatus</i>	New Zealand	2	Unknown		50%	4%
Southwest Pacific (FAO Area 81)	34	Snoek	<i>Thyrsites atun</i>	New Zealand, Australia	28	U	High	50%	4%
Southwest Pacific (FAO Area 81)	34	Warehou NEI	<i>Seriotelella spp.</i>		-	F	Intermediate	50%	4%
Southwest Pacific (FAO Area 81)	34	Other miscellaneous demersal fishes			61	U	High	50%	4%
Northeast Atlantic (FAO Area 27)	23	Atlantic salmon	<i>Salmo salar</i>	Sweden Russia, Finland, Denmark	<1	O	Low	45%	9%
Northeast Atlantic (FAO Area 27)	23	Other salmon, trouts, smelts			7	O	Low	45%	9%
Northeast Pacific Ocean (FAO Area 67)	23	Chinook salmon	<i>Oncorhynchus tshawytscha</i>	US, Canada	5	F-O	Low	45%	3%
Northeast Pacific Ocean (FAO Area 67)	23	Cum salmon	<i>Oncorhynchus keta</i>	US, Russia, Canada	54	F	Low	45%	3%

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Northeast Pacific Ocean (FAO Area 67)	23	Coho salmon	<i>Oncorhynchus kisutch</i>	US, Canada	16	F-O	Low	45%	3%
Northeast Pacific Ocean (FAO Area 67)	23	Pink salmon	<i>Oncorhynchus gorbuscha</i>	US, Russia, Canada	147	F	Low	45%	3%
Northeast Pacific Ocean (FAO Area 67)	23	Sockeye salmon	<i>Oncorhynchus nerka</i>	US, Canada	117	F	Low	45%	3%
Northeast Pacific Ocean (FAO Area 67)	23	Other salmon, trouts, smelts			<1	Unknown		45%	3%
Northwest Atlantic (FAO Area 21)	33	Miscellaneous coastal fishes			16	Unknown		37%	9%
Northeast Atlantic (FAO Area 27)	33	Sandeels NEI	<i>Ammodytes spp.</i>	Sweden, Norway, Germany, Denmark	368	O	Low	37%	9%
Northeast Atlantic (FAO Area 27)	33	Other miscellaneous coastal fishes			37	F	Intermediate	37%	9%
Southeast Atlantic (FAO Area 47)	33	Geelbek croaker	<i>Atractoscion aequidens</i>	South Africa	<1	O	Low	37%	7%
Southeast Atlantic (FAO Area 47)	33	Panga seabream	<i>Pterogymnus laniarius</i>	South Africa, Namibia	2	Unknown		37%	7%
Southeast Atlantic (FAO Area 47)	33	Red steenbras	<i>Petrus rupestris</i>	South Africa	<1	O	Low	37%	7%
Southeast Atlantic (FAO Area 47)	33	Other miscellaneous coastal fishes			106	O/F		37%	7%
Southern Atlantic Ocean (FAO Area 48)	33	Antarctic rockcods	<i>Notototheniidae</i>		0	Unknown		37%	7%
Southern Atlantic Ocean (FAO Area 48)	33	Humped rockcod	<i>Nototothenia gibberifrons</i>	UK	<1	Unknown		37%	7%
Southern Atlantic Ocean (FAO Area 48)	33	Marbled rockcod	<i>Nototothenia rossii</i>	UK	<1	Unknown		37%	7%
Southern Atlantic Ocean (FAO Area 48)	33	Other miscellaneous coastal fishes			0	Unknown		37%	7%
Southern Indian Ocean (FAO Area 48)	33	Antarctic silverfish			-	Unknown		37%	7%

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Southern Indian Ocean (FAO Area 48)	33	Marbled rockcod			-	Unknown		37%	7%
Southern Indian Ocean (FAO Area 48)	33	Other miscellaneous coastal fishes			<1	Unknown		37%	7%
Southwest Pacific (FAO Area 81)	33	Mullet NEI	<i>Mugilidae</i>	New Zealand, Australia	3	F	Low	37%	4%
Southwest Pacific (FAO Area 81)	33	Silver seabream	<i>Pagrus auratus</i>	New Zealand, Australia	6	F	Low	37%	4%
Southwest Pacific (FAO Area 81)	33	Other miscellaneous coastal fishes			14	F	High	37%	4%
Northeast Pacific Ocean (FAO Area 67)	33	Miscellaneous coastal fishes			76	Unknown		37%	3%
Northwest Atlantic (FAO Area 21)	43	American lobster	<i>Homarus americanus</i>	US, Canada	101	F	Low	28%	9%
Southeast Atlantic (FAO Area 47)	43	Cape rock lobster	<i>Jasus lalandii</i>	South Africa, Namibia	2	O	Low	28%	7%
Southeast Atlantic (FAO Area 47)	43	Southern spiny lobster	<i>Palinurus gilchristi</i>		<1	F	Low	28%	7%
Southeast Atlantic (FAO Area 47)	43	Other lobsters, spiny-rock lobsters			1	Unknown		28%	7%
Northwest Atlantic (FAO Area 21)	32	Atlantic cod	<i>Gadus morhua</i>	US, Portugal, Greenland, Canada	43	F	Low	26%	9%
Northwest Atlantic (FAO Area 21)	32	Haddock	<i>Melanogrammus aeglefinus</i>	US	29	U/F	Low	26%	9%
Northwest Atlantic (FAO Area 21)	32	Saithe	<i>Pollachius virens</i>	US, Canada	6	F	Low	26%	9%
Northwest Atlantic (FAO Area 21)	32	Silver hake	<i>Merluccius bilinearis</i>	US, Canada	18	F	Low	26%	9%
Northwest Atlantic (FAO Area 21)	32	Tusk (=cusk)	<i>Brosme brosme</i>	US, Norway, Greenland, Canada	<1	O	Low	26%	9%
Northwest Atlantic (FAO Area 21)	32	White hake	<i>Urophycis tenuis</i>	US, Spain, Portugal, Canada	4	O	Low	26%	9%
Northwest Atlantic (FAO Area 21)	32	Other cods, hakes, haddocks			2	F	Low	26%	9%
Northeast Atlantic (FAO Area 27)	32	Atlantic cod	<i>Gadus morhua</i>	Russia, Norway, Iceland, Faroe Islands	823	F	Low	26%	9%

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Northeast Atlantic (FAO Area 27)	32	Blue whiting (=poutassou)	<i>Micromesistius poutassou</i>	Russia, Norway, Iceland, Faroe Islands	635	F	Low	26%	9%
Northeast Atlantic (FAO Area 27)	32	Haddock	<i>Melanogrammus aeglefinus</i>	UK, Russia, Norway, Iceland	336	F	Low	26%	9%
Northeast Atlantic (FAO Area 27)	32	Norway pout	<i>Trisopterus esmarkii</i>	Norway, Iceland, Germany, Denmark	57	F	Low	26%	9%
Northeast Atlantic (FAO Area 27)	32	Polar cod	<i>Boreogadus saida</i>	Russia	17	U	Intermediate	26%	9%
Northeast Atlantic (FAO Area 27)	32	Saithe	<i>Pollachius virens</i>	UK, Norway, Iceland, Faroe Islands	395	F	Low	26%	9%
Northeast Atlantic (FAO Area 27)	32	Whiting	<i>Merlangius merlangus</i>	UK, Ireland, Iceland, France	32	O	Low	26%	9%
Northeast Atlantic (FAO Area 27)	32	Other cods, hakes, haddocks			184	F	Low	26%	9%
Southeast Atlantic (FAO Area 47)	32	Cape hakes	<i>Merluccius capensis</i> , <i>M. paradox</i>	Spain, South Africa	248	F/O	Intermediate	26%	7%
Southeast Atlantic (FAO Area 47)	32	Other cods, hakes, haddocks			7	Unknown		26%	7%
Southwest Pacific (FAO Area 81)	32	Blue grenadier	<i>Macruronus novaezelandiae</i>	New Zealand, South Korea, Australia	98	F	Intermediate	26%	4%
Southwest Pacific (FAO Area 81)	32	Gadiformes NEI	<i>Gadiformes</i>	New Zealand, South Korea	1	F	Low	26%	4%
Southwest Pacific (FAO Area 81)	32	Red codling	<i>Pseudophycis bachus</i>	New Zealand	5	Unknown		26%	4%
Southwest Pacific (FAO Area 81)	32	Southern blue whiting	<i>Micromesistius australis</i>	New Zealand	39	F	High	26%	4%
Southwest Pacific (FAO Area 81)	32	Southern hake	<i>Merluccius australis</i>	Spain, New Zealand, South Korea	13	F	Intermediate	26%	4%
Southwest Pacific (FAO Area 81)	32	Other cods, hakes, haddocks			6	Unknown		26%	4%
Northeast Pacific Ocean (FAO Area 67)	32	Alaska pollock	<i>Theragra chalcogramma</i>	US, Russia, Canada	850	F	Low	26%	3%
Northeast Pacific Ocean (FAO Area 67)	32	North Pacific hake	<i>Merluccius productus</i>	US, Canada	171	F	Low	26%	3%
Northeast Pacific Ocean (FAO Area 67)	32	Pacific cod	<i>Gadus macrocephalus</i>	US, Russia, Canada	224	F	Low	26%	3%

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Northeast Pacific Ocean (FAO Area 67)	32	Other cods, hakes, haddocks			<1	Unknown		26%	3%
Northwest Atlantic (FAO Area 21)	45	Pandalus shrimps NEI	<i>Pandalus spp.</i>	Canada	1	F	Low	25%	9%
Northwest Atlantic (FAO Area 21)	45	Other shrimps, prawns			287	F	Low	25%	9%
Northeast Atlantic (FAO Area 27)	45	Northern prawn	<i>Pandalus borealis</i>	Norway, Iceland, Faroe Islands, Estonia	47	U	Low	25%	9%
Northeast Atlantic (FAO Area 27)	45	Other shrimps, prawns			49	F	Low	25%	9%
Southeast Atlantic (FAO Area 47)	45	Shrimps, prawns			<1	Unknown		25%	7%
Southeast Atlantic (FAO Area 47)	53	Oysters			<1	Unknown		25%	7%
Southeast Atlantic (FAO Area 47)	57	Cape Hope squid	<i>Loligo reynaudi</i>		10	F	Low	25%	7%
Southeast Atlantic (FAO Area 47)	57	Other squids, cuttlefishes, octopuses			1	F	Intermediate	25%	7%
Northeast Pacific Ocean (FAO Area 67)	45	Natantian decapods NEI	<i>Natantia</i>	US, Canada	4	F	Intermediate	25%	3%
Northeast Pacific Ocean (FAO Area 67)	45	Ocean shrimp	<i>Pandalus jordani</i>	US	14	F	Intermediate	25%	3%
Northwest Atlantic (FAO Area 21)	35	Atlantic herring	<i>Clupea harengus</i>	US, Canada	256	F	Low	21%	9%
Northwest Atlantic (FAO Area 21)	35	Atlantic menhaden	<i>Brevoortia tyrannus</i>	US	182	F	Low	21%	9%
Northwest Atlantic (FAO Area 21)	35	Other herrings, sardines, anchovies			<1	Unknown		21%	9%
Northeast Atlantic (FAO Area 27)	35	Atlantic herring	<i>Clupea harengus</i>	Russia, Norway, Iceland, Faroe Islands	2,254	F	Low	21%	9%
Northeast Atlantic (FAO Area 27)	35	European pilchard (=sardine)	<i>Sardina pilchardus</i>	Spain, Portugal, Netherlands, France	131	F	Low	21%	9%
Northeast Atlantic (FAO Area 27)	35	European sprat	<i>Sprattus sprattus</i>	Sweden, Poland, Latvia, Denmark	575	F	Low	21%	9%

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Northeast Atlantic (FAO Area 27)	35	Other herrings, sardines, anchovies			5	O	Low	21%	9%
Southeast Atlantic (FAO Area 47)	35	Sardinellas NEI	<i>Sardinella spp.</i>	Angola	74	U/F	Low	21%	7%
Southeast Atlantic (FAO Area 47)	35	Southern African anchovy	<i>Engraulis capensis</i>	South Africa, Namibia	174	F	Low	21%	7%
Southeast Atlantic (FAO Area 47)	35	Southern African pilchard	<i>Sardinops ocellatus</i>	South Africa, Namibia	108	F/O	Intermediate	21%	7%
Southeast Atlantic (FAO Area 47)	35	Whitehead's round herring	<i>Etrumeus whiteheadi</i>	South Africa	41	U	Low	21%	7%
Southeast Atlantic (FAO Area 47)	35	Other herrings, sardines, anchovies			0	Unknown		21%	7%
Northeast Pacific Ocean (FAO Area 67)	35	Pacific herring	<i>Clupea pallasii</i>	US, Canada	52	Unknown		21%	3%
Northeast Pacific Ocean (FAO Area 67)	35	Other herrings, sardines, anchovies			30	Unknown		21%	3%
Eastern Central Pacific (FAO Area 77)	37	Chub mackerel	<i>Scomber japonicus</i>	US, Mexico	12	U	Low	17%	15%
Eastern Central Pacific (FAO Area 77)	37	Pacific jack mackerel	<i>Trachurus symmetricus</i>	US, Mexico	<1	U	Low	17%	15%
Eastern Central Pacific (FAO Area 77)	37	Other miscellaneous pelagic fishes			15	Unknown		17%	15%
Mediterranean and Black Sea (FAO Area 37)	37	Chub mackerel	<i>Scomber japonicus</i>	Turkey, Tunisia, Morocco, Greece	12	F	Intermediate	17%	
Mediterranean and Black Sea (FAO Area 37)	37	Jack and horse mackerels NEI	<i>Trachurus spp.</i>	Tunisia, Spain, Morocco, Algeria	51	F	Intermediate	17%	
Mediterranean and Black Sea (FAO Area 37)	37	Silversides (=sand smelts) NEI	<i>Atherinidae</i>	Turkey, Tunisia, Spain, Italy	3	U	Intermediate	17%	
Mediterranean and Black Sea (FAO Area 37)	37	Other miscellaneous pelagic fishes			67	Unknown		17%	
Western Central Atlantic (FAO Area 31)	55	Calico scallop	<i>Argopecten gibbus</i>		<1	Unknown		15%	10%

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Western Central Atlantic (FAO Area 31)	55	Other scallops, pectens			<1	Unknown		15%	10%
Eastern Central Pacific (FAO Area 77)	42	Dungeness crab	<i>Cancer magister</i>	US	1	Unknown		14%	15%
Eastern Central Pacific (FAO Area 77)	42	Other crabs, sea-spiders			16	Unknown		14%	15%
Western Central Atlantic (FAO Area 31)	42	Crabs, sea-spiders			60	Unknown		14%	10%
Northwest Pacific Ocean (FAO Area 61)	56	Japanese carpet shell	<i>Ruditapes philippinarum</i>	South Korea, Japan	54	Unknown		9%	33%
Northwest Pacific Ocean (FAO Area 61)	56	Other clams, cockles, arkshells			64	Unknown		9%	33%
Mediterranean and Black Sea (FAO Area 37)	56	Striped venus	<i>Chamelea gallina</i>	Turkey, Spain, Italy, Greece	42	Unknown		9%	
Mediterranean and Black Sea (FAO Area 37)	56	Other clams, cockles, arkshells			4	Unknown		9%	
Eastern Central Atlantic (FAO Area 34)	36	Atlantic bonito	<i>Sarda sarda</i>	Togo, Senegal, Morocco, Latvia	11	Unknown		6%	37%
Eastern Central Atlantic (FAO Area 34)	36	Frigate and bullet tunas	<i>Auxis thazard, A. rochei</i>	Togo, Sao Tome & Principe, Russia, Cape Verde	2	Unknown		6%	37%
Eastern Central Atlantic (FAO Area 34)	36	Little tunny (=Atl. Black skipjack)	<i>Euthynnus alletteratus</i>	Senegal, Ghana, Cote d'Ivoire	7	Unknown		6%	37%
Eastern Central Atlantic (FAO Area 34)	36	Swordfish	<i>Xiphias gladius</i>	Taiwan, Portugal, Morocco, Japan	3	Unknown		6%	37%
Eastern Central Atlantic (FAO Area 34)	36	Tuna-like fishes NEI	<i>Scombroidei</i>	Sierra Leone, Nigeria, Mauritania, Benin	4	Unknown		6%	37%
Eastern Central Atlantic (FAO Area 34)	36	Other tunas, bonitos, billfishes			11	Unknown		6%	37%

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Eastern Central Atlantic (FAO Area 34)	39	Marine fishes not identified			286	Unknown		6%	37%
Western Central Pacific (FAO Area 71)	36	Frigate and bullet tunas	<i>Auxis thazard</i> , <i>A. rochei</i>	Thailand, Philippines	158	F	Intermediate	6%	34%
Western Central Pacific (FAO Area 71)	36	Kawakawa	<i>Euthynnus affinis</i>	Thailand, Philippines, Malaysia, Indonesia	179	F	High	6%	34%
Western Central Pacific (FAO Area 71)	36	Tuna-like fishes NEI	<i>Scombroidei</i>	Viet Nam, New Caledonia, Malaysia, Australia	59	O	High	6%	34%
Western Central Pacific (FAO Area 71)	36	Other tunas, bonitos, billfishes			515	F	Intermediate	6%	34%
Western Central Pacific (FAO Area 71)	39	Marine fishes not identified	<i>Osteichthyes</i>	Viet Nam, Thailand, Malaysia, Indonesia	2470	F	High	6%	34%
Northwest Pacific Ocean (FAO Area 61)	36	Tunas, bonitos, billfishes			432	Unknown		6%	33%
Northwest Pacific Ocean (FAO Area 61)	39	Marine fishes not identified			2871	Unknown		6%	33%
Southwest Atlantic (FAO Area 41)	36	Swordfish	<i>Xiphias gladius</i>	Uruguay, Spain, Japan, Brazil	8	Unknown		6%	32%
Southwest Atlantic (FAO Area 41)	36	Other tunas, bonitos, billfishes			20	Unknown		6%	32%
Southwest Atlantic (FAO Area 41)	39	Marine fishes not identified			56	Unknown		6%	32%
Eastern Indian Ocean (FAO Area 57)	36	Kawakawa	<i>Euthynnus affinis</i>	Thailand, Malaysia, Indonesia, India	72	U	High	6%	32%
Eastern Indian Ocean (FAO Area 57)	36	Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>	Sri Lanka, Indonesia, India, Australia	37	U	High	6%	32%
Eastern Indian Ocean (FAO Area 57)	36	Seerfishes NEI	<i>Scomberomorus spp.</i>	Thailand, Malaysia, Bangladesh	12	F	High	6%	32%
Eastern Indian Ocean (FAO Area 57)	36	Tuna-like fishes NEI	<i>Scombroidei</i>	Timor-Leste, Sri Lanka, Portugal, Australia	15	Unknown		6%	32%

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Eastern Indian Ocean (FAO Area 57)	36	Other tunas, bonitos, billfishes			174	F	High	6%	32%
Eastern Indian Ocean (FAO Area 57)	39	Marine fishes not identified			2883	U-F	High	6%	32%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Albacore	<i>Thunnus alalunga</i>	Taiwan, Japan, Indonesia, India	39	F	Low	6%	25%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Bigeye tuna	<i>Thunnus obesus</i>	Taiwan, Spain, Seychelles, Japan, Sri Lanka, Spain, Maldives, Indonesia	100	F	Low	6%	25%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Skipjack tuna	<i>Katsuwonus pelamis</i>	Taiwan, Japan, Indonesia, Australia	431	N	Intermediate	6%	25%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Southern bluefin tuna	<i>Thunnus maccoyii</i>	Sri Lanka, Spain, Iran, France	8	O	Low	6%	25%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Yellowfin tuna	<i>Thunnus albacares</i>		259	F	Low	6%	25%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Billfishes			34	Unknown		6%	25%
Indian Ocean (FAO Areas 51, 57 and 68)	36	Other tunas and tuna-like species			496	Unknown		6%	25%
Southeast Pacific (FAO Area 87)	36	Eastern Pacific bonito	<i>Sarda chiliensis</i>	Peru, Chile	31	Unknown		6%	19%
Southeast Pacific (FAO Area 87)	36	Other tunas, bonitos, billfishes			58	Unknown		6%	19%
Mediterranean and Black Sea (FAO Area 37)	36	Plain bonito	<i>Orcynopsis unicolor</i>	Tunisia, Morocco, Algeria	<1	Unknown		6%	
Mediterranean and Black Sea (FAO Area 37)	36	Swordfish	<i>Xiphias gladius</i>	Spain, Morocco, Italy, Greece	12	Unknown		6%	
Mediterranean and Black Sea (FAO Area 37)	36	Other tunas, bonitos, billfishes			16	Unknown		6%	
Eastern Central Atlantic (FAO Area 34)	31	Common sole	<i>Solea solea</i>	Portugal, Morocco, Italy, Greece	4	O	High	3%	37%
Eastern Central Atlantic (FAO Area 34)	31	Flatfishes NEI	<i>Pleuronectiformes</i>	Spain, Morocco, Mauritania, Guinea	7	O	High	3%	37%
Eastern Central Atlantic (FAO Area 34)	31	Tonguefishes	<i>Cynoglossidae</i>	Sierra Leone, Nigeria, South Korea, Ghana	12	O	High	3%	37%

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Eastern Central Atlantic (FAO Area 34)	31	Other flounders, halibuts, soles			7	O	High	3%	37%
Southwest Atlantic (FAO Area 41)	31	Flounders, halibuts, soles			10	Unknown		3%	32%
Mediterranean and Black Sea (FAO Area 37)	31	Common sole	<i>Solea solea</i>	Turkey, Italy, Greece, France	30	O	Low	3%	
Mediterranean and Black Sea (FAO Area 37)	31	Other flounders, halibuts, soles			3	Unknown		3%	
Western Central Atlantic (FAO Area 31)	38	Sharks, rays, chimaeras			24	Unknown			10%
Western Central Atlantic (FAO Area 31)	52	Stromboid conchs	<i>Strombus spp.</i>	Turks & Caicos, Jamaica, Dominican Rep., Belize	23	F/O	Low		10%
Western Central Atlantic (FAO Area 31)	52	Other abalones, winkles, conchs			2	Unknown			10%
Northeast Atlantic (FAO Area 27)	54	Blue mussel	<i>Mytilus edulis</i>	UK, Spain, France, Denmark	42	Unknown			9%
Northeast Atlantic (FAO Area 27)	54	Other mussels			1	Unknown			9%
Southeast Atlantic (FAO Area 47)	52	Perlemoen abalone	<i>Haliotis midae</i>		0	O	Low		7%
Southern Atlantic Ocean (FAO Area 48)	46	Antarctic krill	<i>Euphausia superba</i>	Russia, Norway, South Korea, Japan	126	U/F	Intermediate		7%
Southern Indian Ocean (FAO Area 48)	46	Antarctic krill			-	U/F	Intermediate		7%
Southern Pacific Ocean (FAO Area 48)	46	Antarctic krill	<i>Euphausia superba</i>		-	U-F	Intermediate		7%
Mediterranean and Black Sea (FAO Area 37)	24	Black and Caspian Sea sprat	<i>Clupeonella cultriventris</i>	Ukraine, Russia	17	O	Low		
Mediterranean and Black Sea (FAO Area 37)	24	Pontic shad	<i>Alosa pontica</i>	Ukraine, Russia, Romania, Bulgaria	<1	O	Low		

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Mediterranean and Black Sea (FAO Area 37)	24	Other shads			5	Unknown			
Mediterranean and Black Sea (FAO Area 37)	54	Mediterranean mussel	<i>Mytilus galloprovincialis</i>	Ukraine, Turkey, Tunisia, Greece	8	Unknown			
TOTAL					22,736				

Low Risk/Green

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Northwest Atlantic (FAO Area 21)	37	Atlantic mackerel	<i>Scomber scombrus</i>	US, Canada	65	F	Low	17%	9%
Northwest Atlantic (FAO Area 21)	37	Capelin	<i>Mallotus villosus</i>	Greenland, Canada	35	F	Low	17%	9%
Northwest Atlantic (FAO Area 21)	37	Other miscellaneous pelagic fishes			4	Unknown		17%	9%
Northeast Atlantic (FAO Area 27)	37	Atlantic horse mackerel	<i>Trachurus trachurus</i>	UK, Norway, Netherlands, Ireland	234	F	Low	17%	9%
Northeast Atlantic (FAO Area 27)	37	Atlantic mackerel	<i>Scomber scombrus</i>	UK, Norway, Ireland, Iceland	632	F	Low	17%	9%
Northeast Atlantic (FAO Area 27)	37	Capelin	<i>Mallotus villosus</i>	Russia, Norway, Iceland	327	O	Low	17%	9%
Northeast Atlantic (FAO Area 27)	37	Other miscellaneous pelagic fishes			77	F	High	17%	9%
Southwest Pacific (FAO Area 81)	37	Barracudas NEI	<i>Sphyræna spp. Scomber</i>		-	F	Low	17%	4%
Southwest Pacific (FAO Area 81)	37	Blue mackerel	<i>australasicus</i>	New Zealand	10	U	Intermediate	17%	4%
Southwest Pacific (FAO Area 81)	37	Butterfishes, pomfrets NEI	<i>Stromateidae</i>		-	Unknown		17%	4%

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Southwest Pacific (FAO Area 81)	37	Greenback horse mackerel	<i>Trachurus declivis</i>	Australia	<1	F	Intermediate	17%	4%
Southwest Pacific (FAO Area 81)	37	Jack and horse mackerels NEI	<i>Trachurus spp.</i>	New Zealand, South Korea	41	F	High	17%	4%
Southwest Pacific (FAO Area 81)	37	Mackerels NEI	<i>Scombridae</i>	Australia	<1	U	Intermediate	17%	4%
Southwest Pacific (FAO Area 81)	37	White trevally	<i>Pseudocaranx dentex</i>	New Zealand, Australia	3	F	Intermediate	17%	4%
Southwest Pacific (FAO Area 81)	37	Other miscellaneous pelagic fishes			<1	Unknown		17%	4%
Southwest Pacific (FAO Area 81)	37	Cuttlefish, bobtail squids NEI	<i>Sepiidae, Sepiolidae</i>	Australia	<1	Unknown		17%	4%
Southwest Pacific (FAO Area 81)	37	Octopuses, etc. NEI	<i>Octopodidae</i>	New Zealand, Australia	<1	U	High	17%	4%
Southwest Pacific (FAO Area 81)	37	Various squids NEI	<i>Loliginidae, Ommastrephidae</i>	New Zealand, South Korea, Australia	20	F	High	17%	4%
Southwest Pacific (FAO Area 81)	37	Wellington flying squid	<i>Nototodarus sloanii</i>	New Zealand, Japan	47	F	High	17%	4%
Northeast Pacific Ocean (FAO Area 67)	37	Chub mackerel	<i>Scomber japonicus</i>	US	<1	F	Low	17%	3%
Northeast Pacific Ocean (FAO Area 67)	37	Other miscellaneous pelagic fishes			<1	Unknown		17%	3%
Northwest Atlantic (FAO Area 21)	55	American sea scallop	<i>Placopecten magellanicus</i>	US, Canada	281	F	Low	15%	9%
Northwest Atlantic (FAO Area 21)	55	Atlantic bay scallop	<i>Argopecten irradians</i>	US	<1	Unknown		15%	9%
Northwest Atlantic (FAO Area 21)	55	Iceland scallop	<i>Chlamys islandica</i>	Greenland, Canada	<1	F	Low	15%	9%
Southeast Atlantic (FAO Area 47)	42	West African geryon	<i>Chaceon maritae</i>		0	O	Intermediate	14%	7%
Southeast Atlantic (FAO Area 47)	42	Other crabs, sea-spiders			<1	Unknown		14%	7%
Northeast Pacific Ocean (FAO Area 67)	42	Dungeness crab	<i>Cancer magister</i>	US, Canada	33	F	Intermediate	14%	3%
Northeast Pacific Ocean (FAO Area 67)	42	Pacific rock crab	<i>Cancer productus</i>	US	<1	F	Low	14%	3%
Northeast Pacific Ocean (FAO Area 67)	42	Other crabs, sea-spiders			28	F	Low	14%	3%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Northwest Atlantic (FAO Area 21)	56	Atlantic surf clam	<i>Spisula solidissima</i>	US, Canada	123	F	Low	9%	9%
Northwest Atlantic (FAO Area 21)	56	Northern quahog (=hard clam)	<i>Mercenaria mercenaria</i>	Canada	0.5	F	Low	9%	9%
Northwest Atlantic (FAO Area 21)	56	Ocean quahog	<i>Arctica islandica</i>	US	131	F	Low	9%	9%
Northwest Atlantic (FAO Area 21)	56	Sand gaper	<i>Mya arenaria</i>	US, Canada	9	F	Intermediate	9%	9%
Northwest Atlantic (FAO Area 21)	56	Other clams, cockles, arkshells			26	Unknown		9%	9%
Western Indian Ocean (FAO Area 51)	36	Kawakawa	<i>Euthynnus affinis</i>	Yemen, Maldives, Iran, India	52	Unknown		6%	18%
Western Indian Ocean (FAO Area 51)	36	Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>	Madagascar, Iran, India	64	F/O	High	6%	18%
Western Indian Ocean (FAO Area 51)	36	Tuna-like fishes NEI	<i>Scombroidei</i>	Zanzibar, Tanzania, Pakistan, Comoros	9	Unknown		6%	18%
Western Indian Ocean (FAO Area 51)	36	Other tunas, bonitos, billfishes			175	Unknown		6%	18%
Western Indian Ocean (FAO Area 51)	39	Marine fishes not identified			764	Unknown		6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Albacore	<i>Thunnus alalunga</i>	Taiwan, Japan, Indonesia, China	175	North: O, South: N	Low	6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Bigeye tuna	<i>Thunnus obesus</i>	South Korea, Japan, Indonesia, Ecuador	223	East: F, West: F	Low	6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Pacific bluefin tuna	<i>Thunnus orientalis</i>	US, Taiwan, Mexico, Japan	19	O	Low	6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Skipjack tuna	<i>Katsuwonus pelamis</i>	Philippines, South Korea, Japan, Indonesia	2017	East: F, West: N	East: Intermediate, West: Low	6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Southern bluefin tuna	<i>Thunnus maccoyii</i>	Taiwan, New Zealand, Japan, Australia	1	O	Low	6%	18%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
71, 77, 81, 87 and 88) Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Yellowfin tuna	<i>Thunnus albacares</i>	Philippines, Mexico, Japan, Indonesia	714	East: F, West: N	Low	6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Billfishes			70	Unknown		6%	18%
Pacific Ocean (FAO Areas 61, 67, 71, 77, 81, 87 and 88)	36	Other tunas and tuna-like species			1414	Unknown		6%	18%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Albacore	<i>Thunnus alalunga</i>	Taiwan, Spain, South Africa, Namibia	42	North: O, South: F, Med: ?	Low	6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Atlantic bluefin tuna	<i>Thunnus thynnus</i>	Spain, Morocco, Italy, France	21	West: O, East: O	Low	6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Bigeye tuna	<i>Thunnus obesus</i>	Taiwan, Spain, Japan, Ghana	82	F	Low	6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Skipjack tuna	<i>Katsuwonus pelamis</i>	Spain, Netherlands Antilles, Ghana, Brazil	152	West: N, East: N	Low	6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Southern bluefin tuna	<i>Thunnus maccoyii</i>	Taiwan, South Africa, South Korea, Japan	1	O	Low	6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Yellowfin tuna	<i>Thunnus albacares</i>	Spain, Netherlands Antilles, Ghana, France	120	F	Low	6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Billfishes			40	Unknown		6%	17%
Atlantic Ocean (FAO Areas 21, 27, 31, 34, 37, 41, 47, and 48)	36	Other tunas and tuna-like species			115	Unknown		6%	17%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
31, 34, 37, 41, 47, and 48) Eastern Central Pacific (FAO Area 77)	36	Other tunas, bonitos, billfishes			40	Unknown		6%	15%
Eastern Central Pacific (FAO Area 77)	39	Marine fishes not identified		Venezuela, Trinidad & Tobago, St. Vincent & Grenadines, Mexico	79	Unknown		6%	15%
Western Central Atlantic (FAO Area 31)	36	Atlantic bonito	<i>Sarda sarda</i>		2	Unknown		6%	10%
Western Central Atlantic (FAO Area 31)	36	Atlantic Spanish mackerel	<i>Scomberomorus maculatus</i>	US, Mexico	7	Unknown		6%	10%
Western Central Atlantic (FAO Area 31)	36	Cero	<i>Scomberomorus regalis</i>	Puerto Rico, Dominican Republic	<1	Unknown		6%	10%
Western Central Atlantic (FAO Area 31)	36	King mackerel	<i>Scomberomorus cavalla</i>	Venezuela, US, Trinidad & Tobago, Mexico	11	O	High	6%	10%
Western Central Atlantic (FAO Area 31)	36	Serra Spanish mackerel	<i>Scomberomorus brasiliensis</i>	Venezuela, Trinidad & Tobago, Guyana, Grenada	4	Unknown		6%	10%
Western Central Atlantic (FAO Area 31)	36	Other tunas, bonitos, billfishes			14	Unknown		6%	10%
Southeast Atlantic (FAO Area 47)	36	Other tunas, bonitos, billfishes			15	Unknown		6%	7%
Southeast Atlantic (FAO Area 47)	37	Cape horse mackerel	<i>Trachurus capensis</i>	Spain, South Africa, Namibia	233	F	Intermediate	6%	7%
Southeast Atlantic (FAO Area 47)	37	Cunene horse mackerel	<i>Trachurus trecae</i>	Angola	14	O	Low	6%	7%
Southeast Atlantic (FAO Area 47)	37	Other miscellaneous pelagic fishes			14	Unknown		6%	7%
Southeast Atlantic (FAO Area 47)	39	Marine fishes not identified			46	Unknown		6%	7%
Northwest Atlantic (FAO Area 21)	31	American plaice	<i>Hippoglossoides</i>	US, Spain, Portugal, Canada	4	O	Low	3%	9%
Northwest Atlantic (FAO Area 21)	31	Flatfishes NEI	<i>Pleuronectiformes</i>	Faroe Islands, Canada	<1	Unknown		3%	9%
Northwest Atlantic (FAO Area 21)	31	Flounders, halibuts, soles	<i>Paralichthys oblongus</i>	US, Spain, Portugal, Canada	<1	Unknown		3%	9%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	Uncertainty (State of Exploitation)	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Northwest Atlantic (FAO Area 21)	31	Greenland halibut	<i>Reinhardtius hippoglossoides</i>	Spain, Russia, Greenland, Canada	54	F	Low	3%	9%
Northwest Atlantic (FAO Area 21)	31	Summer flounder	<i>Paralichthys dentatus</i>	US	11	F	Low	3%	9%
Northwest Atlantic (FAO Area 21)	31	Winter flounder	<i>Pseudopleuronectes americanus</i>	US, Canada	4	Unknown		3%	9%
Northwest Atlantic (FAO Area 21)	31	Witch flounder	<i>Glyptocephalus cynoglossus</i>	US, Spain, Portugal, Canada	3	O	Low	3%	9%
Northwest Atlantic (FAO Area 21)	31	Yellowtail flounder	<i>Limanda ferruginea</i>	US, St. Pierre & Miquelon, Spain, Canada	8	F/U	Low	3%	9%
Northwest Atlantic (FAO Area 21)	31	Other flounders, halibuts, soles			3	F	Low	3%	9%
Northeast Atlantic (FAO Area 27)	31	European plaice	<i>Pleuronectes platessa</i>	UK, Netherlands, Iceland, Denmark	78	F	Low	3%	9%
Northeast Atlantic (FAO Area 27)	31	Other flounders, halibuts, soles			151	O	Low	3%	9%
Northeast Pacific Ocean (FAO Area 67)	31	Pacific halibut	<i>Hippoglossus stenolepis</i>	US, Canada	31	F	Low	3%	3%
Northeast Pacific Ocean (FAO Area 67)	31	Yellowfin sole	<i>Limanda aspera</i>	US	101	U	Low	3%	3%
Northeast Pacific Ocean (FAO Area 67)	31	Other flounders, halibuts, soles			150	F-U	Low	3%	3%
TOTAL					9.473				

APPENDIX 3 – FAO Ocean Area Boundary Descriptions

Northwest Atlantic Ocean (FAO Area 21):

The Northwest Atlantic corresponding to the NAFO Convention Area comprises the waters of the Northwest Atlantic Ocean north of 35°00'N latitude and west of the line extending due north from 35°00'N latitude and 42°00'W longitude to 59°00'N latitude, thence due west to 44°00'W longitude, and thence due north to the coast of Greenland, and the waters of the Gulf of St. Lawrence, Davis Strait and Baffin Bay south of 78°10'N latitude.

(<http://www.fao.org/fishery/area/Area21/en>)

Northeast Atlantic Ocean (FAO Area 27):

The Northeast Atlantic (FAO Area 27) corresponds to all waters of the Atlantic and Arctic Oceans and their dependent seas bounded by a line from the geographic North Pole along the meridian of 40°00' west longitude to the north coast of Greenland; thence in an easterly and southerly direction along the coast of Greenland to a point at 44°00' west longitude; thence due south to 59°00' north latitude; thence due east to 42°00' west longitude; thence due south to 36°00' north latitude; thence due east to a point on the coast of Spain (Punta Marroqui isthmus) at 5°36' west longitude; thence in a northwesterly and northerly direction along the southwest coast of Spain, the coast of Portugal, the north-west and north coasts of Spain, and the coasts of France, Belgium, the Netherlands, and the Federal Republic of Germany (see note below) to the western terminus of its boundary with Denmark; thence along the west coast of Jutland to Thyborøn; thence in a southerly and easterly direction along the south coast of the Limfjord to Egensekloster Point; thence in a southerly direction along the east coast of Jutland to the eastern terminus of the boundary of Denmark with the Federal Republic of Germany; thence along the coasts of the Federal Republic of Germany, the German Democratic Republic, and Poland, the west coast of the USSR (see note below), the coasts of Finland, Sweden, and Norway, and the north coast of the USSR to Khaborova; thence across the western entry of the Strait of Yugorskiy Shar; thence in a westerly and northerly direction along the coast of Vaigach Island; thence, across the western entry of the Strait of the Karskiye Vorota; thence west and north along the coast of the south island of Novaya Zemlya; thence across the western entry of the Strait of Matochkin Shar; thence along the west coast of the north island of Novaya Zemlya to a point at 68°30' east longitude; thence due north to the geographic North Pole.

(<http://www.fao.org/fishery/area/Area27/en>)

Western Central Atlantic (FAO Area 31)

All marine waters of the Western Central Atlantic bounded by a line beginning from a point on the coast of South America at 5°00'N latitude; thence in a northerly direction along this coast past the Atlantic entry to the Panama Canal; thence along the coasts of Central and North America to a point on this coast at 35°00'N latitude; thence due east along this parallel to 42°00'W longitude; thence due north along this meridian to 36°00'N latitude; thence due east along this parallel to 40°00'W longitude; thence due south along this meridian to 5°00'N latitude; thence due west along this parallel to the original point at 5°00'N latitude on the coast of South America.

(<http://www.fao.org/fishery/area/Area31/en>)

Eastern Central Atlantic (FAO Area 34)

The waters bounded by a line running from a point of the high-water mark of North Africa at 5°36' west longitude; thence running in a southerly direction following the high-water mark along the coast of Africa to a point at Punta do Padrao at 6°04'36" south latitude and 12°19'48" east longitude; thence along a rhumb line in a northwesterly direction to a point at 6°00' south latitude and 12°00' east longitude; thence due west along 6°00' south latitude to 20°00' west longitude; thence due north to the Equator; thence due west to 30°00' west longitude; thence due north to 5°00' north latitude; thence due west to 40°00' west longitude, thence due north to 36°00' north latitude; thence due east to Punta Marroqui at 5°36' west longitude and 36°00' north latitude; thence due south to the original point on the African coast. (<http://www.fao.org/fishery/area/Area34/en>)

Mediterranean and Black Sea (FAO Area 37)

The Mediterranean and Black Sea Statistical Area comprises all the marine waters bounded, to the west, by a line running from a point on the coast of Morocco at 5°36'W longitude, thence due north to the coast of Spain (isthmus of Punta Marroqui) and, to the southeast, by the northern entrance to the Suez Canal. Marine waters include brackishwaters, lagoons and all other areas where fishes and other organisms of marine origin are predominant.

(<http://www.fao.org/fishery/area/Area37/en>)

Southwest Atlantic (FAO Area 41)

The Southwest Atlantic statistical area comprises all the marine waters bounded by a line starting from a point on the coast of South America at 5°00'N latitude; thence due east to 30°00'W longitude; thence due south to the Equator; thence due east to 20°00'W longitude; thence due south to 50°00'S latitude, thence due west to 50°00'W longitude; thence due south to 60°00'S latitude; thence due west to 67°16'W longitude; thence due north to the point at 56°22'S latitude - 67°16'W longitude; thence due east along a line at 56°22'S latitude to the point at 65°43'W longitude, thence following a line joining the points at 55°22'S - 65°43'W, 55°11'S - 66°04'W, 55°07'S - 66°25'W; thence in a northerly direction along the coast of South America to the starting point. (<http://www.fao.org/fishery/area/Area41/en>)

Southeast Atlantic (FAO Area 47)

The Southeast Atlantic comprises all the marine waters, bounded by a line beginning at a point on the west coast of the African continent at 6°04'36" S latitude and 12°19'48" E longitude; thence running in a northwesterly direction along a rhumb line to a point at the intersection of the meridian 12°00'E with the parallel 6°00'S; thence due west along this parallel to the meridian 20°00'W; thence due south along this meridian to the parallel 50°00'S, thence due east along this parallel to the meridian 30°00'E; thence due north along this meridian to the coast of the African continent; thence in a westerly and northerly direction along the coast of Africa to the original point of departure. (<http://www.fao.org/fishery/area/Area47/en>)

Southern Atlantic Ocean (FAO Area 48)

All marine waters of Antarctic Atlantic bounded by a line commencing from a point at longitude 70°00'W on the coast of Antarctica at Palmer Land; thence running across the George VI Sound to a point at longitude 70°00'W on the south coast of Alexander Island; thence along the east coast of this island to a point on the northeast coast at longitude 70°00'W; thence running due north to latitude 60°00'S; thence due east along this parallel to 50°00'W longitude; thence due north to 50°00'S latitude; thence due east along this parallel to 30°00'E longitude; thence due south to Princess Ragnhild coast in Antarctica; thence running in a westerly direction along the coast of Antarctica to the point of departure. (<http://www.fao.org/fishery/area/Area48/en>)

Western Indian Ocean (FAO Area 51)

All marine waters of the Western Indian Ocean bounded by a line commencing on the southeast coast of India at 77°00'E longitude where the boundary between the States of Kerala and Tamil Nadu meet at the sea; thence due south to the Equator; thence due east to 80°00'E longitude; thence due south to latitude 45°00'S; thence running due west along parallel 45°00'S from 80°00'E longitude to 30°00'E longitude; thence due north to the coast of southern Africa; thence in a northeasterly direction along the east coast of the African continent to the northern entrance to the Suez Canal; thence running in a southeasterly direction along the east coast of the Red Sea; thence round the Arabian Peninsula and along the coast of Iran, Pakistan and India to the point of departure. (<http://www.fao.org/fishery/area/Area51/en>)

Eastern Indian Ocean (FAO Area 57)

All marine waters of the Eastern Indian Ocean bounded by a line commencing on the southeast coast of India at 77°00'E longitude where the boundary between the States of Kerala and Tamil Nadu meet at the sea; thence due south to the Equator; thence due east to 80°00'E longitude; thence due south along the meridian 80°00'E to 55°00'S latitude; thence running along this parallel to 150°00'E longitude; thence due north to a point at 37°31'30"S latitude; thence on a rhumb line in a northwesterly direction to meet the southeast coast of Australia at the boundary between the States of New South Wales and Victoria at Cape Howe; thence in a westerly direction round the south, the west and the northwest coasts of Australia to a point at 129°00'E longitude at the boundary between the State of Western Australia and the Northern Territory; thence running due north to 8°S latitude thence due west to 113°28'E longitude; thence due north to meet the south coast of Java at 8°23'S latitude; thence in a westerly direction along the coasts of Java and Sumatra; thence round the coast of Sumatra running south in the Strait of Malacca; thence across the Strait at 2°30'N latitude to meet the coast of the Malay Peninsula; thence in a northerly and westerly direction along the coasts facing the Bay of Bengal to the point of departure. (<http://www.fao.org/fishery/area/Area57/en>)

Southern Indian Ocean (FAO Area 58)

All marine waters of the Antarctic and Southern Indian Ocean bounded by a line commencing from a point at longitude 30°00'E on Princess Ragnhild coast in Antarctica; thence due north to 45°00'S latitude; thence due east to 80°00'E longitude; thence due south to 55°00'S latitude; thence running due east along this parallel to 150°00'E

longitude; thence due south to the coast of Antarctica between Oates Land and George V Land; thence running in a westerly direction along the coast of Antarctica to the point of departure.

(<http://www.fao.org/fishery/area/Area58/en>)

Northwest Pacific (FAO Area 61)

All marine waters of the Northwest Pacific bounded by a line commencing from a point on the mainland coast of Russia in the Western Bering Sea at 175°00'W longitude and running due south along this meridian to 20°00'N latitude; thence running due west along this parallel to 115°00'E longitude; thence due south to 15°00'N latitude; thence due west to a point on the southeast coast of Asian Mainland at 15°00'N latitude; thence in a northeasterly direction along the coasts of Asian and Russian Mainland to the point of departure.

(<http://www.fao.org/fishery/area/Area61/en>)

Northeast Pacific (FAO Area 67)

All marine waters of the Northeast Pacific bounded by a line commencing from a point on the mainland coast of Russia in the Western Bering Sea at 175°00'W longitude; thence in a northeasterly direction along the coast to Mys Dazhneva; thence across the Bering Strait in an easterly direction to Cape Prince of Wales; thence in a southeasterly direction along the mainland coast of Alaska, Canada and USA to 40°30'N latitude; thence due west to 130°00'W longitude; thence due south to 40°00'N latitude; thence along this parallel to 175°00'W longitude; thence due north along this meridian to the point of departure. (<http://www.fao.org/fishery/area/Area67/en>)

Western Central Pacific (FAO Area 71)

All marine waters of the Western Central Pacific bounded by a line commencing from a point on the southeast coast of Asian Mainland at 15°00'N latitude; thence due east to 115°00'E longitude; thence due north to 20°00'N latitude; thence running due east along this parallel to 175°00'W longitude; thence running due south along this meridian to 25°00'S latitude; thence due west to 155°00'E longitude; thence due south to 28°09'S latitude; thence due west to meet a point on the coast of Australia at the boundary between the States of New South Wales and Queensland; thence due north along the coast of Queensland and the State of Northern Territory to a point at 129°00'E longitude at the boundary between the State of Western Australia and the Northern Territory; thence due north to 8°S latitude thence due west to 113°28'E longitude; thence due north to meet the south coast of Java at 8°23'S latitude; thence in a westerly direction along the coast of Java; thence across the marine waters between Java and Sumatra; thence along the east coast of Sumatra and running due north in the Strait of Malacca to 2°30'N latitude; thence across the Strait to meet the coast of Malay Peninsula; thence round the coasts of the Peninsula and running due north along the coast of Asian Mainland to the point of departure. (<http://www.fao.org/fishery/area/Area71/en>)

Eastern Central Pacific (FAO Area 77)

All marine waters of the Eastern Central Pacific bounded by a line commencing from a point on the Pacific coast of USA mainland at 40°30'N latitude; thence due west to 130°00'W longitude; thence due south to 40°00'N latitude; thence running due west along this parallel to 175°00'W longitude; thence running due south along this meridian to 25°00'S latitude; thence due east to 120°00'W longitude; thence due north to 5°00'N latitude; thence running due east along this parallel to 79°52'W longitude; thence in a rhumb line in a northeasterly direction to meet the Pacific coast of South American mainland at the frontier between Panama and Colombia; thence due north in a northwesterly direction round the coast of central America, Mexico and California to the point of departure.

(<http://www.fao.org/fishery/area/Area77/en>)

Southwest Pacific (FAO Area 81)

All marine waters of the Southwest Pacific bounded by a line commencing from a point on the eastern coast of Australia at the boundary between the States of New South Wales and Queensland at 28°09'S latitude; thence due east to 155°00'E longitude; thence due north to 25°00'S latitude; thence running due east along this parallel to 120°00'W longitude; thence due south to 60°00'S latitude; thence running due west along this parallel to 150°00'E longitude; thence due north along meridian 150°00'E to 37°31'50"S latitude; thence in a rhumb line in a westerly direction to meet the coast of Australia at the boundary between the States of New South Wales and Victoria at Cape Howe at 37°30'22"S latitude and 149°58'30"E longitude; thence due north along the coast of New South Wales to the point of departure. (<http://www.fao.org/fishery/area/Area81/en>)

Southeast Pacific (FAO Area 87)

All marine waters of the Southeast Pacific bounded by a line commencing from a point on the coast of South American Mainland at the border between Panama and Colombia at 7°12'39"N latitude and 77°53'20"W longitude; thence running on a rhumb line in a southwesterly direction to 5°00'N latitude and 79°52"W longitude; thence running due west along the parallel 5°00'N to the meridian 120°00'W; thence due south to 60°00'S latitude; thence due east along this parallel to a point at 67°16'W longitude; thence due north to 56°22'S latitude; thence due east to 65°43'W longitude; thence due north to 55°22'S latitude; thence in a northwesterly direction along a rhumb line and across the Beagle Canal to the border between Chile and Argentina; thence in a northerly direction along the Pacific coast of South America to the point of departure. (<http://www.fao.org/fishery/area/Area87/en>)

Southern/Antarctic Pacific (FAO Area 88)

All marine waters of the Antarctic Pacific bounded by a line commencing from a point on the coast of Antarctica between Oates Land and George V Land at 150°00'E longitude thence due north to 60°00'S latitude; thence running due east along this parallel to 70°00'W longitude; thence due south to a point at 70°00'W longitude on the northern coast of Alexander Island; thence along the east coast of the island to a point on the south coast at 70°00'W longitude; thence across the George VI Sound to a point at 70°00'W longitude on the coast of Antarctica at Palmer Land; thence due west along the coast of Antarctica to the point of departure. (<http://www.fao.org/fishery/area/Area88/en>)

APPENDIX 4 – 2014 U.S. Edible Imports of Wild-Caught Products

Source: NOAA Office of Science and Technology. NMFS. Commercial Fisheries Statistics. Annual Trade Data Summarized by Country/Association. <http://www.st.nmfs.noaa.gov/commercial-fisheries/foreign-trade/applications/annual-product-by-summarized-countryassociation> Online query: database accessed 5/20/15.

Imports of shrimp, oysters, clams, and other molluscs were not included because the majority of these imports are of a farmed origin. However, it has been estimated that about 10% of the imports of these products are of a wild-caught origin.

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
35	ANCHOVY CANNED IN OIL	2,379,889	25,687,983	21%
35	ANCHOVY CANNED NOT IN OIL > 6.8KG	118,925	1,179,425	21%
35	ANCHOVY CANNED NOT IN OIL NOT > 6.8KG	179,563	1,257,263	21%
35	ANCHOVY FRESH	41,310	120,185	21%
35	ANCHOVY SALTED > 6.8KG	293,222	781,943	21%
35	ANCHOVY SALTED IN ATC NOT > 6.8KG	3,371	39,385	21%
35	ANCHOVY SALTED NOT IN ATC NOT > 6.8KG	394,762	2,272,569	21%
34	ATKA MACKEREL FROZEN	155,169	570,694	50%
36	BONITO CANNED IN OIL	143,123	1,139,161	6%
36	BONITO CANNED NOT IN OIL	316,510	1,182,467	6%
36	BONITO, YELLOWTAIL, POLLOCK CANNED IN OIL	72,642	618,570	6%
36	BONITO, YELLOWTAIL, POLLOCK CANNED NOT IN OIL	2,019,905	5,552,733	6%
37	BUTTERFISH FROZEN	1,180,408	3,661,336	17%
37	CAPELIN FROZEN	5,393,441	5,468,234	17%
52	CONCH LIVE/FRESH	484,454	5,728,131	Unknown
42	CRAB DUNGENESS FROZEN	3,703	36,801	14%
42	CRAB KING FROZEN	12,328,375	243,697,785	14%
42	CRAB NSPF FROZEN	11,075,857	104,340,355	14%
42	CRAB NSPF LIVE/FRESH/SALTED/BRINE	1,653,984	19,330,579	14%
42	CRAB NSPF OTHER PREPARATIONS	801,969	8,181,217	14%
42	CRAB NSPF OTHER PREPARATIONS IN ATC	212,078	1,146,040	14%
42	CRAB PRODUCTS PREPARED DINNERS IN ATC	38,700	410,632	14%
42	CRAB PRODUCTS PREPARED DINNERS NOT IN ATC	87,063	1,711,615	14%
42	CRAB SNOW FROZEN	45,491,197	504,427,460	14%
42	CRABMEAT DUNGENESS IN ATC	5,693	182,794	14%
42	CRABMEAT KING FROZEN	19,779	281,622	14%
42	CRABMEAT KING IN ATC	158,560	2,505,268	14%
42	CRABMEAT NSPF FRESH/DRIED/SALTED/BRINE	217,862	3,407,613	14%
42	CRABMEAT NSPF FROZEN	1,263,469	19,601,400	14%
42	CRABMEAT NSPF IN ATC	7,586,849	175,031,494	14%
42	CRABMEAT NSPF OTHER PREPARATIONS	1,634,976	27,553,741	14%
42	CRABMEAT SNOW (OPILIO) FROZEN	474,203	7,017,744	14%
42	CRABMEAT SNOW (OPILIO) IN ATC	701,514	11,862,846	14%
42	CRABMEAT SNOW OTHER FROZEN	296,049	3,302,938	14%
42	CRABMEAT SNOW OTHER IN ATC	481,696	4,154,679	14%
42	CRABMEAT SWIMMING (CALLINECTES) FROZEN	809,015	15,302,311	14%
42	CRABMEAT SWIMMING (CALLINECTES) IN ATC	13,800,413	328,662,864	14%
42	CRABMEAT SWIMMING (PORTUNIDAE) FROZEN	700,358	11,474,693	14%
42	CRABMEAT SWIMMING (PORTUNIDAE) IN ATC	4,783,687	111,081,484	14%
47	CRUSTACEANS NSPF FROZEN	902,337	14,405,072	18%
47	CRUSTACEANS NSPF LIVE/FRESH/DRIED/SALTED/BRINE	115,268	1,249,917	18%
47	CRUSTACEANS NSPF PREPARED/PRESERVED	8,847,122	49,189,621	18%
47	CRUSTACEANS NSPF PRODUCTS PREPARED DINNERS	495,356	2,233,729	18%
57	CUTTLEFISH FROZEN/DRIED/SALTED/BRINE	2,316,843	11,716,796	25%
57	CUTTLEFISH LIVE/FRESH	151,608	748,970	25%
57	CUTTLEFISH NSPF PREPARED/PRESERVED	426,835	4,324,152	25%
57	CUTTLEFISH, SQUID PRODUCTS PREPARED DINNERS	185,044	773,470	25%
33	DOLPHINFISH FILLET FROZEN	19,945,014	161,979,738	37%
33	DOLPHINFISH FRESH	6,522,105	38,811,901	37%

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
22	EELS FRESH	5,809	65,045	Unknown
22	EELS FROZEN	273,904	3,182,735	Unknown
22	EELS IN ATC NOT IN OIL	1,726,665	31,292,201	Unknown
22	EELS IN OIL NOT >7KG	4,760	101,133	Unknown
22	EELS STICKS TYPE PRODUCTS COOKED OR IN OIL	50	3,174	Unknown
22	EELS STICKS TYPE PRODUCTS NOT COOKED NOT IN OIL	23,110	108,038	Unknown
Unknown	FISH BALLS,CAKES,PUDDING IN ATC NOT IN OIL NOT > 6.8KG	10,380,043	43,750,217	Unknown
Unknown	FISH BALLS,CAKES,PUDDING IN OIL	878,254	2,681,754	Unknown
Unknown	FISH BALLS,CAKES,PUDDING NOT IN ATC NOT IN OIL > 6.8KG	3,158,174	10,243,705	Unknown
Unknown	FISH BALLS,CAKES,PUDDING NOT IN ATC NOT IN OIL NOT > 6.8KG	2,747,191	10,669,568	Unknown
Unknown	FISH MEAL FOR HUMAN CONSUMPTION > 6.8KG	141,049	1,824,757	Unknown
Unknown	FISH MEAL FOR HUMAN CONSUMPTION NOT > 6.8KG	22,039	271,642	Unknown
Unknown	FISH NSPF DRIED	2,467,914	18,334,562	Unknown
Unknown	FISH NSPF FILLET BLOCKS FROZEN > 4.5KG	1,819,269	13,591,307	Unknown
Unknown	FISH NSPF FILLET DRIED/SALTED/BRINE	3,790,378	16,951,343	Unknown
Unknown	FISH NSPF FRESH SCALED NOT >6.8KG	149,716	492,285	Unknown
Unknown	FISH NSPF HEADS,TAILS,MAWS	50,244	515,295	Unknown
Unknown	DRIED/SALTED/BRINE/SMOKED	422,752	3,319,425	Unknown
Unknown	FISH NSPF IN ATC IN OIL	2,198,331	18,626,553	Unknown
Unknown	FISH NSPF IN ATC NOT IN OIL	298,212	3,505,208	Unknown
Unknown	FISH NSPF LIVER,ROE CURED	79,707	843,279	Unknown
Unknown	FISH NSPF LIVER,ROE FRESH	1,160,820	8,817,066	Unknown
Unknown	FISH NSPF LIVER,ROE FROZEN	1,722,651	4,218,842	Unknown
Unknown	FISH NSPF MINCED FROZEN > 6.8KG	23,788	58,254	Unknown
Unknown	FISH NSPF OTHER EDIBLE OFFAL	849,093	5,873,272	Unknown
Unknown	FISH NSPF PREPARED DINNERS CONTAINING SHELLFISH	204,389	1,200,193	Unknown
Unknown	FISH NSPF SALTED > 6.8KG	269,031	1,502,697	Unknown
Unknown	FISH NSPF SALTED NOT > 6.8KG	3,472,180	32,331,132	Unknown
Unknown	FISH NSPF SMOKED	235,508	801,991	Unknown
Unknown	FISH NSPF SURIMI	1,560,044	5,237,651	Unknown
Unknown	FISH PASTES	1,113,369	4,338,569	Unknown
31	FLATFISH FLOUNDER FILLET BLOCKS FROZEN > 4.5KG	1,163,740	4,727,413	3%
31	FLATFISH FLOUNDER FILLET FRESH	305,680	2,815,169	3%
31	FLATFISH FLOUNDER FILLET FROZEN	8,577,766	40,775,315	3%
31	FLATFISH FLOUNDER FRESH	647,964	3,492,348	3%
31	FLATFISH FLOUNDER FROZEN	1,524,008	4,776,606	3%
31	FLATFISH FLOUNDER MEAT FRESH	282,924	1,190,672	3%
31	FLATFISH HALIBUT ATLANTIC FRESH	2,653,419	42,499,258	3%
31	FLATFISH HALIBUT ATLANTIC FROZEN	93,155	692,789	3%
31	FLATFISH HALIBUT NSPF FILLET BLOCKS FROZEN > 4.5KG	106,060	397,652	3%
31	FLATFISH HALIBUT NSPF FILLET FROZEN	1,383,475	23,864,636	3%
31	FLATFISH HALIBUT PACIFIC FRESH	1,962,493	31,169,542	3%
31	FLATFISH HALIBUT PACIFIC FROZEN	98,185	1,653,728	3%
31	FLATFISH NSPF FILLET BLOCKS FROZEN > 4.5KG	55,988	238,757	3%
31	FLATFISH NSPF FILLET FRESH	304,771	10,208,059	3%
31	FLATFISH NSPF FILLET FROZEN	408,568	2,049,174	3%
31	FLATFISH NSPF FRESH	468,367	2,954,856	3%
31	FLATFISH NSPF FROZEN	856,682	2,400,652	3%
31	FLATFISH NSPF MEAT FRESH	9,678	133,344	3%
31	FLATFISH PLAICE FILLET FRESH	77,923	911,352	3%
31	FLATFISH PLAICE FROZEN	179,732	577,795	3%
31	FLATFISH PLAICE MEAT FRESH	181	2,220	3%
31	FLATFISH SOLE (SOLEA SPP) FRESH	307,153	4,973,738	3%
31	FLATFISH SOLE (SOLEA SPP) FROZEN	453,986	5,712,688	3%
31	FLATFISH SOLE NSPF FILLET BLOCKS FROZEN > 4.5KG	1,005,850	3,760,136	3%
31	FLATFISH SOLE NSPF FILLET FRESH	199,480	1,255,054	3%
31	FLATFISH SOLE NSPF FILLET FROZEN	7,641,293	34,648,073	3%
31	FLATFISH SOLE NSPF MEAT FRESH	28,753	166,613	3%
31	FLATFISH SOLE NSPF MEAT FROZEN > 6.8KG	42,361	158,763	3%
31	FLATFISH SOLE ROCK FROZEN	10,190	27,071	3%

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31	FLATFISH SOLE YELLOWFIN FROZEN	54,069	196,308	3%
31	FLATFISH TURBOT (PSETTA MAXIMA) FRESH	83,138	917,845	3%
31	FLATFISH TURBOT (PSETTA MAXIMA) FROZEN	104,911	582,454	3%
31	FLATFISH TURBOT GREENLAND FILLET BLOCKS FROZEN > 4.5KG	25,390	175,360	3%
31	FLATFISH TURBOT GREENLAND FILLET FRESH	31,077	347,989	3%
31	FLATFISH TURBOT GREENLAND FILLET FROZEN	328,170	1,951,256	3%
31	FLATFISH TURBOT GREENLAND FRESH	45,267	462,211	3%
31	FLATFISH TURBOT GREENLAND FROZEN	435,057	2,371,506	3%
31	FLATFISH TURBOT GREENLAND MEAT FRESH	17,653	206,427	3%
31	FLATFISH TURBOT NSPF FILLET BLOCKS FROZEN > 4.5KG	70,220	210,662	3%
31	FLATFISH TURBOT NSPF FILLET FROZEN	6,551	40,967	3%
32	GROUND FISH BLUE WHITING FROZEN	59,907	144,089	26%
32	GROUND FISH COD ATLANTIC FILLET FRESH	2,816,641	32,905,299	26%
32	GROUND FISH COD ATLANTIC FRESH	1,925,993	8,371,489	26%
32	GROUND FISH COD ATLANTIC FROZEN	930,506	4,246,465	26%
32	GROUND FISH COD ATLANTIC MEAT FRESH	126,834	991,481	26%
32	GROUND FISH COD NSPF DRIED	1,886,591	14,431,584	26%
32	GROUND FISH COD NSPF FILLET BLOCKS FROZEN > 4.5KG	6,153,345	21,245,448	26%
32	GROUND FISH COD NSPF FILLET DRIED/SALTED/BRINE	1,473,053	12,423,250	26%
32	GROUND FISH COD NSPF FILLET FRESH	410,345	3,344,215	26%
32	GROUND FISH COD NSPF FILLET FROZEN	48,363,384	282,808,006	26%
32	GROUND FISH COD NSPF FILLET SALTED MOISTURE > 50%	11,084	92,824	26%
32	GROUND FISH COD NSPF FILLET SALTED MOISTURE CONTENT BET 45-50%	210,654	700,696	26%
32	GROUND FISH COD NSPF FILLET SALTED MOISTURE NOT > 43%	2,564	32,672	26%
32	GROUND FISH COD NSPF FRESH	531,346	2,778,110	26%
32	GROUND FISH COD NSPF FROZEN	236,821	1,005,746	26%
32	GROUND FISH COD NSPF MEAT FRESH	58,514	373,129	26%
32	GROUND FISH COD NSPF MEAT FROZEN > 6.8KG	303,467	1,152,020	26%
32	GROUND FISH COD NSPF MINCED FROZEN > 6.8KG	76,221	121,177	26%
32	GROUND FISH COD NSPF SALTED MOISTURE CONTENT > 50%	17,203	75,599	26%
32	GROUND FISH COD NSPF SALTED MOISTURE CONTENT BET 43-45%	4,196	42,775	26%
32	GROUND FISH COD NSPF SALTED MOISTURE CONTENT BET 45-50%	653,203	3,981,392	26%
32	GROUND FISH COD NSPF SALTED MOISTURE CONTENT NOT > 43%	200,053	1,241,315	26%
32	GROUND FISH COD,CUSK,HADDOCK,HAKE,POLLOCK SMOKED	45,714	390,838	26%
32	GROUND FISH CUSK FROZEN	87,191	216,740	26%
32	GROUND FISH CUSK,HADDOCK FILLET SALTED	16,597	135,193	26%
32	GROUND FISH CUSK,HADDOCK WHOLE/DRESSED SALTED	195,030	1,399,632	26%
32	GROUND FISH HADDOCK FILLET BLOCKS FROZEN > 4.5KG	3,429,094	20,123,769	26%
32	GROUND FISH HADDOCK FILLET FRESH	1,986,159	24,192,086	26%
32	GROUND FISH HADDOCK FILLET FROZEN	13,538,494	106,404,733	26%
32	GROUND FISH HADDOCK FRESH	3,769,443	11,172,335	26%
32	GROUND FISH HADDOCK FROZEN	4,615,918	21,542,622	26%
32	GROUND FISH HADDOCK MEAT FRESH	3,662	48,829	26%
32	GROUND FISH HAKE FILLET BLOCKS FROZEN > 4.5KG	227,154	880,680	26%
32	GROUND FISH HAKE FILLET FRESH	74,503	307,349	26%
32	GROUND FISH HAKE FILLET FROZEN	2,287,948	11,977,284	26%
32	GROUND FISH HAKE FILLET SALTED	19,747	49,793	26%
32	GROUND FISH HAKE FRESH	3,893,684	6,818,925	26%
32	GROUND FISH HAKE FRESH NOT >6.8KG	2,600	4,283	26%
32	GROUND FISH HAKE WHOLE/DRESSED SALTED	99,148	644,067	26%
32	GROUND FISH HAKE,WHITING FROZEN	1,576,726	4,287,367	26%
32	GROUND FISH NSPF FILLET BLOCKS FROZEN > 4.5KG	597,206	2,192,274	26%
32	GROUND FISH NSPF FILLET DRIED/SALTED/BRINE	5,617,681	23,507,155	26%

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
32	GROUND FISH NSPF FILLET FRESH	352,468	4,259,564	26%
32	GROUND FISH NSPF FILLET FROZEN	10,887,442	38,909,135	26%
32	GROUND FISH NSPF FRESH	6,956	44,248	26%
32	GROUND FISH NSPF FRESH NOT >6.8KG	39,193	166,344	26%
32	GROUND FISH NSPF FROZEN	576,679	2,112,972	26%
32	GROUND FISH NSPF MEAT FRESH	871,380	7,509,827	26%
32	GROUND FISH NSPF MEAT FROZEN > 6.8KG	103,406	814,386	26%
32	GROUND FISH NSPF MEAT FROZEN NOT > 6.8KG	4,690	28,563	26%
32	GROUND FISH NSPF MINCED FROZEN > 6.8KG	1,438	6,032	26%
32	GROUND FISH OCEAN PERCH ATLANTIC FILLET BLOCKS FROZEN > 4.5KG	129,285	520,983	26%
32	GROUND FISH OCEAN PERCH ATLANTIC FILLET FRESH	488,428	2,360,292	26%
32	GROUND FISH OCEAN PERCH ATLANTIC FILLET FROZEN	467,369	1,880,689	26%
32	GROUND FISH OCEAN PERCH ATLANTIC MEAT FRESH	499	3,135	26%
32	GROUND FISH OCEAN PERCH NSPF FILLET BLOCKS FROZEN > 4.5KG	166,610	774,943	26%
32	GROUND FISH OCEAN PERCH NSPF FILLET FROZEN	749,448	3,407,378	26%
32	GROUND FISH OCEAN PERCH NSPF FRESH	373,635	1,184,024	26%
32	GROUND FISH OCEAN PERCH NSPF FROZEN	280,059	902,339	26%
32	GROUND FISH OCEAN PERCH NSPF MEAT FROZEN > 6.8KG	206,280	786,078	26%
32	GROUND FISH POLLOCK ALASKA FILLET BLOCKS FROZEN > 4.5KG	23,818,592	63,353,343	26%
32	GROUND FISH POLLOCK ALASKA FILLET FROZEN	24,086,464	64,646,253	26%
32	GROUND FISH POLLOCK ALASKA FRESH	4,355	8,502	26%
32	GROUND FISH POLLOCK ALASKA FROZEN	287,107	937,332	26%
32	GROUND FISH POLLOCK ALASKA MEAT FROZEN > 6.8KG	121,432	267,655	26%
32	GROUND FISH POLLOCK ALASKA MEAT FROZEN NOT > 6.8KG	29,051	105,700	26%
32	GROUND FISH POLLOCK ALASKA MINCED FROZEN > 6.8KG	154,364	244,808	26%
32	GROUND FISH POLLOCK ALASKA ROE FROZEN	21,540	76,371	26%
32	GROUND FISH POLLOCK ALASKA SURIMI	266,675	464,365	26%
32	GROUND FISH POLLOCK ATLANTIC FILLET FROZEN	1,022,633	2,791,058	26%
32	GROUND FISH POLLOCK ATLANTIC FRESH	739,551	195,647	26%
32	GROUND FISH POLLOCK ATLANTIC FROZEN	15,630	29,581	26%
32	GROUND FISH POLLOCK NSPF FILLET BLOCKS FROZEN > 4.5KG	35,199	102,128	26%
32	GROUND FISH POLLOCK NSPF FILLET FRESH	21,313	145,976	26%
32	GROUND FISH POLLOCK NSPF FILLET SALTED	1,975,120	8,929,579	26%
32	GROUND FISH POLLOCK NSPF FRESH	574,920	1,020,715	26%
32	GROUND FISH POLLOCK NSPF MEAT FRESH	18,440	36,609	26%
32	GROUND FISH POLLOCK NSPF MEAT FROZEN > 6.8KG	50,471	140,969	26%
32	GROUND FISH POLLOCK NSPF SALTED WHOLE/DRESSED	473,517	2,264,625	26%
32	GROUND FISH WHITING FILLET BLOCKS FROZEN > 4.5KG	2,466,550	7,707,610	26%
33	GROUPE FRESH	3,912,316	35,443,485	37%
33	GROUPE FROZEN	795,840	3,600,595	37%
35	HERRING FILLET DRIED/SALTED/BRINE > 6.8KG	59,444	204,785	21%
35	HERRING FILLET DRIED/SALTED/BRINE NOT > 6.8KG	16,933	57,513	21%
35	HERRING FILLET FROZEN	230,637	604,853	21%
35	HERRING FRESH	401,404	365,592	21%
35	HERRING FROZEN	1,697,291	2,810,822	21%
35	HERRING IN ATC IN OIL	916,335	4,926,343	21%
35	HERRING IN TOMATO SAUCE/SMOKED/KIPPERED > 0.45KG	230,172	439,202	21%
35	HERRING KIPPERED	1,661,673	10,864,170	21%
35	HERRING PICKLED	2,660,453	6,279,446	21%
35	HERRING PICKLED FILLET	3,517,223	10,747,565	21%
35	HERRING PREPARED/PRESERVED	2,409,888	9,018,173	21%
35	HERRING ROE CURED	80,243	465,554	21%
35	HERRING ROE FROZEN	65,293	144,919	21%
35	HERRING SALTED > 6.8KG	92,999	428,997	21%
35	HERRING SALTED NOT > 6.8KG	77,981	146,550	21%

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
35	HERRING SMOKED FILLET	413,660	1,712,117	21%
35	HERRING SMOKED FILLET BONELESS	610,814	2,825,213	21%
35	HERRING SMOKED WHOLE OR BEHEADED NOT OTHERWISE PROCESSED	14,566	78,809	21%
37	JACK,HORSE MACKEREL FRESH	905,732	9,109,682	17%
37	JACK,HORSE MACKEREL FRESH NOT > 6.8KG	13,614	53,798	17%
37	JACK,HORSE MACKEREL FROZEN	935,806	3,025,233	17%
77	JELLYFISH (RHOPILEMA SPP.)	573,268	2,172,526	Unknown
77	LIVE/FRESH/FROZEN/DRIED/SALTED/BRINE/SMOKED JELLYFISH PREPARED/PRESERVED	671,669	2,957,567	Unknown
46	KRILL ANTARCTIC	3,299,716	9,913,809	Unknown
32	LINGCOD FRESH	156,850	1,140,579	26%
43	LOBSTER (HOMARUS SPP.)	40,961	596,895	28%
43	FRESH/DRIED/SALTED/BRINE	15,960,012	480,731,968	28%
43	LOBSTER (HOMARUS SPP.) FROZEN	80,504	964,879	28%
43	LOBSTER (HOMARUS SPP.) FROZEN IN ATC	155,264	1,651,163	28%
43	LOBSTER (HOMARUS SPP.) FROZEN IN ATC IN BRINE	227,068	6,786,542	28%
43	LOBSTER (HOMARUS SPP.) FROZEN IN BRINE	28,443,094	359,648,912	28%
43	LOBSTER (HOMARUS SPP.) LIVE	131,652	1,941,686	28%
43	LOBSTER NORWAY FROZEN	12,712	151,259	28%
43	LOBSTER NORWAY LIVE/FRESH/SALTED/BRINE	176,252	7,168,002	28%
43	LOBSTER NSPF MEAT COOKED CHILLED	7,455,226	211,557,620	28%
43	LOBSTER NSPF MEAT COOKED FROZEN	56,851	780,039	28%
43	LOBSTER NSPF MEAT COOKED IN ATC	661,596	2,709,723	28%
43	LOBSTER NSPF MEAT COOKED OTHER PREPARATIONS	198	3,189	28%
43	LOBSTER NSPF PRODUCTS PREPARED DINNERS IN ATC	27,722	452,979	28%
43	LOBSTER NSPF PRODUCTS PREPARED DINNERS NOT IN ATC	4,441,272	109,901,968	28%
43	LOBSTER ROCK CARIBBEAN SPINY FROZEN	3,775,704	110,308,082	28%
43	LOBSTER ROCK NSPF	57,970	1,279,982	28%
43	LIVE/FRESH/DRIED/SALTED/BRINE	37,112	123,837	17%
37	MACKEREL FILLET DRIED/SALTED/BRINE NOT > 6.8KG	205,196	692,624	17%
37	MACKEREL FRESH	6,760,343	17,177,146	17%
37	MACKEREL FROZEN	10,498,613	28,104,451	17%
37	MACKEREL PREPARED/PRESERVED	280,965	1,418,919	17%
37	MACKEREL SALTED > 6.8KG	694,590	2,133,381	17%
37	MACKEREL SALTED NOT > 6.8KG	186,599	949,586	17%
Unknown	MACKEREL SMOKED	6,110,260	71,660,297	Unknown
Unknown	MARINE FISH NSPF FILLET FRESH	22,915,702	201,848,462	Unknown
Unknown	MARINE FISH NSPF FILLET FROZEN	8,696,643	43,387,080	Unknown
Unknown	MARINE FISH NSPF FRESH	40,749,669	138,218,597	Unknown
Unknown	MARINE FISH NSPF FROZEN	4,216,721	48,974,898	Unknown
Unknown	MARINE FISH NSPF MEAT FRESH	293,541	1,697,578	Unknown
Unknown	MARINE FISH NSPF MEAT FROZEN > 6.8KG	449,500	2,948,287	Unknown
Unknown	MARINE FISH NSPF MEAT FROZEN NOT > 6.8 KG	9,895	37,023	50%
34	MONKFISH FRESH	120,034	410,777	50%
34	MONKFISH FROZEN	88,731	314,394	37%
33	MULLET FROZEN	90	13,823	37%
33	MULLET ROE FRESH	18,641	74,944	37%
33	MULLET ROE FROZEN	15,717,539	83,155,439	25%
57	OCTOPUS FROZEN/DRIED/SALTED/BRINE	5,857	66,978	25%
57	OCTOPUS LIVE/FRESH	3,468,472	24,233,204	25%
57	OCTOPUS NSPF PREPARED/PRESERVED	65,326	410,303	25%
57	OCTOPUS PRODUCTS PREPARED DINNERS	1,763,478	23,770,611	50%
34	ORANGE ROUGHY FILLET FROZEN	18,551	77,922	Unknown
38	RAYS, SKATES FRESH	24,307	70,836	Unknown
38	RAYS, SKATES FROZEN	122,436	1,000,960	37%
33	SABLEFISH FRESH	106,473	696,540	37%
33	SABLEFISH FRESH NOT > 6.8KG	466,330	1,472,210	37%
33	SABLEFISH FROZEN	535,053	4,315,705	45%
23	SALMON ATLANTIC FILLET FRESH WILD	74,993	638,209	45%
23	SALMON ATLANTIC FRESH WILD	19,348	271,871	45%
23	SALMON ATLANTIC MEAT FRESH WILD	619,925	8,034,825	45%
23	SALMON CHINOOK FRESH WILD	306,650	3,467,278	45%
23	SALMON CHINOOK FROZEN			

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
23	SALMON CHUM FRESH	862,347	3,211,146	45%
23	SALMON CHUM FROZEN	777,765	3,061,393	45%
23	SALMON COHO FRESH WILD	160,669	1,166,232	45%
23	SALMON COHO FROZEN	353,931	2,914,060	45%
23	SALMON FILLET BLOCKS FROZEN > 4.5KG	5,474,584	50,587,280	45%
23	SALMON NSPF CANNED IN OIL	90,557	1,053,819	45%
23	SALMON NSPF CANNED NOT IN OIL	1,228,373	11,210,394	45%
23	SALMON NSPF FRESH	334,242	2,761,050	45%
23	SALMON NSPF MEAT FRESH	460,215	4,765,158	45%
23	SALMON NSPF PREPARED/PRESERVED	3,574,880	30,742,150	45%
23	SALMON NSPF ROE CURED	14,027	692,206	45%
23	SALMON NSPF ROE FROZEN	22,643	634,831	45%
23	SALMON NSPF SALTED	992	20,429	45%
23	SALMON PACIFIC NSPF FROZEN	31,727	178,400	45%
23	SALMON PINK CANNED IN OIL	14,690	67,168	45%
23	SALMON PINK CANNED NOT IN OIL	4,478,901	19,660,406	45%
23	SALMON PINK FRESH	303,547	764,656	45%
23	SALMON PINK FROZEN	148,118	579,667	45%
23	SALMON SMOKED	5,124,829	102,438,430	45%
23	SALMON SOCKEYE CANNED NOT IN OIL	145,186	1,614,458	45%
23	SALMON SOCKEYE FRESH	7,792,007	48,083,813	45%
23	SALMON SOCKEYE FROZEN	1,182,025	9,029,800	45%
23	SALMONIDAE NSPF FRESH	66,943	620,074	45%
23	SALMONIDAE NSPF FROZEN	61,568	187,544	45%
23	SALMONIDAE NSPF MEAT FRESH	292,273	2,407,318	45%
35	SARDINE CANNED IN OIL NOT SKINNED/BONE	3,193,469	14,192,867	21%
35	SARDINE CANNED IN OIL SKINNED/BONE	2,410,003	21,328,391	21%
35	SARDINE CANNED IN OIL SMOKED NOT SKIN/BONE			
35	VALUE > \$1/KG	6,436,651	32,668,806	21%
35	SARDINE CANNED NOT IN OIL > 225 GR	6,062,455	12,816,324	21%
35	SARDINE CANNED NOT IN OIL NOT > 225 GR	11,389,538	41,512,032	21%
35	SARDINE,SARDINELLA,BRISLING,SPRAT FRESH	33,178	154,294	21%
35	SARDINE,SARDINELLA,BRISLING,SPRAT FROZEN	1,659,327	2,820,992	21%
55	SCALLOPS FROZEN/DRIED/SALTED/BRINE	23,820,054	306,276,857	15%
55	SCALLOPS LIVE/FRESH	3,156,973	82,878,222	15%
55	SCALLOPS PREPARED/PRESERVED	268,201	3,412,720	15%
55	SCALLOPS PRODUCTS PREPARED DINNERS	275,165	1,700,786	15%
33	SEA BASS (DICENTRARCHUS SPP.) FRESH	4,862,249	40,719,845	37%
33	SEA BASS (DICENTRARCHUS SPP.) FRESH NOT > 6.8KG	49,859	491,179	37%
33	SEA BASS (DICENTRARCHUS SPP.) FROZEN	147,807	977,244	37%
76	SEA URCHIN FROZEN/DRIED/SALTED/BRINE	16,388	208,920	Unknown
76	SEA URCHIN LIVE/FRESH	2,025,248	5,530,276	Unknown
76	SEA URCHIN PREPARED/PRESERVED	20,488	68,870	Unknown
76	SEA URCHIN ROE FRESH	27,325	1,139,603	Unknown
33	SEABREAM (SPARIDAE) FRESH	444,313	3,699,520	37%
33	SEABREAM (SPARIDAE) FRESH NOT > 6.8KG	1,328	31,704	37%
93	SEAWEED AND OTHER ALGAE FIT FOR HUMAN CONSUMPTION	7,187,211	60,715,681	Unknown
38	SHARK DOGFISH FRESH	40,011	69,066	Unknown
38	SHARK DOGFISH FROZEN	31,395	49,195	Unknown
38	SHARK FINS	35,210	449,404	Unknown
38	SHARK NSPF FRESH	103,206	339,229	Unknown
38	SHARK NSPF FROZEN	7,670	201,610	Unknown
33	SNAPPER (LUTJANIDAE SPP.) FRESH	10,688,504	72,131,069	37%
33	SNAPPER (LUTJANIDAE SPP.) FROZEN	4,237,593	24,381,668	37%
Unknown	SOUPS,BROTHS BASED ON FISH OR OTHER SEAFOOD	1,801,788	10,548,497	Unknown
57	SQUID (LOLIGO NSPF) FROZEN/DRIED/SALTED/BRINE	19,753,485	88,609,201	25%
57	SQUID (LOLIGO NSPF) LIVE/FRESH	146,293	534,016	25%
57	SQUID (LOLIGO NSPF) PREPARED/PRESERVED	838,710	5,481,546	25%
57	SQUID (LOLIGO OPALESCENS) FROZEN/DRIED/SALTED/BRINE	203,084	302,871	25%
57	SQUID (LOLIGO PEALEI) FROZEN/DRIED/SALTED/BRINE	1,610,917	3,172,944	25%
57	SQUID NSPF FILLET FROZEN	4,032,073	11,656,852	25%
57	SQUID NSPF FROZEN/DRIED/SALTED/BRINE	36,866,048	113,880,499	25%
57	SQUID NSPF LIVE/FRESH	358,382	722,219	25%

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
57	SQUID NSPF PREPARED/PRESERVED	5,202,467	26,135,918	25%
Unknown	STICKS,TYPE PRODUCTS COATED COOKED OR IN OIL NOT MINCED	2,634,848	16,339,405	Unknown
Unknown	STICKS,TYPE PRODUCTS COATED COOKED/FROZEN OF MINCED	659,603	2,350,988	Unknown
Unknown	STICKS,TYPE PRODUCTS COATED NOT COOKED NOT IN OIL NOT MINCED	1,187,782	6,277,309	Unknown
Unknown	STICKS,TYPE PRODUCTS COATED NOT COOKED NOT IN OIL OF MINCED	37,260	347,198	Unknown
Unknown	STICKS,TYPE PRODUCTS COATED NOT COOKED OF MINCED	211,821	545,280	Unknown
Unknown	STICKS,TYPE PRODUCTS NOT COATED COOKED/FROZEN OF MINCED	8,897,359	41,127,375	Unknown
Unknown	STICKS,TYPE PRODUCTS NOT COATED IN OIL NOT MINCED > 7KG	93,861	719,322	Unknown
Unknown	STICKS,TYPE PRODUCTS NOT COATED NOT COOKED OF MINCED	7,931,790	32,542,786	Unknown
Unknown	STICKS,TYPE PRODUCTS NOT COATED NOT MINCED NOT > 7KG	1,807,547	11,851,085	Unknown
36	SWORDFISH FILLET FRESH	31,247	219,563	6%
36	SWORDFISH FILLET FROZEN	1,595,927	13,424,342	6%
36	SWORDFISH FRESH	7,123,591	61,512,676	6%
36	SWORDFISH FROZEN	32,354	119,398	6%
36	SWORDFISH MEAT FRESH	23,754	210,076	6%
36	SWORDFISH MEAT FROZEN > 6.8KG	153,412	1,386,013	6%
36	SWORDFISH MEAT FROZEN NOT > 6.8KG	406	4,016	6%
36	SWORDFISH STEAKS FROZEN	511,621	5,653,644	6%
34	TOOTHFISH NSPF FILLET FRESH	12,833	374,792	50%
34	TOOTHFISH NSPF FILLET FROZEN	2,365,875	53,639,169	50%
34	TOOTHFISH NSPF FRESH	387,663	3,158,665	50%
34	TOOTHFISH NSPF FROZEN	3,936,237	84,273,010	50%
34	TOOTHFISH NSPF MEAT FROZEN > 6.8KG	1,629,430	36,317,033	50%
34	TOOTHFISH NSPF MEAT FROZEN NOT > 6.8KG	396,579	465,963	50%
36	TUNA ALBACORE FRESH	844,970	3,494,676	6%
36	TUNA ALBACORE FROZEN	1,361,794	3,141,449	6%
36	TUNA ALBACORE IN ATC (FOIL OR FLEXIBLE) NOT IN OIL OVER QUOTA	4,354,302	26,535,457	6%
36	TUNA ALBACORE IN ATC (OTHER) IN OIL	762,359	5,250,477	6%
36	TUNA ALBACORE IN ATC (OTHER) NOT IN OIL IN QUOTA	43,857	95,200	6%
36	TUNA ALBACORE IN ATC (OTHER) NOT IN OIL OVER QUOTA	18,808,713	98,054,995	6%
36	TUNA BIGEYE FRESH	4,126,877	35,625,781	6%
36	TUNA BIGEYE FROZEN	351,705	711,731	6%
36	TUNA BLUEFIN ATLANTIC FROZEN	16,052	298,889	6%
36	TUNA BLUEFIN ATLANTIC,PACIFIC FRESH	778,961	19,412,533	6%
36	TUNA BLUEFIN PACIFIC FROZEN	440,712	1,564,225	6%
36	TUNA BLUEFIN SOUTHERN FRESH	7,907	81,542	6%
36	TUNA BLUEFIN SOUTHERN FROZEN	35,563	2,052,058	6%
36	TUNA NSPF FILLET FROZEN	20,515,231	225,949,297	6%
36	TUNA NSPF FRESH	322,968	3,294,345	6%
36	TUNA NSPF FROZEN	248,782	658,044	6%
36	TUNA NSPF IN ATC (FOIL OR FLEXIBLE) IN OIL	1,422,846	8,732,911	6%
36	TUNA NSPF IN ATC (FOIL OR FLEXIBLE) NOT IN OIL IN QUOTA	59,777	332,863	6%
36	TUNA NSPF IN ATC (FOIL OR FLEXIBLE) NOT IN OIL OVER QUOTA	33,684,098	187,126,467	6%
36	TUNA NSPF IN ATC (OTHER) IN OIL	4,373,376	20,779,356	6%
36	TUNA NSPF IN ATC (OTHER) NOT IN OIL IN QUOTA	17,146	49,896	6%
36	TUNA NSPF IN ATC (OTHER) NOT IN OIL OVER QUOTA	93,845,637	328,696,940	6%
36	TUNA NSPF MEAT FROZEN > 6.8KG	2,044,918	16,764,549	6%
36	TUNA NSPF NOT IN ATC NOT IN OIL > 6.8KG	77,725,098	384,836,448	6%
36	TUNA NSPF NOT IN ATC NOT IN OIL NOT > 6.8KG	92,289	1,221,180	6%
36	TUNA SKIPJACK FRESH	70,078	127,840	6%
36	TUNA SKIPJACK FROZEN	394,506	618,713	6%
36	TUNA YELLOWFIN EVISCERATED HEAD-OFF FROZEN	1,198,312	11,880,666	6%
36	TUNA YELLOWFIN FRESH	16,167,000	155,812,889	6%

ISSCAAP Group	Product	Kilos	Dollars	ISSCAAP IUU Avg. Estimate (Agnew 2009)
36	TUNA YELLOWFIN WHOLE FROZEN	810,833	2,020,329	6%
Unknown	WHITEFISH FILLET FRESH	149,276	2,145,449	Unknown
Unknown	WHITEFISH FRESH	1,863,439	11,058,563	Unknown
Unknown	WHITEFISH FROZEN	819,851	4,623,541	Unknown
Unknown	WHITEFISH MEAT FRESH	309,913	1,610,579	Unknown
Unknown	WHITEFISH MEAT FROZEN > 6.8KG	37,299	116,523	Unknown
34	WOLFFISH FILLET FROZEN	55,956	83,823	50%
TOTAL HIGH RISK		491,542,245	3,701,798,908	
TOTAL MODERATE RISK		326,929,895	3,056,277,424	
TOTAL LOW RISK		329,002,487	1,871,940,863	
TOTAL WILD-CAUGHT IMPORTS		1,147,474,627	8,630,017,195	
% of TOTAL IMPORTS		46.1%	42.8%	
TOTAL IMPORTS (ALL EDIBLE PRODUCTS)		2,487,184,227	20,175,979,577	

Appendix 5 – Overexploited Stocks Categorized as High Risk – U.S. Imported Products Possibly Derived From Stocks

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Southeast Pacific (FAO Area 87)	37	Chilean jack mackerel	<i>Trachurus murphyi</i>	Vanuatu, Peru, China, Chile	1253	O	17%	19%
Western Central Pacific (FAO Area 71)	37	Other miscellaneous pelagic fishes			970	O	17%	34%
Southwest Atlantic (FAO Area 41)	32	Argentine hake	<i>Merluccius hubbsi</i>	Uruguay, Spain, Falkland Islands, Argentina	331	O	26%	32%
Eastern Central Atlantic (FAO Area 34)	35	Round sardinella	<i>Sardinella aurita</i>	Senegal, Netherlands, Lithuania, Ghana	269	O	21%	37%
Eastern Central Atlantic (FAO Area 34)	37	Jack and horse mackerels NEI	<i>Trachurus spp.</i>	Russia, Poland, Lithuania, Latvia	258	O	17%	37%
Southeast Pacific (FAO Area 87)	32	South Pacific hake	<i>Merluccius gayi</i>	Peru, Chile	94	O	26%	19%
Southwest Atlantic (FAO Area 41)	35	Brazilian sardinella	<i>Sardinella brasiliensis</i>	Brazil	83	O	21%	32%
Eastern Central Atlantic (FAO Area 34)	57	Octopuses, etc. NEI	<i>Octopodidae</i>	Senegal, Morocco, Mauritania, Greece	74	O	25%	37%
Western Central Atlantic (FAO Area 31)	34	Round sardinella	<i>Sardinella aurita</i>	Venezuela, US	37	O	50%	10%
Southwest Atlantic (FAO Area 41)	32	Southern blue whiting	<i>Micromesistius australis</i>	Spain, Japan, Falkland Islands, Argentina	32	O	26%	32%
Western Indian Ocean (FAO Area 51)	37	Butterfishes, pomfrets NEI	<i>Stromateidae</i>	Pakistan, Kuwait, India	32	O	17%	18%
Western Central Pacific (FAO Area 71)	45	Penaeus shrimps NEI	<i>Penaeus spp.</i>	Thailand, Philippines, Australia	31	O	25%	34%
Mediterranean and Black Sea (FAO Area 37)	32	European hake	<i>Merluccius merluccius</i>	Spain, Italy, Greece, France	30	O	26%	
Western Central Atlantic (FAO Area 31)	33	Snappers	<i>Lutjanus campechanus</i>	Venezuela, US, Mexico, Cuba	27	O	37%	10%
Eastern Indian Ocean (FAO Area 57)	45	Sergestid shrimp NEI	<i>Sergestidae</i>	Thailand, Malaysia	26	O	25%	32%
Eastern Central Atlantic (FAO Area 34)	33	Bobo croaker	<i>Pseudotolithus elongatus</i>	Sierra Leone, Guinea, Gambia, Gabon	22	O	37%	37%
Western Central Atlantic (FAO Area 31)	33	Groupers	<i>Epinephelus morio</i>	Venezuela, Mexico, Dominican Rep.	20	O	37%	10%

Region	ISSCAAP Group	Stock	Scientific name	Main Fishing Countries	2009 Landings (1,000 MT)	State of Exploitation	ISSCAAP IUU Avg. Estimate (Agnew 2009)	IUU Avg. Estimate by Region (Agnew 2009)
Eastern Indian Ocean (FAO Area 57)	35	Sardinellas NEI	<i>Sardinella spp.</i>	Thailand	17	O	21%	32%
Mediterranean and Black Sea (FAO Area 37)	33	Red mullet	<i>Mullus barbatus</i>	Turkey, Tunisia, Italy, Greece	16	O	37%	
Western Central Pacific (FAO Area 71)	38	Rays, stingrays, mantas NEI	<i>Rajiformes</i>	Thailand, Philippines, Malaysia, South Korea	16	O		34%
Western Central Pacific (FAO Area 71)	38	Sharks, rays, skates, etc. NEI	<i>Elasmobranchii</i>	Thailand, Philippines, Malaysia, Australia	15	O		34%
Eastern Central Atlantic (FAO Area 34)	57	Common octopus	<i>Octopus vulgaris</i>	Spain, Italy, Guinea-Bissau, Congo	8	O	25%	37%
Eastern Indian Ocean (FAO Area 57)	38	Rays, stingrays, mantas NEI	<i>Rajiformes</i>	Thailand, Malaysia, Australia	8	O		32%
Eastern Indian Ocean (FAO Area 57)	57	Octopuses, etc. NEI	<i>Octopodidae</i>	Thailand, Malaysia, Indonesia, Australia	6	O	25%	32%
Southwest Atlantic (FAO Area 41)	34	Patagonian toothfish	<i>Dissostichus eleginoides</i>	Uruguay, South Korea, Falkland Islands, Argentina	5	O	50%	32%
Western Central Atlantic (FAO Area 31)	45	Northern pink shrimp	<i>Penaeus duorarum</i>	US, Mexico, Cuba	4	O	25%	10%
Eastern Central Atlantic (FAO Area 34)	45	Penaeus shrimps NEI	<i>Penaeus spp.</i>	Sierra Leone, Cote d'Ivoire, Congo, Cameroon	3	O	25%	37%

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