A report from THE PEW CHARITABLE TRUSTS | May 2016

Global Progress Toward Implementing the United Nations Fish Stocks Agreement

An analysis of steps taken by tuna RFMOs on key provisions

Contents

1 Overview

2 Precautionary fisheries management

Establishing target and limit reference points **3**
Maintaining or restoring stocks to MSY in accordance with best available science **5**
Application of the ecosystem approach and shark conservation **6**

9 Monitoring, compliance, and enforcement

Identifying fishing vessels through internationally recognized IMO numbers **9**
Tracking with vessel monitoring systems **10**
Adopting port State controls **12**

13 Conclusion

14 Endnotes

Authors

Stacy Baez, *senior associate, global shark conservation, The Pew Charitable Trusts*
Adriana Fabra, *senior adviser, The Pew Charitable Trusts*
Andrew Friedman, *senior associate, international ocean policy, The Pew Charitable Trusts*
Grantly Galland, *senior associate, global tuna conservation, The Pew Charitable Trusts*
Amanda Nickson, *director, global tuna conservation, The Pew Charitable Trusts*
Luke Warwick, *director, global shark conservation, The Pew Charitable Trusts*

Pew's environmental initiative

Joshua S. Reichert, *executive vice president*
Tom Wathen, *vice president*

Contact: Michael Crispino, communications manager
Email: mcrispino@pewtrusts.org
Project website: pewtrusts.org/ip

Overview

World leaders adopted the United Nations Fish Stocks Agreement[1] (UNFSA) in 1995 to "ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks." The Agreement, which has been in force since 2001, is the primary international instrument for encouraging countries to undertake the cooperation essential to manage shared fish stocks. Neither the biology nor the ecology of these fishes respects the legal boundaries separating the waters of nations. That means these stocks cannot be managed by any single State. The UNFSA obligates its parties to work together to ensure that the stocks are fished sustainably, in accordance with the best science available, and to use an ecosystem-based approach that accounts for their value in the ocean's broader web of life.

The Agreement's provisions represent more than best practices: They are legal obligations. Governments that have agreed to it must follow its requirements in their roles as Members of regional fishery management organizations (RFMOs), the international bodies empowered to manage fish populations. The UNFSA's principles and obligations have been instrumental in shaping the specific legal frameworks and management measures of RFMOs, as well as other international legal instruments,[2] such as the United Nations Port State Measures Agreement (PSMA), adopted by the Food and Agriculture Organization of the United Nations in 2009.

The parties to the UNFSA have convened twice to review its implementation: at a Review Conference in 2006[3] and at a resumed Review Conference in 2010.[4] Each meeting produced recommendations to improve cooperation and better manage global stocks.[5] The parties will conduct a third review in May 2016.

This brief examines the progress made in implementing the Fish Stocks Agreement, based on a review of the status of certain highly migratory stocks and the effectiveness of RFMO measures in meeting specific mandates. It also looks at whether recommendations made in prior reviews have been implemented.

This is not a quantitative analysis, nor is it a comprehensive review of the implementation of all provisions. Rather, it is a qualitative assessment of the performance of RFMO Member States with respect to specific conservation objectives that The Pew Charitable Trusts sees as priorities. Because it is intended to provide only an indicative overview, it examines the workings of RFMOs focused on the management of tuna and tuna-like species.[6] Better implementation of certain provisions by these organizations has been a focus of Pew's work. These bodies are responsible for the management of key pelagic fisheries across 90 percent of the global ocean. In addition, tuna fisheries are a pillar in food security and economic stability. For these reasons, the tuna RFMOs provide an important model for reviewing the success of the Agreement as a policy tool to achieve sustainability in global fisheries.

The review of steps taken by the five tuna RFMOs shows some progress in adopting harvest strategies, which are the pre-agreed-upon frameworks for making fisheries management decisions such as how and when to set quotas. These strategies include specific rules designed to ensure that action is taken when stock sizes or fishing breach science-based reference points. Still, progress has been limited. No management body has adopted harvest strategies for more than 25 percent of a region's stocks.

The Agreement also requires that all RFMOs maintain reasonably healthy fish populations. But this assessment finds that each of the bodies responsible for managing tuna species has stocks below the size required to support maximum sustainable yield (MSY), the largest average catch that can be taken from a stock without significantly affecting reproduction. Many of these populations also lack management plans that would support a recovery.

Four of the five RFMOs also have not taken sufficient steps to better protect threatened shark species found in the fisheries under their management. None has yet implemented science-based management plans for all shark species associated with its region's fisheries.

Still, governments are making progress toward ending illegal fishing. The RFMOs all have improved their ability to identify vessels by requiring that any vessels fishing in their convention areas have International Maritime Organization (IMO) numbers, the seven-digit code administered by IHS Maritime. Implementation of these mandates is ongoing, as all regions have registries that still list vessels without IMO numbers. Similarly, these bodies have moved to mandate use of electronic vessel monitoring systems (VMS) in their convention areas, another important step. But they must act to make sure that these systems are effective.

In addition to identifying and tracking fishing vessels, strong port controls are among the most efficient ways for governments to catch those breaking the rules. Only three of the five tuna RFMOs have adopted port State controls, which must be better integrated into national and regional processes to be effective.

The analysis illustrates that implementation of the Fish Stocks Agreement has been inconsistent. Many stocks remain overfished, with some facing imminent danger of collapse. At the same time, parties to the various RFMOs are often unable to act because they cannot reach consensus. The management organizations can be effective only if Members have the political will to adopt measures that achieve the aims of the Agreement.

As noted in the United Nations Secretary-General's report submitted to this Review Conference,[7] the overall status of highly migratory fish stocks and straddling fish stocks has not improved since the first Review Conference in 2006.[8] Since 2010, the overall status of highly migratory fish stocks[9] and straddling stocks[10] has declined. Where information exists for shark species, 60 percent remain potentially overexploited or depleted.[11]

Previous reviews of the UNFSA, as well as RFMO performance reviews, have provided recommendations for properly implementing the Agreement. However, progress has been slow at best.

If the third review of the Fish Stocks Agreement is to achieve more than previous efforts, it cannot result in another series of recommendations that are not implemented effectively. Instead, the review must provide an accurate assessment of parties' compliance with existing measures, recognition of the need for all to meet their legal obligations, and a commitment to more rapid progress.

Precautionary fisheries management

The Fish Stocks Agreement stipulates that "States shall apply the precautionary approach widely … in order to protect the living marine resources and preserve the marine environment."[12] As elaborated in the text, this means being "more cautious when information is uncertain, unreliable or inadequate." In addition, the absence of scientific information cannot "be used as a reason for postponing or failing to take conservation and management measures."[13]

RFMOs can meet their duty to apply the precautionary approach by, among other things, establishing target and limit reference points to help maintain or restore stocks to MSY.

Establishing target and limit reference points

Summary of the obligation

Article 6.3(b) of the Agreement requires States cooperating through RFMOs to implement the precautionary approach by determining stock-specific reference points based on fishing mortality or stock size and to commit to act if those reference points are breached. Annex II of the Agreement spells out how these reference points should be established, calling for the adoption of two types—conservation, or limit, reference points and management, or target, reference points.

According to the Agreement, "limit reference points set boundaries that are intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield."[14] These points represent the outer boundary of sustainable fishing.

Target reference points "are intended to meet management objectives"[15] and should not be exceeded, "on average."[16] When stock size drops below or fishing mortality rises above a set reference point, managers implement a "pre-agreed conservation and management action," known as a "harvest control rule." The details depend on whether a target or limit has been breached.

Harvest control rules triggered at or near the target reference point are intended to return or maintain the stock at the target. Rules triggered at the limit reference point are intended to return a stock to biologically safe levels and prevent a crash. Under severe circumstances, managers may have to close a fishery that has breached a reference point until the stock recovers.

According to the Agreement, management strategies should ensure that the risk of breaching the limit reference point is "very low."[17] Annex II notes that "the fishing mortality rate which generates MSY should be regarded as a minimum standard for limit reference points" (emphasis added). In practice, this requires setting target reference points above MSY to ensure that overfishing does not occur, while limit reference points should be no higher than MSY and have a very low probability of being exceeded.

Table 1

Establishing Target and Limit Reference Points

RFMOs make only modest gains

- RFMO has adopted reference points that comply with UNFSA for less than 25% of stocks managed
- RFMO has adopted reference points that comply with UNFSA for 25-50% of stocks managed
- RFMO has adopted reference points that comply with UNFSA for more than 50% of stocks managed

Commission for the Conservation of Southern Bluefin Tuna (CCSBT)	After the stock of southern bluefin tuna declined to an estimated 3 to 7 percent of its unfished biomass, CCSBT initiated a management procedure in 2011 to develop rules that link annual catch limits to two indices of abundance. The goal would be to restore the stock to 20% of unfished biomass by 2035.[18] But the indices have not been formalized as reference points, and the rebuilding target does not match the biomass required to achieve MSY. Once the rebuilding target is reached, the new management target will be the biomass at MSY (approximately 24% of unfished biomass).[19] Reference points based on the fishing mortality rates have not been adopted.
Inter-American Tropical Tuna Commission (IATTC)	In 2014, the IATTC set interim target and limit reference points for tropical tuna that are not consistent with UNFSA obligations.[20] The fishing mortality rate that would produce MSY was set as the target, rather than the limit reference point, as required by the Agreement. IATTC parties have not formally adopted these interim points, meaning they have no impact on current catch limits. Additionally, by choosing a target for fishing mortality at and not below MSY, the Commission did not account for depletion to date or buffer against overfishing.[21] Even if the interim limit reference points were applied, they would permit stocks to be fished down to 8 percent of unfished biomass, well below the stock size that would produce MSY.[22] Finally, the IATTC has not adopted limit or target reference points for Pacific bluefin tuna, a depleted stock that has been fished down to 2.6 percent of unfished levels.[23]
International Commission for the Conservation of Atlantic Tunas (ICCAT)	In 2015, ICCAT adopted a recommendation calling for development of harvest control rules—including setting reference points—for its most important stocks within 5 years.[24] While agreeing to develop these rules is a significant step forward, the Commission has yet to determine specifics. This effort will begin in 2016 when North Atlantic albacore becomes the first stock subjected to this process.[25] In 2013, ICCAT set an interim limit reference point for North Atlantic swordfish equal to 40% of the biomass that produces MSY.[26] Reference points based on the fishing mortality rate have not been adopted.
Indian Ocean Tuna Commission (IOTC)	Like IATTC, IOTC has interim, non-binding reference points that set target fishing mortality rates at MSY.[27] That means it does not comply with the requirement that fishing mortality at MSY serve as a limit, not the target reference point. In addition, the Commission has not put harvest control rules in place to determine what should happen once reference points are violated.
Western and Central Pacific Fisheries Commission (WCPFC)	In 2014, WCPFC committed to developing and implementing harvest strategies, including the adoption of target reference points and harvest control rules for each of its key fisheries or stocks. In 2015, workplans and indicative time frames were put in place to guide the process.[28] Also in 2015, the Commission agreed to an interim skipjack target reference point of 50% percent of unfished biomass.[29] Limit reference points for tuna other than Pacific bluefin have been adopted through "decisions of the Commission" instead of more formal conservation and management measures. But the bigeye tuna stock has already fallen below the limit reference point,[30] and no harvest control rules have been agreed on to facilitate stock recovery. For Pacific bluefin, the Commission has adopted an interim recovery target of the "historical median." That target corresponds to 6.7 percent of unfished biomass,[31] well below the accepted proxies for the biomass that will produce MSY (e.g., 40% of unfished biomass).[32]

Although some progress has been made toward implementing precautionary target and limit reference points, few have actually been designated; and of those that have, few satisfy the requirements of the Agreement. A limited number of species are currently managed based on these targets. This failure must be addressed to bring parties to the Agreement into compliance with their obligations.

Maintaining or restoring stocks to MSY in accordance with best available science

Summary of the obligation

Article 5 requires States working within RFMOs to adopt measures "to ensure long-term sustainability" of fish stocks "based on the best scientific evidence available." These measures must be "designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors." States must "apply the precautionary approach" in development and implementation.

The Agreement does not include specific timelines to rebuild stocks, but following the objective standard of MSY and the goal of using the best available science should reduce political influence on setting catch limits and rebuilding targets.

Table 2

Maintaining or Restoring Stocks to MSY, Following Best Available Science

RFMOs often not doing enough for troubled populations

- Some stocks managed by the RFMO are below the size required to produce MSY and are not subject to science-based rebuilding plans to restore them to that size
- Any stocks managed by the RFMO that are below the size required to produce MSY are subject to science-based rebuilding plans to restore them to that size
- All stocks managed by the RFMO are at or above the size required to produce MSY, in full compliance with UNFSA

CCSBT	CCSBT manages only one stock (southern bluefin). That stock is severely overfished, now at approximately 10% of its unfished biomass.[33] Though harvest control rules have been implemented, the stock's recovery timeline is very long (more than 20 years), and the interim recovery target of 20% of unfished biomass is below the RFMO's biomass proxy for MSY (24% of unfished biomass).
IATTC	IATTC has not implemented a science-based recovery plan for Pacific bluefin tuna, a stock that has fallen far below the size required to produce MSY. In 2014, scientists recommended a 50% reduction in catch in the eastern Pacific to achieve an increase in spawning stock biomass to counter the species' low recruitment. They said that "further reductions in fishing mortality and juvenile catch over the whole range of juvenile ages should be considered."[34] IATTC minutes indicate "a wide-ranging discussion of whether these recommendations are binding or not," but parties moved to reduce bluefin catch from 5,500 metric tons per year to an effective annual rate of 3,300 metric tons per year in 2014, not the 2,750 metric tons that had been recommended.[35]

Continued on the next page

ICCAT	ICCAT has implemented rebuilding plans for three tuna stocks found to be depleted (western and eastern Atlantic bluefin and northern albacore) and helped boost the recovery of the previously depleted North Atlantic swordfish, but multiple stocks remain overfished and do not have science-based recovery plans. In 2015, ICCAT scientists reported that Atlantic bigeye tuna is overfished and experiencing overfishing.[36] While the Commission agreed to a 23% reduction in quota, this is not likely to have any impact on the stock because catches are already below the newly adopted, permissible levels. The new quota gives the stock a less than 50% chance of recovering to levels that support MSY before 2028, a timeline not based on science.[37] Neither the length of this timeline nor the likelihood of its success is precautionary. The Mediterranean swordfish stock is severely overfished, and fishing mortality is significantly higher than the level that would support MSY.[38] Current recovery efforts (such as closed seasons and minimum size requirements) may have helped reduce landings but have not put the stock on a path to recovery. No comprehensive rebuilding plan is in place. Both stocks of Atlantic bluefin tuna, particularly eastern bluefin, have seen some growth since implementation of recovery plans in 1998 for western bluefin and 2006 for eastern bluefin. If the recovery plans are successful, these stocks would return to the level at which MSY can be achieved by 2018 and 2021, respectively.[39] However, the western stock size is still at approximately half of the already depleted 1970s stock size, indicating that recovery on the plan's timeline is unlikely.[40]
IOTC	In 2015, IOTC scientists reported that the Indian Ocean yellowfin stock is overfished and experiencing overfishing.[41] When the Commission next meets, a comprehensive recovery plan must be adopted to move the stock toward a mortality rate and stock size consistent with UNFSA.
WCPFC	The WCPFC has not restored Pacific bluefin or bigeye tuna, two stocks that have fallen below the stock size required to produce MSY. In 2014, the Commission implemented a multi-annual rebuilding plan for Pacific bluefin.[42] The rebuilding target is 6.7% of unfished biomass,[43] a stock size far below the level required to produce MSY.[44] Furthermore, the plan has only a 60% chance of achieving even this modest target. The western and central Pacific bigeye stock is overfished, and severe overfishing has continued throughout the life of the WCPFC.[45] The stock is below the limit reference point of 20% of unfished biomass, but no new management actions have been taken to reduce overfishing or rebuild the stock to levels capable of producing MSY. The Commission has put no recovery plan in place and has not agreed to a timeline within which the stock should be recovered. The fishing mortality rate of western and central Pacific bigeye continues to remain far too high—1.57 times the mortality rate at MSY.[46]

While a few depleted tuna stocks, such as eastern Atlantic bluefin, are on the road to recovery, many stocks managed by the five tuna RFMOs continue to be overfished and to experience overfishing. The failure of Member governments to ensure recovery of depleted stocks means they are not meeting their obligations under UNFSA. This issue must be addressed at the highest level and could be a vital outcome of the conference.

Application of the ecosystem approach and shark conservation

Summary of the obligation

Article 5(d) of the UNFSA requires that States cooperate to "assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks." Subpart 5(e) provides that they must "adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened."

Sharks are among the species most threatened by fishing for tuna. For this reason, the resumed Review Conference in 2010 recommended that States, individually and through RFMOs, "strengthen the conservation

and management of sharks."[47] Among the steps that could help accomplish that ambition are species-specific data collection requirements for sharks and development of conservation and management measures for these sharks, whether caught in directed fisheries or as bycatch. As such, shark conservation is not only an important responsibility for the RFMOs, but it also serves as a proxy for determining whether obligations to implement the ecosystem approach are being fulfilled.

Table 3

Application of the Ecosystem Approach and Steps to Conserve Sharks
Many RFMOs fall short

- RFMO parties have taken no or limited action to manage or protect threatened shark species despite scientific recommendations
- Some of the threatened shark species associated with the managed fisheries have species-specific protective measures in place, but science-based management measures have not been set for all shark species
- All sharks associated with the managed fisheries are governed by science-based management measures

CCSBT	Not applicable. CCSBT manages a single tuna stock in an area that overlaps completely with multi-species management bodies (IATTC, ICCAT, and WCPFC).
IATTC	IATTC adopted a general resolution concerning shark conservation in 2005[48] and species-specific resolutions more recently that prohibit the retention of oceanic whitetip sharks[49] and mobulid rays,[50] as well as the setting of purse seine nets around whale sharks.[51] No action has been taken to protect silky shark populations, although the Commission's Scientific Advisory Committee has expressed concern over the shark's status and the European Union has proposed prohibiting its retention in each of the past three years.[52] Similar proposals were put forward regarding hammerheads in 2012 and 2013, noting that certain hammerhead species are "among the species with the lowest productivity." In 2013, Members rejected a hammerhead proposal, saying it needed additional scientific review.[53] A finning measure adopted in 2005 requires that fins total no more than 5% of the weight of sharks on-board, but this has proved difficult to enforce.[54] No catch limits have been set for any shark species, though the IATTC has prohibited retention when faced with information indicating severe stock declines.

Continued on the next page

ICCAT	Before 2015, ICCAT adopted species-specific recommendations for five shark species in its management area, including a prohibition on the retention of bigeye thresher, hammerhead, silky, and oceanic whitetip sharks and a requirement that parties provide additional information about shortfin mako.[55] It also adopted general recommendations concerning shark conservation.[56] ICCAT also requires that fins total no more than 5% of the weight of sharks on-board.[57] At its 2015 meeting, the Commission adopted a resolution to apply an ecosystem-based approach to fisheries management[58] and a recommendation to require live release of porbeagle sharks.[59] This measure will help with implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora Appendix II listing of the porbeagle shark that went into effect in 2014. Though ICCAT has done more than other RFMOs, critical gaps in ensuring sustainable shark mortality remain. No catch limits have been set for any shark species. Prohibitions on retention have been the only measures implemented to respond to severe stock declines. Because of a debate over the legal ability of ICCAT to regulate targeted, or secondary targeted, fisheries for sharks, the most significant proportion of the shark catch in the Convention area (blues and makos) remains unmanaged.
IOTC	IOTC has adopted measures that prohibit the retention of oceanic whitetip[60] and thresher sharks.[61] Additionally, Members agreed to prohibit the setting of purse seine nets around whale sharks.[62] A finning ban has been implemented that says vessels cannot "have onboard fins that total more than 5 percent of the weight of sharks onboard." The scientific advice for silky[63] and hammerhead sharks[64] is similar to the advice on oceanic whitetip and thresher sharks. Still, despite repeated proposals to prohibit their retention, no measures have been adopted. IOTC has not taken steps to control targeted shark fisheries, or sharks caught as an important secondary catch in tuna and billfish longline fisheries. Significant amounts of blue and mako shark catch are therefore unregulated. No catch limits have been set for any shark species in the Convention area.
WCPFC	WCPFC has adopted species-specific resolutions prohibiting the retention of oceanic whitetip[65] and silky sharks.[66] It has prohibited the setting of purse seine nets around whale sharks[67] and parties have approved two general resolutions on shark conservation.[68] WCPFC requires that fins cannot total more than 5% of the weight of sharks on-board.[69] It prohibits the use of wire leaders and shark lines together; Member States can choose to use either but not in tandem.[70] All Member States that target sharks must provide a management plan to the Commission that is assessed by its Scientific Committee.[71] At the 2015 Commission meeting, the secretariat was tasked with developing a definition of a targeted shark fishery and creating a list of key elements to be included in national shark management plans for fisheries that target sharks. If fully implemented, this measure would vastly improve WCPFC's performance. WCPFC has not implemented conservation measures for many species identified in its list of priority species, including thresher, hammerhead, mako, and blue sharks.

No RFMO has taken sufficient action to fully manage the sharks caught in significant numbers in waters under its competence, and the fisheries managed are major contributors to the global decline of large pelagic sharks. In addition, members of several RFMOs have cited incomplete information as the rationale for delaying or rejecting proposals to take needed conservation actions. That is contrary to their obligations under the Agreement to apply the precautionary approach. For vulnerable shark and ray species, this inaction could lead to stock collapse, as seen for oceanic whitetip sharks globally.[72]

Improvements in data collection will not improve stock health without a better application of the precautionary approach. Debates about the proper definition of shark catch, whether targeted or as bycatch, should not prevent

effective management by RFMO parties. Conservation measures that apply the ecosystem approach must be implemented without delay. When data are unavailable, all shark catch should be prohibited until appropriate management measures can be put in place to guarantee sustainability of catch for these vulnerable species.

Monitoring, compliance, and enforcement

The Fish Stocks Agreement provides a framework for ensuring that the conservation and management measures adopted by States and RFMOs are implemented. Toward this end, the Agreement obligates flag and port States to exert control over vessels under their respective jurisdictions, including through enhanced regional cooperation. To assess RFMO performance, it is important to examine whether measures are in place and being implemented, as well as whether they achieve their intended purpose.

Identifying fishing vessels through internationally recognized IMO numbers

Summary of the obligation

Article 18(d) imposes on flag States a duty to require "marking of fishing vessels and fishing gear for identification in accordance with uniform and internationally recognizable vessel and gear marking systems."

Since the adoption of the Fish Stocks Agreement, the international community has reached a consensus about the need to improve identification of fishing vessels by requiring the use of unique and permanent identification numbers. These numbers will help achieve the 2010 resumed Review Conference's call to "[e]xpedite efforts … to create a unique vessel identifier system as part of a comprehensive global record of fishing vessels." That then will help with efforts to combat illegal fishing. In 2013, the IMO removed an exception for fishing vessels from its "IMO numbering scheme." Since then, RFMOs have moved swiftly toward mandating IMO numbers for all authorized vessels.

Between 2013 and 2015, nine RFMOs adopted requirements for the numbers, which cost nothing to obtain. Most took effect by 1 January 2016. Despite this important progress, RFMO Member States continue to authorize vessels without the identification numbers to fish in convention areas. RFMOs should extend the requirements to active fishing vessels of any size to ensure that all can be identified.

Table 4

Identifying Fishing Vessels With IMO Numbers

RFMOs adopting new rules, which they should fully implement and expand to ships of all sizes

- The RFMO does not require that vessels be identified with IMO numbers
- The RFMO requires IMO numbers for fishing vessels over a certain size, but the list of authorized vessels includes ships that do not comply with this requirement
- The RFMO requires IMO numbers for all fishing vessels; all RFMO Members only authorize vessels that comply with the requirement

CCSBT	CCSBT will require IMO numbers for vessels over 100 gross tons/gross registered tons (GT/GRT) as of 1 January 2017.[73]
IATTC	As of 1 January 2016, IATTC requires IMO numbers for vessels over 100 GT/GRT, but not all authorized vessels had IMO numbers when the obligation entered into force.[74]
ICCAT	As of 1 January 2016, ICCAT requires IMO numbers for vessels 20 meters or greater, but not all authorized vessels had IMO numbers when the obligation entered into force.[75]
IOTC	As of 1 January 2016, IOTC requires IMO numbers for all vessels operating outside of their nations' exclusive economic zone and for vessels 24 meters or greater fishing in domestic waters, but not all authorized vessels had IMO numbers when the obligation entered into force.[76]
WCPFC	As of 1 January 2016, WCPFC requires IMO numbers for vessels over 100 GT/GRT, but not all authorized vessels had IMO numbers when the obligation entered into force.[77]

Tracking with vessel monitoring systems

Summary of the obligation

Article 18.3(e) requires "recording and timely reporting of vessel position, catch of target and non-target species, fishing effort and other relevant fisheries data in accordance with subregional, regional and global standards for collection of such data." Article 18.3(g)(iii) mandates flag States to conduct monitoring, control, and surveillance of their vessels. To do that, the Agreement calls for "the development and implementation of vessel monitoring systems (VMS), including, as appropriate, satellite transmitter systems, in accordance with any national programs and those which have been subregionally, regionally or globally agreed among the States concerned." Annex I includes standard requirements for collection of data, including on vessel positioning and fishing activity.

Most RFMOs mandate some form of fishing vessel monitoring using VMS, for either all authorized vessels or vessels over a certain size. With some exceptions, however, most RFMO-mandated systems do not ensure that the data are sufficiently accurate or require that data be shared with authorities. In addition, VMS requirements have not been fully implemented by some States because of limited capacity or other challenges. RFMOs continue to include non-compliant vessels in their lists of vessels authorized to fish in their convention areas.

Table 5

Tracking Fishing Vessels With VMS

Some progress, but more steps needed

- The RFMO does not mandate VMS for vessels authorized to fish in the convention area
- The RFMO mandates VMS for certain vessels authorized to fish in the convention area, but requirements fall short of best practices (as detailed in the section below)
- The RFMO mandates VMS for all vessels authorized to fish in the convention area and has adopted best practices to ensure that VMS can monitor compliance with fisheries management measures:
  - VMS data must be transmitted simultaneously to the flag and coastal States as well as to appropriate RFMO secretariats
  - VMS units must be approved, tamper-proof, and equipped with adequate backup and recovery procedures
  - VMS must be operational at all times, with strict reporting procedures in case of failure
  - VMS transmissions must be at intervals between 1 and 4 hours, depending on the gear type used
  - Viable penalties should be in place in case of non-compliance

CCSBT	CCSBT does not have an independent VMS scheme but requires Members and cooperating non-members to use VMS on vessels as mandated by other RFMOs when fishing in those convention areas.[78]
IATTC	IATTC requires satellite-based VMS for all vessels over 24 meters, but there is no simultaneous transmittal to flag and coastal States or to the secretariat.[79] The RFMO has no strict reporting procedures in case of VMS failure and no viable penalties in case of non-compliance.
ICCAT	ICCAT requires satellite-based VMS for all vessels over 24 meters[80] and for vessels over 15 meters fishing for eastern Atlantic and Mediterranean bluefin tuna.[81] VMS data for vessels over 15 meters fishing for eastern Atlantic and Mediterranean bluefin tuna is transmitted to the ICCAT secretariat,[82] and there is an obligation for vessels to share VMS data with the coastal State when in its waters. The RFMO has no strict reporting procedures in case of VMS failure and no viable penalties in case of non-compliance.
IOTC	IOTC requires satellite-based VMS for all vessels over 24 meters and will expand the requirement to all-size vessels in 2019,[83] but there is no simultaneous transmission of data to flag and coastal states or to the Secretariat. The RFMO has no strict reporting procedures in case of VMS failure and no viable penalties in case of non-compliance.
WCPFC	WCPFC requires satellite-based VMS for all vessels fishing in the high seas portion of the Convention area.[84] The RFMO has no strict reporting procedures in case of VMS failure and no viable penalties in case of non-compliance.

Adopting port State controls

Summary of the obligation

Article 23 provides that a port State has the right and "the duty to take measures, in accordance with international law, to promote the effectiveness of subregional, regional and global conservation and management measures." Port States "may adopt regulations empowering the relevant national authorities to prohibit landings and transshipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of subregional, regional or global conservation and management measures on the high seas."

Port State controls play an instrumental role in preventing the entry of illegal fish into the world's markets by removing economic incentives for illegal operators and ensuring compliance with management measures. The controls, however, require broad application to be effective. The 2010 resumed Review Conference encouraged "States to consider becoming party to the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing of the FAO," known as the PSMA, and to adopt port State measures through RFMOs that are consistent with the Agreement. Several RFMOs have reviewed their measures on port controls or have considered new ones. Only a few have fully aligned their provisions with the PSMA, and some have not agreed to minimum standards on port inspections. Implementation of already adopted measures is irregular.

Table 6

Adopting Port State Controls
Mixed progress among RFMOs

- The RFMO does not mandate minimum standards for inspections in port
- The RFMO mandates minimum standards for inspections in port but does not mandate a comprehensive set of port State measures consistent with the PSMA
- The RFMO mandates minimum standards for inspections in port, consistent with the PSMA, and these measures have been implemented through regional and national processes

CCSBT	CCSBT adopted a resolution for minimum standards for inspections in port in October 2015. Those standards enter into force on 1 January 2017.[85]
IATTC	IATTC members have not adopted a measure on minimum standards for port inspections.
ICCAT	ICCAT adopted a resolution for minimum standards for inspections in port in October 2012[86] and has agreed to establish a fund "to support and strengthen the development and implementation of effective systems of port inspection by developing CPCs in order to meet or exceed the minimum standards."[87] Some members have not yet fully implemented these provisions.
IOTC	IOTC adopted a resolution on port State measures in 2010 that includes provisions consistent with the PSMA. Some members have not yet fully implemented these provisions.[88]
WCPFC	WCPFC members have not adopted a measure on minimum standards for port inspections.

Conclusion

The major RFMOs have made progress since the Agreement's last review conference in 2010, but much remains to be done. Many recommendations from previous conferences and performance reviews are not yet in place.

According to the secretary-general's recent report, "The Review Conference presents an important opportunity for parties to the Agreement, together with non-parties, intergovernmental organizations, the fishing industry, civil society and other stakeholders, to contribute to the continuing efforts to improve the state of the oceans and their resources."[89] Pew urges those taking part in this year's resumed Review Conference to seize this chance to re-evaluate efforts to uphold the Agreement and take steps to ensure that its provisions are fully integrated into RFMO decision-making.

Endnotes

1 More formally known as the "United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks," 34 ILM 1542 (1995), http://www.un.org/depts/los/convention_agreements/convention_overview_fish_stocks.htm.

2 Phillipe Sands and Jaqueline Peel, *Principles of International Environmental Law*, 3rd ed. (Cambridge: Cambridge University Press, 2012), 408–410; see also David A. Balton and Holly R. Koehler, "Reviewing the United Nations Fish Stocks Treaty," *Sustainable Development Law and Policy* 7, no. 1 (2006): 5–9, http://digitalcommons.wcl.american.edu/sdlp/vol7/iss1/4.

3 United Nations, "Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks," 22-26 May 2006, *Report of the Review Conference*, U.N. Doc. A/CONF.210/2006/15 (July 3, 2006), http://www.un.org/Depts/los/convention_agreements/review_conf_fish_stocks.htm (accessed 14 March 2016) (hereinafter *2006 Review Conference Report*).

4 United Nations, "Resumed Review Conference on the Agreement … Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks," 24-28 May 2010, *Report of the Resumed Review Conference*, A/CONF.210/2010/7 (27 July 2010), https://documents-dds-ny.un.org/doc/UNDOC/GEN/N10/465/87/PDF/N1046587.pdf?OpenElement (accessed 13 May, 2016) (hereinafter *2010 Review Conference Report*).

5 United Nations, *2006 Review Conference Report* and *2010 Review Conference Report*.

6 Specifically, they are the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), Inter-American Tropical Tuna Commission (IATTC), International Commission for the Conservation of Atlantic Tunas (ICCAT), Indian Ocean Tuna Commission (IOTC), and Western and Central Pacific Fisheries Commission (WCPFC).

7 United Nations, *Report Submitted to the Resumed Review Conference in Accordance With Paragraph 41 of General Assembly Resolution 69/109 to Assist It in Discharging Its Mandate Under Article 36(2) of the Agreement*, Document A/CONF.210/2016/1 (1 March 2016) (*Secretary-General's Report*), http://www.un.org/ga/search/view_doc.asp?symbol=A/Conf.210/2016/1; and Food and Agriculture Organization of the United Nations, *FAO's Input to the UN Secretary-General's Comprehensive Report for the 2016 Resumed Review Conference on the UN Fish Stocks Agreement* (2016), www.un.org/Depts/los/2016_FAO_Overview.pdf.

8 United Nations, *Secretary-General's Report*, para. 33.

9 United Nations, *Secretary-General's Report*, para. 16. For 69 percent of the stocks, there was no change, for 20 percent there was a deterioration, and for 11 percent there were improvements. Since the previous assessment, the percentage of non-fully exploited tuna and tuna-like species stocks has decreased from 17 to 14 percent, the percentage of fully exploited stocks has decreased from 53 to 49 percent, and the percentage of overexploited stocks has increased from 30 to 37 percent.

10 United Nations, *Secretary-General's Report*, para. 24. The percentage of non-fully exploited stocks decreased from 21 to 16 percent, the percentage of fully exploited stocks increased from 41 to 44 percent, and the percentage of overexploited stocks increased from 38 to 40 percent. The status of 59 percent of the stocks remained unchanged, 16 percent showed improvements, and 25 percent showed some deterioration. In addition, the status of approximately half of the stocks described in the overview was considered unknown owing to lack of sufficient information.

11 United Nations, *Secretary-General's Report*, para. 18.

12 United Nations, *Fish Stocks Agreement*, art. 6(1).

13 Ibid., art. 6(2).

14 Ibid., Annex II, para 2.

15 Ibid.

16 Ibid., Annex II, para 5.

17 Ibid.

18 CCSBT, Resolution on the Adoption of a Management Procedure, 18th Annual Meeting (10-13 October 2011), https://www.ccsbt.org/sites/ccsbt.org/files/userfiles/file/docs_english/operational_resolutions/Resolution_Management_Procedure.pdf.

19 CCSBT, *Report of the Twentieth Meeting of the Scientific Committee* (2015), https://www.ccsbt.org/sites/ccsbt.org/files/userfiles/file/docs_english/meetings/meeting_reports/ccsbt_22/report_of_SC20.pdf, (hereinafter *CCSBT 2015*).

20 IATTC, *87th Meeting: Minutes of the Meeting*, IATTC-87-1, para. 3(d)(v) (14-18 July 2014), https://www.iattc.org/Meetings/Meetings2014/July/PDFs/IATTC-87-1-Minutes.pdf.

21 IATTC, "Recommendations by the Staff for Conservation Measures in the Eastern Pacific Ocean," IATTC-87-03d, 2 (14-18 July 2014), http://www.iattc.org/Meetings/Meetings2014/July/PDFs/IATTC-87-03d-Conservation-recommendations.pdf.

22 See, for example, Alexandre Aires-da-Silva and Mark N. Maunder, *Status of Bigeye Tuna in the Eastern Pacific Ocean in 2014 and Their Outlook for the Future*, Document SAC-06-05, IATTC Scientific Advisory Committee Sixth Meeting (11-15 May 2015), http://www.iattc.org/Meetings/Meetings2015/6SAC/PDFs/SAC-06-05-BET-assessment-2014.pdf.

23 International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean, Pacific Bluefin Tuna Working Group, "2016 Pacific Bluefin Tuna Stock Assessment, Executive Summary" (2016), http://www.iattc.org/Meetings/Meetings2016/SAC7/PDFfiles/INF/SAC-07-INF-C(a)-ISC-Letter-IATTC-Executive-Summary.pdf (hereinafter "2016 Pacific Bluefin Stock Assessment").

24 ICCAT, "Recommendations by ICCAT on the Development of Harvest Control Rules and Management Strategy Evaluation," 2015-07, 24th Regular Meeting of the Commission, 10-17 November 2015, https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-07-e.pdf.

25 ICCAT, "Recommendation by ICCAT to Establish Harvest Control Rules for Albacore Stock," Rec. 2015-04, 24th Regular Meeting of the Commission, 10-17 November 2015, https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-04-e.pdf.

26 ICCAT, "Recommendations by ICCAT for the Conservation of Atlantic Swordfish," 2013-02, 23rd Regular Meeting of the Commission, 18-25 November 2013, http://www.iccat.int/Documents/Recs/compendiopdf-e/2013-02-e.pdf.

27 IOTC, "Resolution 15/10 on Interim Target and Limit Reference Points and a Decision Framework," 19th Session of Commission, 27 April-4 June 2015, http://www.iotc.org/cmm/resolution-1510-target-and-limit-reference-points-and-decision-framework.

28 WCPFC, "Conservation and Management Measures to Develop and Implement a Harvest Strategy Approach for Key Fisheries and Stocks in the Western and Central Pacific Ocean," CMM 2014-06, 11th Regular Session of the Commission, 1-5 December 2014, https://www.wcpfc.int/doc/cmm-2014-06/conservation-and-management-measures-develop-and-implement-harvest-strategy-approach.

29 WCPFC, "Conservation and Management Measure on a Target Reference Point for WCPO Skipjack Tuna," CMM 2015-06, 12th Regular Session of the Commission, 3-8 December 2015, https://www.wcpfc.int/doc/cmm-2015-06/conservation-and-management-measure-target-reference-point-wcpo-skipjack-tuna.

30 Shelton Harley et al., *Stock Assessment of Bigeye Tuna in the Western and Central Pacific Ocean* (2014), https://www.wcpfc.int/system/files/SC10-SA-WP-01%20%5BBET%20Assessment%5D_rev1_25July.pdf.

31 International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean, "2016 Pacific Bluefin Stock Assessment."

32 Victor Restrepo et al., *Technical Guidance on the Use of Precautionary Approaches to Implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act* (1998), NOAA Technical Memorandum NMFS-F/SPO-31, http://www.nmfs.noaa.gov/sfa/NSGtkgd.pdf.

33 CCSBT 2015.

34 International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean, Pacific Bluefin Tuna Working Group, "Stock Assessment of Pacific Bluefin Tuna 2014, Executive Summary" (2014), www.biologicaldiversity.org/species/fish/Atlantic_bluefin_tuna/pdfs/PBF_2014_Exec_Summary_4_04-17.pdf.

35 IATTC, *87th Meeting: Minutes.*

36 ICCAT, *Report of the Standing Committee on Research and Statistics* (2015), http://iccat.int/Documents/Meetings/SCRS2015/SCRS_PROV_ENG.pdf.

37 ICCAT, *Report for Biennial Period, 2014-2015 Part II* (2015)—*Vol. 2* (2016), http://iccat.int/Documents/BienRep/REP_EN_14-15_II-2.pdf, (hereinafter *ICCAT 2016*).

38 Ibid.

39 ICCAT, "Recommendation by ICCAT to Establish a Rebuilding Program for Western Atlantic Bluefin Tuna," 98-07, 11th Special Meeting of the Commission, 16-23 November 1998, http://iccat.int/Documents/Recs/compendiopdf-e/1998-07-e.pdf; and ICCAT, "Recommendation by ICCAT to Establish a Multi-Annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean," 06-05, 17-26 November 2006, http://iccat.int/Documents/Recs/compendiopdf-e/2006-05-e.pdf.

40 ICCAT, *ICCAT 2016.*

41 Wenjiang Guan et al., "Preliminary Stock Assessment of Yellowfin Tuna (*Thunnus albacares*) in the Indian Ocean by Using Bayesian Biomass Production Model," IOTC–2015–WPTT17–27, http://www.iotc.org/sites/default/files/documents/2015/10/IOTC-2015-WPTT17-27_-_YFT_SA_BBPM_model_0.pdf.

42 WCPFC, "Conservation and Management Measure to Establish a Multi-Annual Rebuilding Plan for Pacific Bluefin Tuna," CMM 2015-04, 12th Regular Session of the Commission, 3-8 December 2015, https://www.wcpfc.int/doc/cmm-2015-04/conservation-and-management-measure-establish-multi-annual-rebuilding-plan-pacific.

43 International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean, "2016 Pacific Bluefin Stock Assessment."

44 Restrepo et al., *Technical Guidance.*

45 Harley et al., *Stock Assessment of Bigeye Tuna*.

46 Ibid.

47 Para. 6(g), United Nations, 2010 Review Conference Report.

48 IATTC, "Resolution on the Conservation of Sharks Caught in Association With Fisheries in the Eastern Pacific Ocean," C-05-03, 73rd Meeting of the Commission 20-24 June 2005, http://www.iattc.org/PDFFiles2/resolutions/C-05-03-Sharks.PDF.

49 IATTC, "Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association With Fisheries in the Antigua Convention Area," C-11-10, 82nd Meeting of the Commission, 4-8 July 2011, http://www.iattc.org/PDFFiles2/Resolutions/C-11-10-Conservation-of-oceanic-whitetip-sharks.pdf.

50 IATTC, "Resolution on the Conservation of Mobulid Rays Caught in Association With Fisheries in the IATTC Convention Area," C-11-10, 89th Meeting of the Commission, 23 June-3 July 3 2015, http://www.iattc.org/PDFFiles2/Resolutions/C-15-04-Conservation-of-Mobulid-Rays.pdf.

51 IATTC, "Collection and Analyses of Data on Fish-Aggregating Devices," C-13-04, 85th Meeting of the Commission, 10-14 June 2013, https://www.iattc.org/pdffiles2/resolutions/c-13-04-fads.pdf.

52 IATTC, "89th Meeting: Minutes of the Meeting," 23 June-3 July 2015, http://www.iattc.org/Meetings/Meetings2015/June/PDFs/IATTC-89-Minutes.pdf.

53 IATTC, "85th Meeting: Minutes of the Meeting," 10-14 June 2013, http://www.iattc.org/Meetings/Meetings2013/June/pdfs/IATTC-85-Minutes.pdf.

54 IATTC, "Resolution on the Conservation of Sharks."

55 See, e.g., ICCAT, "Recommendation by ICCAT on Hammerhead Sharks (family *Sphyrnidae*) Caught in Association With Fisheries Managed by ICCAT," 2010-08, https://www.iccat.int/Documents/Recs/compendiopdf-e/2010-08-e.pdf.

56 ICCAT, "Recommendation by ICCAT Concerning the Conservation of Sharks Caught in Association With Fisheries Managed by ICCAT," 2004-10, https://www.iccat.int/Documents/Recs/compendiopdf-e/2004-10-e.pdf.

57 Ibid.

58 ICCAT, "Resolution by ICCAT Concerning the Application of an Ecosystem-Based Approach to Fisheries Management," 2015-11, https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-11-e.pdf.

59 ICCAT, "Recommendation by ICCAT on Porbeagle Sharks Caught in Association With ICCAT Fisheries," 2015-06, https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-06-e.pdf.

60 IOTC, "Resolution 13/06 on a Scientific and Management Framework for the Conservation of Shark Species Caught in Association With IOTC Managed Fisheries" (2013), http://www.iotc.org/cmm/resolution-1306-scientific-and-management-framework-conservation-sharks-species-caught.

61 IOTC, "Resolution 12/09 on the Conservation of Thresher Sharks (Family Allopidae) Caught in Association With Fisheries in the IOTC Area of Competence" (2012), http://www.iotc.org/cmm/resolution-1209-conservation-thresher-sharks-family-alopiidae-caught-association-fisheries-iotc.

62 IOTC, "Resolution 13/05 on the Conservation of Whale Sharks (*Rhyncodon Typus*) (2015), http://www.iotc.org/sites/default/files/documents/compliance/IOTC_-_Compendium_of_ACTIVE_CMMs_10_September_2015.pdf.

63 IOTC, "Status of the Indian Ocean Silky Shark (FAL: *Carcharhinus falciformis*), Executive Summary," http://gcccic.saarc-sec.iotc.org/sites/default/files/documents/science/species_summaries/english/Silky%20shark%20Executive%20Summary.pdf.

64 IOTC, "Status of the Indian Ocean Scalloped Hammerhead Shark (SPL: *Sphyrna lewini*), Executive Summary," http://gcccic.saarc-sec.iotc.org/sites/default/files/documents/science/species_summaries/english/Scalloped%20hammerhead%20shark%20Executive%20Summary.pdf.

65 WCPFC, "Conservation and Management Measure for Oceanic Whitetip Sharks," CMM 2011-04, 8th Regular Session of the Commission, 26-30 March 2011, https://www.wcpfc.int/doc/cmm-2011-04/conservation-and-management-measure-oceanic-whitetip-sharks.

66 WCPFC, "Conservation and Management Measure for Silky Sharks," CMM 2013-08, 10th Regular Session of the Commission, 2-6 December 2013, https://www.wcpfc.int/doc/cmm-2013-08/conservation-and-management-measure-silky-sharks.

67 WCPFC, "Conservation and Management Measure on the Protection of Whale Sharks From Purse Seine Operations," CMM 2012-04, 9th Regular Session of the Commission, 2-6 December 2012, https://www.wcpfc.int/doc/cmm-2012-04/conservation-and-management-measure-protection-whale-sharks-purse-seine-operations.

68 WCPFC, "Conservation and Management Measure for Sharks," CMM 2010-07, 7th Regular Session of the Commission, 6-10 December 2010, https://www.wcpfc.int/doc/cmm-2010-07/conservation-and-management-measure-sharks (hereinafter "2010 Shark CMM"); WCPFC, "Conservation and Management Measure for Sharks," CMM 2014-05, 11th Regular Session of the Commission, 1-5 December 2014, https://www.wcpfc.int/doc/cmm-2014-05/conservation-and-management-measures-sharks ("2014 Shark CMM").

69 WCPFC, "2010 Shark CMM."

70 WCPFC, "2014 Shark CMM."

71 Ibid.

72 CITES, Proposal for Inclusion of Carcharhinus longimanus in Appendix II, CoP16 Prop.42, March 2013, https://www.cites.org/eng/cop/16/prop/E-CoP16-Prop-42.pdf.

73 CCSBT, "Resolution on a CCSBT Record of Vessels Authorised to Fish for Southern Bluefin Tuna," 22nd Annual Meeting, 15 October 2015, https://www.ccsbt.org/sites/ccsbt.org/files/userfiles/file/docs_english/operational_resolutions/Resolution_Authorised_Fishing_Vessels.pdf.

74 IATTC, "Resolution (Amended) on a Regional Vessel Register," Resolution C-14-01, 87th Meeting of the Commission, 14-18 July 2014, https://www.iattc.org/PDFFiles2/Resolutions/C-14-01-Regional-Vessel-Register.pdf.

75 ICCAT, "Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels 20 Metres in Length Overall or Greater Authorized to Operate in the Convention Area," 13-13, http://www.iccat.int/Documents/Recs/compendiopdf-e/2013-13-e.pdf.

76 IOTC, "Resolution 15/04 Concerning the IOTC Record of Vessels Authorized to Operate in the IOTC Area of Competence," 10 September 2015, http://www.iotc.org/cmm/resolution-1504-concerning-iotc-record-vessels-authorised-operate-iotc-area-competence.

77 WCPFC, "WCPFC Record of Fishing Vessels and Authorization to Fish," CMM 2013-10, 10th Regular Session of the Commission, 2-6 December 2013, https://www.wcpfc.int/doc/cmm-2013-10/wcpfc-record-fishing-vessels-and-authorization-fish.

78 CCSBT, "Resolution on Establishing the CCSBT Vessel Monitoring System," 15th Annual Meeting, 14-17 October 2008, https://www.ccsbt.org/sites/ccsbt.org/files/userfiles/file/docs_english/operational_resolutions/Resolution_VMS.pdf.

79 IATTC, "Resolution C-14-02, Resolution (Amended) on the Establishment of a Vessel Monitoring System (VMS)," 87th Meeting of the Commission, 14-18 July 2014, https://www.iattc.org/PDFFiles2/Resolutions/C-14-02-Vessel-Monitoring-Systems-VMS.pdf.

80 ICCAT, "Recommendation by ICCAT Amending Recommendation 03-14 by ICCAT Concerning Minimum Standards for the Establishment of a Vessel Monitoring System in the ICCAT Convention Area," 2014-09, http://www.iccat.int/Documents/Recs/compendiopdf-e/2014-09-e.pdf.

81 ICCAT, "Recommendation by ICCAT Amending the Recommendation 13-07 by ICCAT to Establish a Multi-Annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean," 2014-04, https://www.iccat.int/Documents/Recs/compendiopdf-e/2014-04-e.pdf.

82 ICCAT, "Recommendation by ICCAT Concerning Data Exchange Format and Protocol in Relation to the Vessel Monitoring System (VMS) for the Bluefin Tuna Fishery in the ICCAT Convention Area," 2007-08, http://www.iccat.int/Documents%5CRecs%5Ccompendiopdf-e%5C2007-08-e.pdf.

83 IOTC, "Resolution 15/03 on the Vessel Monitoring System (VMS) Programme" (2015) http://www.iotc.org/cmm/resolution-1503-vessel-monitoring-system-vms-programme.

84 WCPFC, "Commission Vessel Monitoring System," CMM 2011-02, 8th Regular Session of the Commission, 26-30 March 2012, https://www.wcpfc.int/system/files/CMM-2011-02-Conservation-and-Management-Measure-Commission-VMS.pdf.

85 CCSBT, "Resolution for a CCSBT Scheme for Minimum Standards for Inspection in Port," 22nd Annual Meeting, 15 October 2015, https://www.ccsbt.org/sites/ccsbt.org/files/userfiles/file/docs_english/operational_resolutions/Resolution_Minimum_Port_Inspection_Standards.pdf.

86 ICCAT, "Recommendation by ICCAT for an ICCAT Scheme for Minimum Standards for Inspections in Port," 2012-07, http://www.iccat.int/Documents%5CRecs%5Ccompendiopdf-e%5C2012-07-e.pdf.

87 ICCAT, "Recommendation of ICCAT to Support the Effective Implementation of Recommendation 12-07 by ICCAT for an ICCAT Scheme for Minimum Standards for Inspections in Port," 2014-08, http://www.iccat.int/Documents/Recs/compendiopdf-e/2014-08-e.pdf.

88 IOTC, "Resolution 10/11 on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing" (2010), http://www.iotc.org/cmm/resolution-1011-port-state-measures-prevent-deter-and-eliminate-illegal-unreported-and.

89 United Nations, *Secretary-General's Report*.