A Review of Monitoring, Control, and Surveillance Programs of International Fisheries Agreements with a View to the IWC's Inspection and Observation Scheme of the RMS

by

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Executive Summary

Based on a decision taken at its 52nd Meeting (IWC 2000-3), the International Whaling Commission (IWC) has decided to move towards completion of the Revised Management Scheme (the RMS), which must be completed before commercial whaling may resume. The IWC introduced the main elements of the RMS in Resolutions IWC 1992-3 and IWC 1994-5, which would be included in Schedule V of the International Convention for the Regulation of Whaling (ICRW). Since then, members of the IWC have debated many of its provisions, particularly those relating to "an effective inspection and observation scheme" which addresses, among other things, the issues of under-reporting and mis-reporting of catches.

While the IWC has debated the "Inspection and Observation Scheme," other international fisheries agreements have made substantial progress towards creating effective inspection and observation schemes, which they refer to as Monitoring, Surveillance and Control (MCS) programs. MCS programs have emerged amid rising concern over seriously depleted fisheries resources and growing concerns over illegal, unregulated and unreported (IUU) fishing. Through comprehensive monitoring, observation, and reporting obligations, members of fisheries treaties are using MCS programs to verify legal fishing and to identify illegal fishing. By identifying both legal and illegal fishing, MCS programs support efforts of member States to manage and conserve fisheries resources. The development of enforcement and compliance mechanisms to ensure that States fulfill their obligations has become an important element of effective MCS regimes in international fisheries agreements.

Due to the success and importance of MCS programs, this paper reviews the MCS programs of the following ten international fisheries agreements and organizations to identify mechanisms and principles common to fisheries agreements:

- Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Agreement on International Dolphin Conservation Program (AIDCP)
- Inter-American Tropical Tuna Convention (IATTC)
- International Convention for the Conservation of Atlantic Tuna (ICCAT)
- Northwest Atlantic Fisheries Organization (NAFO)
- Fisheries Forum Agency (FFA)
- U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement)
- Multilateral High-Level Conference: Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention)
- Convention for the Conservation of Southern Bluefin Tuna (CCSBT)
- U.N. Food and Agricultural Organization Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement).

This paper identifies six primary MCS mechanisms and principles commonly implemented by international fisheries agreements: vessel registration, vessel monitoring systems, comprehensive observer programs, catch documentation schemes, inspection, and compliance mechanisms, such

as trade prohibitions. These mechanisms and principles may prove useful for inclusion in an effective inspection and observation scheme of the RMS.

Vessel Registration

Vessel registration with the fishery organization's governing body provides an extremely common method for identifying and monitoring vessels fishing legally and illegally within the area designated by an agreement. All the agreements reviewed in this paper have, or have agreed to establish, vessel registries. The vessel registries are typically maintained by the relevant international body rather than the flag State and frequently used to make decisions concerning licenses and quotas.

The provisions establishing vessel registration require parties to provide the convention secretariat with specific information regarding each of its flagged vessels that intend to participate in the regulated fishery. This information includes the following, which is required to various degrees by IATTC, NAFO, MHLC Convention, ICCAT, Straddling and Highly Migratory Fish Stocks Agreement, the FAO Code of Conduct for Responsible Fisheries and the FAO Compliance Agreement:

- name of vessel, registration number, previous names (if known), and port of registry;
- a photograph of the vessel showing its registration number;
- previous flag (if known and if any);
- International Radio Call Sign (if any);
- name and address of registered owner(s);
- where and when built;
- length, beam, and moulded depth;
- fish hold capacity in cubic meters, and carrying capacity in metric tons;
- name and address of operator (manager) or operators (if any);
- type of fishing method or methods;
- gross tonnage;
- power of main engine or engines.

While some agreements use the vessel registry to monitor vessel activity, others, such as the FFA and CCAMLR, issue licenses based on this registration and the AIDCP issues dolphin mortality limits only to those vessels included in its registry. CCAMLR also requires registration of gear. By maintaining a registry of authorized vessels, the parties to an agreement can better ensure compliance with the agreement's conservation and management measures. For maximum effect, vessel registries are often coupled with surveillance requirements, in which reporting and other schemes track all vessel activity. In this way, any IUU fishing can be easily identified.

In almost all cases, the relevant commissions established requirements for vessel registries through recommendations and resolutions. Paragraph 28 of the Schedule to the ICRW already requires vessel registration, and the IWC could elaborate on those requirements or include additional requirements, if necessary, in any Schedule amendment implementing the RMS.

Vessel Monitoring Systems

Vessel Monitoring Systems (VMSs) are rapidly becoming the norm for ensuring proper enforcement, monitoring, and data collection in international fisheries. VMSs harnesses the power of Global Positioning Systems (GPS) and satellite technology to track fishing vessels via satellite transmitters installed on each vessel. With some VMSs, an Automatic Location Communicator (ALC) installed on a vessel sends a signal (via satellite) that transmits information regarding the vessel's location, speed, and heading to a monitoring headquarters where the data is automatically correlated with a GPS vessel position. An automated system issues an alert to the relevant parties if it identifies a vessel potentially involved in illegal fishing activities.

The two most recent international fisheries agreements, the MHLC Convention and the Straddling Stocks Agreement, as well as CCAMLR, FFA, and NAFO, require vessels to use VMSs to transmit "real-time" or "near real-time" data for enforcement and monitoring purposes. ICCAT has a pilot VMS program, CCSBT is exploring the use of VMS, and the FAO recommends that vessels use VMS. Some VMS programs, such as CCAMLR's and FFA's, prohibit a party from issuing fishing licenses to vessels without a VMS. The MHLC Convention and FFA require an international institution to monitor the information from VMS, while other agreements, such as CCAMLR and NAFO, allow the contracting party to monitor. The typical requirements of a VMS program include the following:

- tamper proof;
- fully automatic and operational at all times regardless of environmental conditions;
- able to provide real time data;
- able to provide geographical position of the vessel with a position error of less than 500 meters and with a confidence interval of 99%;
- able to provide special messages when the vessel enters or leaves the convention area and when it moves between one Convention area, subarea or division within the convention area.

Because VMSs transmit information automatically for computer analysis at an international command center, they allow for quick identification of potentially illegal fishing activity and rapid distribution of the surveillance data to enforcement officers. By enhancing the responsiveness of enforcement vessels, the VMS process significantly reduces the time and costs associated with effective implementation of fisheries treaties. The power and effectiveness of VMSs can be seen in Chile, which launched a satellite control system in August 2000. In the first 30 days of operation, Chile monitored 1,467 vessels, compared with 1,410 for all of 1999. Chile found 11 vessels fishing illegally and brought legal actions against them. Because VMSs are accurate and efficient, many governments view VMS as an indispensable tool for scientific data gathering and fisheries enforcement. Japan has stated that VMSs are a "necessary measure to ensure the transparency of [fisheries] research" and has even conducted a number of trials using various types of VMS equipment. Australia and New Zealand have said that incidents of false position reports by vessels "particularly underline the need for… implementing measures such as properly functioning VMS and vessel registers."

The inherently global nature of satellite technology makes VMSs a particularly good enforcement tool for international fisheries regimes. According to the United Nations Food and Agricultural Organization (FAO), by ensuring compliance with the world's fisheries agreements, VMSs significantly contribute to restoration of global fisheries. The FAO has also stated that VMSs allow the efficient and inexpensive monitoring of industrial fishing fleets, because they provide immediate access to vessel location, details of its activities, and near real_time transmission of important catch to verify status of quotas and information necessary for fisheries management. According to the FAO, not only does VMS play an integral role in "an effective and well planned MCS program" to enhance fisheries management, but "it also leads to improved safety for vessels and crews and permits the real_time transfer of market information, which can give important revenue gains where alternative port delivery decision or catch can be made at sea."

Observer Programs

According to many fisheries management experts, compliance and accurate data collection are directly linked to the level of observer coverage on a fishing vessel. Observers are able to collect detailed information on fishing operations, as well as monitor compliance and conservation measures. Observers collect comprehensive data that other vessel members do not have time to collect, including total catch and size composition by species, biological data, and incidental mortalities of non-target species. Independent observers guarantee transparency among all parties to an agreement and ensure that all parties comply with an agreement's measures in a non-discriminatory manner.

For these reasons, all of the fisheries agreements reviewed in this paper have adopted observer programs. Further, most of them rely to some extent on coordination or complete oversight by the agreement's Secretariat or Commission. Even then, however, Member states may be able to nominate or designate the observers. While a consensus observer program probably cannot be identified, one trend is clear: most agreement's are moving towards 100% observer coverage. Many fisheries managed by CCAMLR, IATTC, and NAFO now have 100% observer coverage.

Catch Documentation

The international agreements surveyed are all designed to preserve marine life in sustainable, species-specific quantities for the use and enjoyment of all interested parties, including future generations. To ensure that catches are in fact sustainable and consistent with catch quotas, the agreements have developed methods to track catches in specified waters and into internal markets. Vessel operators, importers, and processors often have responsibilities for providing information for the catch document, and movement of the fish is prohibited without the catch document. As with other MCS mechanisms, catch documentation is most effective when accomplished in conjunction with other MCS mechanisms, such as VMS and inspection. As explained below with CCAMLR, the vessel captain must complete catch documents and transmit them electronically to the flag State. This strategy provides immediate documentation of the catch to ensure quotas are not exceeded. As commentators have said, "It is of utmost

importance . . . that the staff have . . . an extensive and sophisticated system for collecting and processing the data."

As species have become more valuable and IUU fishing for those species has increased, catch documentation schemes have become more prevalent. For example, CCAMLR has introduced a catch documentation scheme for toothfish. IATTC, ICCAT, and CCSBT have catch documentation schemes for tuna species. These catch documentation schemes require vessel captains, importers, and exporters to include information, such as the species, catch weight, names of importers and exporters, in the catch document. The responsible authority in the country of import or export must validate the catch document. In all cases, contracting parties are prohibited from importing these species unless the import is accompanied by a catch document. In the case of CCAMLR, parties cannot import toothfish with a catch document, even if the toothfish was caught outside the Convention Area. Catch documentation schemes allow Parties to identify legally harvested fish from illegally harvested fish. Thus, while catch documentation schemes are enforced at the border, and thus appear to be trade measures, they are more accurately viewed as catch verification measures.

Inspection

The authority to board and inspect fishing vessels at any given time is an integral part of the effectiveness of any fisheries agreement to enforce its provisions. For that reason, very detailed inspection provisions are commonplace within the fisheries agreements surveyed. In general, inspectors have authority to inspect within its jurisdiction any fishing vessel, including the fish, fishing gear, fish samples, and all relevant documents, including fishing logbooks and cargo manifest (in the case of a mother ship or carrier vessel), to verify compliance with the agreement's measures. The master of the vessel must cooperate with the inspector. Parties must act on reports of apparent violations, collaborate with the Contracting Parties to facilitate judicial or other proceedings arising from reports of inspectors acting under these arrangements, and notify the Commission of any action taken to address the violation. In some cases, such as with ICCAT, when a Party's vessel enters, lands, or transhipts their catches in foreign ports, it may send its own inspectors to inspect their own vessels, provided that the port State has invited the flag State inspector.

Further, NAFO, CCAMLR, and ICCAT require Contracting Parties to inspect a Non-Contracting Party vessel that has fished in the Convention Area and enters a port of a Contracting Party. The vessel cannot not land or transship any fish until the inspection occurs. If the inspection reveals any fish regulated by the agreement and caught within the Convention Area, then all contracting Parties must prohibit that vessel from landings and transshipments of all fish from that vessel.

Moreover, some agreements, such as the Straddling and Migratory Fish Stocks Agreement and NAFO, permit inspection and boarding of non-flag State vessels on the high seas. The Straddling and Migratory Fish Stocks Agreement also permits inspection and boarding of fishing vessels of States that have signed the Agreement, but not a regional agreement developed pursuant to the Agreement. Several countries, including Australia, New Zealand, and Norway, view this as an important development in international law.

Compliance

International agreements to conserve and manage fisheries have little effect without adequate compliance regimes. The ongoing struggle to protect tuna, toothfish and other species from IUU fishing highlights the problem. As a result, many fisheries agreements require parties to adopt national legislation that makes breaches of the agreement a punishable offence and to prosecute and sanction violators under these laws in a way that deters future violations (*see, e.g.,* CCAMLR, FAO Compliance Agreement, Straddling and Migratory Fish Stocks Agreement, MHLC Convention). CCAMLR, the Straddling and Migratory Fish Stocks Agreement, and the MHLC Convention also allow parties to deny fishing privileges to a vessel in violation of fishing laws until it complies with sanctions imposed by any party.

The inadequacy of national measures alone, however, has led to the creation of international compliance mechanisms within CCAMLR, CCSBT, ICCAT, and NAFO that include trade restrictions and loss or reduction of fishing privileges for the countries whose vessels fish inconsistently with an agreement's conservation measures. Under some agreements, including FFA, AIDCP, and ICCAT, vessels may also lose their licenses. Many agreements, including CCAMLR, NAFO, MHLC Convention, and ICCAT also prohibit landings and transshipments by non-party vessels sighted in the agreement area and landings or transshipments of illegal catch. Party's also subject themselves to economic repercussions when their vessels violate an agreement's conservation measures.

These international compliance mechanisms are forward looking because they directly address the problem of IUU fishing. Interestingly, the parties have often created such mechanisms recommendations rather than actual treaty text, as in ICCAT and CCAMLR (the Standing Committee of the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) provides another example). As compliance is the mechanism that ties the other MCS provisions together, "an effective observation and inspection" scheme in the RMS must include some regime international regime for compliance.

I. Introduction

Based on a decision taken at its 52nd Meeting (IWC 2000-3), the International Whaling Commission (IWC) has decided to move towards completion of the Revised Management Scheme (the RMS), which must be completed before commercial whaling may resume. The IWC introduced the main elements of the RMS in Resolutions IWC 1992-3 and IWC 1994-5, which would be included in Schedule V of the International Convention for the Regulation of Whaling (ICRW). Since then, members of the IWC have debated many of its provisions, particularly those relating to "an effective inspection and observation scheme"[1] which addresses, among other things, the issues of under-reporting and mis-reporting of catches.

While the IWC has debated the "Inspection and Observation Scheme," other international fisheries agreements have made substantial progress towards creating effective inspection and observation schemes, which they refer to as Monitoring, Surveillance and Control (MCS) programs. MCS programs have emerged amid rising concern over seriously depleted fisheries resources and growing concerns over illegal, unregulated and unreported (IUU) fishing. Through comprehensive monitoring, observation, and reporting obligations, members of fisheries treaties are using MCS programs to verify legal fishing and identify illegal fishing. By identifying both legal and illegal fishing, MCS programs support efforts of member States to manage and conserve fisheries resources.

Due to the success and importance of MCS programs, this paper reviews the MCS programs of the following ten international fisheries agreements and organizations to determine the mechanisms common to fisheries agreements:

- Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)[2]
- Agreement on International Dolphin Conservation Program (AIDCP)[3]
- Inter-American Tropical Tuna Convention (IATTC)[4]
- International Convention for the Conservation of Atlantic Tuna (ICCAT)[5]
- Northwest Atlantic Fisheries Organization (NAFO)[6]

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[1] IWC Resolution 1996-6 states that the RMS must include:

(i) an effective inspection and observation scheme

(ii) arrangements to ensure that the total catches over time are within the limits set under the Revised Management Scheme; and

(iii) incorporation into the Schedule of the specification of the Revised Management Procedure and the other elements of the Revised Management Scheme.

Prior resolutions called for "an effective inspection and observation scheme which fully addresses *inter alia* the issues of under-reporting and mis-reporting of catches."

[2] Convention for the Conservation of Antarctic Marine Living Resources, May 20, 1980, T.I.A.S. 10240, *reprinted in* 10 INTERNATIONAL LEGAL MATERIALS 841; available at http://www.ccamlr.org [hereinafter CCAMLR].

[3] Agreement on the International Dolphin Conservation Program, May 21, 1998, 1998 U.S.T. Lexis 149, available at http://www.iattc.org/idcp.htm [hereinafter AIDCP].

[4] Inter-American Tropical Tuna Convention, May 31, 1949, U.S.T. 230, T.I.A.S. 2044, available at http://www.iattc.org/ [hereinafter IATTC].

[5] International Convention for the Conservation of Atlantic Tunas, May 14, 1966, 673 U.N.T.S. 63, 20 U.S.T. 2887. available at http://www.iccat.es/ [hereinafter ICCAT].

• Fisheries Forum Agency (FFA)[7]
• U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement)[8]
• Multilateral High-Level Conference: Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention)[9]
• Convention for the Conservation of Southern Bluefin Tuna (CCSBT)[10]
• U.N. Food and Agricultural Organization Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement).[11]

In reviewing these agreements, this paper is searching for appropriate solutions for an effective inspection and observation scheme which fully addresses under-reporting and mis-reporting of catches within the RMS. This paper concludes that international fisheries agreements include a broad array of mechanisms to ensure that catch levels are sustainable and that illegal fishing can be detected and penalized and that these mechanisms hold promise for the RMS. These MCS programs typically include the following complementary mechanisms:

• Vessel Registration with the Secretariat of the relevant convention
• Vessel Monitoring System
• Observer Schemes
• Inspection
• Tracking of Trade/Documentation of Catch
• Compliance Regime

Significantly, these provisions do not operate in isolation. Instead, fisheries agreements adopt all or most of these mechanisms, because they complement each other and make each element of the MCS program more effective. *See* Tables 1 and 2. For example, several

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[6] Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, Oct. 24, 1978, 1978 U.S.T. LEXIS 315, *reprinted in* 19 INTERNATIONAL LEGAL MATERIALS 830, available at www.nafo.ca/about/convention.htm. [hereinafter NAFO].
[7] South Pacific Forum Fisheries Agency Convention, July 10, 1979, *reprinted in* 2 OCEAN YEARBOOK 578 (1980); UN Doc. FAO Fisheries Report No. 293, 201-204 (1983); INTERNATIONAL ENVIRONMENTAL LAW -- MULTILATERAL TREATIES, N. B2UB7/VI/82), available at http://www.ffa.int [hereinafter FFA Convention].
[8] U.N. Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks: Agreement for the Implementation of the Provisions of this United Nations Convention of the Law of the Sea of 10 December 1982, Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, (not yet in force), *reprinted in* 34 INTERNATIONAL LEGAL MATERIALS 1542 [hereinafter Straddling and Migratory Fish Stocks Agreement].
[9] Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, *opened for signature* Sept. 5, 2000 (not yet in force), available at: http://www.spc.org.nc/coastfish/asides/conventions/ [hereinafter MHLC Convention]
[10] 1993 Convention for the Conservation of Southern Bluefin Tuna, May 10, 1993, Austl.-Japan-N.Z., *reprinted in* Division for Ocean Affairs & the Law of the Sea, U.N. Office of Legal Affairs, Law of the Sea Bulletin No. 26, Oct. 1994, at 57, available at http://www.home.aone.net.au/ccsbt/conventi.html [hereinafter CCSBT].
[11] U.N. Food and Agricultural Organization Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, Nov. 24, 1993, 31 INTERNATIONAL LEGAL MATERIALS 968, available at http://www.faoinfo/fishery.asp [hereinafter FAO Compliance Agreement].

agreements require vessel registration with the Commission or Secretariat of the fisheries agreement, a requirement that helps identify which fishing vessels can legally fish in areas under the jurisdiction of that agreement. The vastness of the oceans, however, makes identification of vessels and enforcement of infractions extremely difficult. For that reason, agreements require vessels to use Vessel Monitoring Systems that rely on satellite and other technology to provide the Commission or Secretariat with real-time or near-real-time information concerning the fishing activities of vessels. When a registered vessel enters into a "Convention Area," the Secretariat knows immediately that the vessel has authority to fish in that area at that time of year. Further, vessels of non-member states will be identified immediately as fishing in a manner that undermines the agreement and the parties can take appropriate action against the vessel and the flag State. If the vessel has an observer onboard, the observer can further verify that the vessel is fishing consistently with other conservation and management measures.

Table 1 – Monitoring, Surveillance, and Control Programs of Fisheries Agreements: Vessel Registration, Vessel Monitoring Systems (VMS), and Observer Programs

Agreement	Type of Vessel Registry	VMS	Observer Programs
CCAMLR	• International Registry • maintained by Secretariat	• Required • Real-time reporting • No fishing license without VMS • National Monitoring	• 100% coverage in select fisheries • international program
AIDCP	• International Registry • maintained by International Review Panel (IRP) • IRP issues dolphin mortality quotas only to registered vessels	• Not Required	• 100% coverage in many fisheries • international program
IATTC	• International Registry • maintained by Director	• Not required	• 100% coverage in select fisheries • international program
ICCAT	• International Registry for bigeye tuna and albacore, and all high seas fishing vessels larger than 24 meters • maintained by Executive Secretary	• Pilot Project • Real-time reporting	• national observer programs recommended • up to 25% coverage in one fishery, less in others
NAFO	• International Registry of research and fishing boats (of more than 50 gross tons) • maintained by Executive Secretary	• Required • Real-time reporting • National monitoring	• 100% coverage • international program
FFA	• International Registry of distant water fishing vessels • Parties can license vessels only those vessels in the registry	• Required • No fishing license without VMS • International monitoring	• regional observer program
Straddling Stocks Ag.	• Flag States must create registry	• Required • "timely" reporting	• flag States must create through national or regional programs
MHLC Conv.	• International Registry • maintained by Commission	• Required • Real-time • International monitoring of high seas vessels	• "sufficient level" of coverage required • international program
CCSBT	• Agreement to create Registry agreed in July 1999	• Not required • Parties examining VMSs • Japan implementing for scientific fishing	• national program
FAO	• International Registry • maintained by FAO	• Recommended	• Recommends observer programs

Table 2 – Monitoring, Surveillance, and Control Programs of Fisheries Agreements: Catch Documentation, Inspection, and Compliance Regimes

Agreement	Catch Documentation Scheme (CDS)	Inspection	Compliance Regime
CCAMLR	• Yes, catch document required for all landings, transhipments and imports of toothfish	• Yes, on board inspection of any fishing vessel • Mandatory inspection of non-party vessels	• Flag states must prosecute and impose sanctions for noncompliance • Sanctions must deprive violators of benefits of noncompliance • Prohibitions against transhipments of non-parties • Standing Committee on Observation and Inspection reviews parties' implementation of CCAMLR
AIDCP	• Yes, observer completes a "Tuna Tracking Form" which designates whether catch was "dolphin safe" • Dolphin safe tuna then must be kept separate and given different lot numbers from other tuna	• Yes, pursuant to national inspection programs	• Sanctions must deprive violators of benefits of noncompliance • Automatic loss or reduction of Dolphin Mortality Limits (DMLs) for fishing in excess of DMLs • International Review Panel reviews compliance issues
IATTC	• Yes. See AIDCP above	• Yes, pursuant to national inspection programs	• Compliance Committee reviews compliance and makes recommendations
ICCAT	• Yes, imports of bluefin tuna must be accompanied by a "statistical document" • Parties and entities that import or land frozen tunas or tuna-like products must collect and examine import and landing data • Parties have agreed to catch documentation for swordfish and bigeye tuna	• Yes, on board inspection of any fishing vessel • Mandatory inspection of non-party vessels • Port inspection scheme for all vessels of parties for all ICCAT species	• Commission may reduce quotas, revoke licenses, or impose trade restrictions against Members for noncompliance • Commission may impose trade restrictions against non-Members • Process created to identify countries that undermine effectiveness of ICCAT
NAFO	• requires significant reporting of gear used, catch quotas, anc catches	• Yes, on board inspection of any fishing vessel, including on high seas • Mandatory inspection of non-party vessels	• Parties must take judicial action against violators • NAFO may reduce quotas for Party's in noncompliance
FFA	• requires significant reporting of gear used, catch quotas, anc catches	• no information available	• May revoke a vessel's registration and thus ability to obtain license
Straddling Stocks Ag.	• requires significant reporting of gear used, catch quotas, anc catches	• Yes, on board inspection of any fishing vessel, including on high seas	• Sanctions must deprive violators of benefits of noncompliance • can seize and arrest non-flag State vessels on high seas
MHLC Conv.	Not yet	• Yes, on board inspection of vessels on the high seas	• Commission may create procedure for imposing trade restrictions against any State whose vessels undermine the Convention • Sanctions must deprive violators of benefits of noncompliance

CCSBT	• Yes, imports of southern bluefin tuna must be accompanied by statistical document	• No	• Commission may recommend trade restrictions against any State whose vessels undermine the Convention
FAO	• requires significant reporting of gear used, catch quotas, anc catches	• Yes, on board inspection of fishing vessels	• Sanctions must deprive violators of benefits of noncompliance • Sanctions must include denial, suspension or withdrawal of authorization to fish if in noncompliance

II. Vessel Registration

A. Rationale for Vessel Registration

Vessel registration with the fishery organization's administrative body provides an extremely common method for identifying and monitoring vessels authorized to fish within the area designated by an agreement as well as those vessels fishing illegally. All the agreements surveyed here have or have agreed to require registration of fishing vessels. In addition, the registry is typically maintained by the agreement's administrative body rather than the flag State. *See* Table 1. The parties provide the convention secretariat with specific information regarding each of its flagged vessels that intend to participate in the regulated fishery. Some agreements, such as the NAFO and CCAMLR, also require registration of research vessels. Some governing bodies, such as FFA and CCAMLR, issue licenses based on this registration while others maintain the vessel registry for monitoring purposes. Marking of gear may also be required in this type of scheme, as in CCAMLR. Vessel registries are often coupled with surveillance requirements, in which reporting and other schemes track all vessel activity (*see* Section III below). In this way, any IUU fishing can be easily identified.

By maintaining a registry of authorized vessels, the parties to an agreement can better ensure compliance with the agreement's conservation and management measures. For example, the AIDCP seeks to reduce dolphin mortalities in the tuna purse-seine fishery in the Agreement Area to "levels approaching zero through the setting of annual limits."[12]AIDCP Parties maintain a vessel registry of those vessels requesting a Dolphin Mortality Limit (DML)[13]and a list of qualified captains.[14] The International Review Panel of the AIDCP then distributes DMLs only to those vessels with qualified captains in the registry.[15]

A vessel registry can also help countries assert their sovereign rights over living marine resources in their exclusive economic zones (EEZs), particularly highly migratory species, as with the FFA.[16] Because many FFA Members are small island States that have limited capacities to protect these rights, the FFA established the Regional Register of Foreign Fishing Vessels to

[12] AIDCP, at Art. II.1.
[13] *Id.* at Annex IV, para. I.1.
[14] *Id.* at Annex IV, para. I.2.
[15] *Id.* at Annex IV, paras. I.2, I.5.
[16] FFA Convention, at Preamble and art. III.

control foreign fishing vessels operating in the EEZs of FFA Members.[17]The Register is designed to shift some of the responsibility for ensuring compliance to the flag State or fishing association, and away from an FFA Member.[18]

B. Vessel Registration and the IWC

Vessel registration for whaling vessels is a very old and accepted concept. Whaling agreements in force by 1946 prohibited vessels from whaling unless the flag State had issued a license authorizing the vessel to whale.[19] The current Schedule of the ICRW requires the parties to maintain a vessel registry of factory ships, catcher ships, and land stations.[20] Paragraph 28 of the Schedule requires the following information:

> (1) The name and gross tonnage of each factory ship.
> (2) For each catcher ship attached to a factory ship or land station:
>
> > (i) the dates on which each is commissioned and ceases whaling for the season;
> > (ii) the number of days on which each is at sea on the whaling founds each season;
> > (iii) the gross tonnage, horsepower, length and other characteristics of each; vessels used only as tow boats should be specified.
>
> (3) A list of land stations which were in operation during the period concerned, and the number of miles searched per day by aircraft, if any.

The IWC vessel registry appeared to be working smoothly until 1987, when Norway, Iceland and Japan stopped giving information for the registry due to concerns relating to incidents between protestors and whaling vessels.[21] Without information from these countries, which still had sizeable whaling fleets, the IWC could not maintain a complete and accurate registry and the registry became officially dormant in 1994.

As the next section shows, the failure of the IWC to maintain a vessel registry is inconsistent with major international fisheries programs. Because the major purpose of vessel registration is to identify whether boats are fishing consistently with conservation and management measures, and to distinguish legally authorized vessels from "pirate whalers," vessel registration can be incorporating into the RMS as a tool for "inspection and observation."

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[17] *The South Pacific Forum Fisheries Agency Regional Register of Foreign Fishing Vessels*, *The Harmonised Minimum Terms and Conditions for Foreign Fishing Vessels,* (Oct. 1990, as amended Nov. 24-28 1997) FFC 34 [hereinafter *FFA Minimum Terms and Conditions*]. *See also, Monitoring Control and Surveillance*, available at <http://www.ffa.int/monitor.html> [hereinafter *FFA MCS*].

[18] Personal communication with Andrew Richards, Manager, Monitoring, Control and Surveillance, FFA (October 5, 2000).

[19] PATRICIA BIRNIE, INTERNATIONAL REGULATION OF WHALING: FROM CONSERVATION OF WHALING TO CONSERVATION OF WHALES AND REGULATION OF WHALE WATCHING 139 (1985).

[20]Schedule to the International Convention for the Regulation of Whaling, para. 28 [hereinafter Schedule and ICRW].

[21] *Chairman's Report of the Thirty-Ninth Annual Meeting* Section 21, REP. INTL. WHAL. COMMN 38, 1988 (1987).

C. Vessel Registration in International Fisheries Agreements

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). CCAMLR requires an international registry of vessels and gear. CCAMLR requires Contracting Parties to license their flag vessels operating in the Convention Area and prohibits vessels of Contracting Parties from fishing in the Convention Area without a license.[22]The license, issued by the Contracting Party itself, sets forth the specific areas, authorized species and time period for fishing and all other specific conditions.[23]A Contracting Party may only issue licenses to vessels flying its flag, and to those vessels that have satisfied the Contracting Party that they can exercise their responsibilities under the Convention and its Conservation Measures.[24]Each licensed vessel must carry its license and must make it available for inspection at any time.[25]Each Contracting Party must verify that all of its fishing vessels comply with the conditions of its license.[26]

CCAMLR also requires marking of licensed fishing vessels so that they can be readily identified by internationally recognized standards.[27] Gear, including marker buoys and similar floating gear, "shall be clearly marked at all times with the letter(s) and/or numbers of the vessels to which they belong."[28]

CCAMLR requires Parties to provide the Commission with "information about their harvesting activities, including fishing areas and vessels, so as to enable reliable catch and effort statistics to be compiled."[29]To implement this requirement, Parties must provide the Secretariat the names of all vessels intending to conduct fishing for research purposes before the commencement of the research cruise,[30]pursuant to CCAMLR's System of Inspection.[31] They must also transmit to the Secretariat the name of the vessel, time periods authorized for fishing,

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[22] Conservation Measure 119/XVII *Licensing and Inspection Obligations of Contracting Parties with regard to their Flag Vessels Operating in the Convention Area,* para. 1, available at <http://www.ccamlr.org/English/e_pubs/e_measures/e_cc99_00/e_cm99_00page6.htm>.
[23] *Id.* at para. 1.
[24] *Id.* at para. 2. Other requirements of licensed vessels include timely notification by the vessel to its Flag State of exit from and entry into any port; notification of entry into the Convention Area and movement between areas; reporting by the vessel of catch data; and operation of a vessel monitoring system on board. *Id.*
[25] *Id.* at para. 3.
[26] *Id.* at para. 4.
[27] Conservation Measure 146/XVII *Licensing and Inspection Obligations of Contracting Parties with regard to their Flag Vessels Operating in the Convention Area*, para. 1, available at <http://www.ccamlr.org/English/e_pubs/e_measures/e_cm99_00/e_cm99_00page6.htm>.
[28] *Id.* at para. 2.
[29] CCAMLR, at art. XX.2.
[30] Conservation Measure 64/XII, The Application of Conservation Measures to Scientific Research, paras. 2(a) and 3(a), available at <http://www.ccamlr.org/English/e_pubs/e_measures/e_cm99_00/e_cm99_00page4.htm#MEASURE 64/XII>.
[31] *CCAMLR System of Inspection*, as adopted at CCAMLR-VII (para. 124) and amended at CCAMLR-XII (paras. 6.4 and 6.8), CCAMLR-XIII (para. 5.26), CCAMLR-XIV (para. 7.22, 7.26 and 7.28), CCAMLR-XV (para. 7.24) and CCAMLR-XVI (para. 8.14) and CCAMLR-XVIII (para. 8.25). *CCAMLR System of Inspection*, available at <http://www.ccamlr.org/English/e_basic_docs/e_basic_docs_online/e_part9.htm>.

areas of fishing, species targeted, and gear used within seven days of the issuance of each license.[32]

CCAMLR's vessel registry plays an especially important role in protecting toothfish populations. CCAMLR's Commission has expressed "extreme concern" that IUU fishing causes serious depletion of toothfish populations, jeopardizes the status of spawning stocks, and causes high incidental mortality of threatened species of seabirds. CCAMLR's vessel registry fosters quick identification of IUU vessels in the Convention area, which enables the Contracting Parties and complying non-member states to take swift action against IUU vessels, including port closures to vessels participating in IUU activities.

Agreement on International Dolphin Conservation Program (AIDCP). The AIDCP also maintains an international vessel registry. A Party may receive its Dolphin Mortality Limits (DMLs) only after that Party submits a list of vessels under their jurisdiction that have requested a DML.[33]The AIDCP's International Review Panel reviews vessel registry information and compiles a list of the vessels that qualify for DMLs.[34] To qualify for a DML, a vessel must certify that it possesses all dolphin safety gear and equipment,[35]its captain and crew received approved training in dolphin release and rescue techniques, its carrying capacity exceeds 363 metric tons, its captain's record of performance indicates its qualification, and the vessel is not otherwise disqualified.[36] The Parties then use this information to calculate allotments of DMLs among their fleets.[37]Each year, the Parties must notify the Director of the allocation of DML among its fleet, and no vessel may begin fishing for tunas associated with dolphins until the Director receives this notification.[38] The vessel registry has become an essential tool for ensuring compliance with DMLs.[39]

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[32] *CCAMLR System of Inspection*, *supra* note 31, at Section IV.a and IV.b <http://www.ccamlr.org/English/e_basic_docs/e_basic_docs_online/e_part9.htm>.

[33]AIDCP, at Annex IV, para. I.1. The AIDCP vessel registry program requires Parties to provide annually "a list of vessels … of carrying capacity greater than 363 metric tons … that have requested a full-year DML …, indicating those other vessels that are likely to be operating in the Agreement Area …, and vessels that have requested a second-semester DML." *Id.* at Annex IV, para. I.2.

[34] *Id,* at Annex VII.1(a) and Annex IV, para. I.2.

[35] *Id.* at Annex IV, para. I.2(a). Annex VIII lists the required dolphin safety gear and equipment for vessels with a carrying capacity of more than 363 metric tons operating in the Agreement Area. This equipment includes purse seine nets equipped with a dolphin safety panel (DSP) with specific characteristics, three operable speedboats each with towing bridles or posts and tow lines, operable rafts suitable for the observation and rescue of dolphins, two operable facemasks suitable for underwater observation, and an operable long-range floodlight.

[36] *Id.* at Annex IV, para. I.2(a)-(e). A vessel becomes otherwise disqualified if upon assignment of a DML in certain time periods it does not set on dolphins. Any vessel that loses its DML on two consecutive occasions loses its eligibility to receive a DML for the following year. Annex IV, para. II.1. Vessels operating under the jurisdiction of a Party whose laws and regulations prohibit vessels under its jurisdiction from fishing for tuna in association with dolphins are not qualified to receive DMLs either. Annex IV, para. I.3.

[37] *Id.* at Annex IV, para. I.8.

[38] *Id.* at Annex IV, para. I.10.

[39] The vessel registry also determines the amount each party pays to support the On-Board Observer Program, because the Parties pay this fee at the time they submit their list of vessels. Carrying capacity of the vessels forms the basis of fee calculation. *Id.* at Annex II, paras 11(a)-(b).

Convention to Establish an Inter-American Tropical Tuna Commission (IATTC). To foster the IATTC's conservation and management measures, such as the collection of catch statistics and reports on fishing operations regulated by the IATTC,[40] the Parties decided at their Annual Meeting in June 2000 to create an international registry of authorized vessels active in the IATTC management area.[41] To register a vessel, a Party must supply the Director, who maintains the registry, with information about each vessel, including its name, when and where it was built, the types of fishing methods it uses, its carrying capacity, the name and address of the registered owner and operator(s), and a photograph of the vessel, among other things.[42] These requirements are almost identical to those of CCAMLR, described above.

In addition, the IATTC's Commission gathers information regarding fishing vessels of non-parties that undermine the conservation and management measures of the IATTC.[43] The Director and parties use this information to take necessary action to ensure that such vessels and non-parties cease fishing in ways that undermine IATTC measures.[44]

International Convention for the Conservation of Atlantic Tunas (ICCAT). ICCAT also requires the use of international vessel registries, based on three binding recommendations, designed to conserve and manage northern albacore[45] and bigeye tuna.[46] In the bigeye fishery, each year Parties must submit a list of their vessels larger than 24 meters.[47] Another measure limits the number of fishing vessels larger than 24 meters that can fish for bigeye tuna based on the average number of fishing vessels that fished for bigeye tuna in 1991 and 1992.[48] These two measures work together to control the overall catch of bigeye in an attempt to recovery this over-exploited stock.

In addition, Parties must submit a list of vessels participating and that will participate in a directed fishery for northern albacore to ICCAT's Executive Secretary.[49] This registry is necessary to ensure compliance with ICCAT limits on a Party's fishing capacity, which are based on the average number of vessels participating in the fishery during the period 1993-1995.[50] The albacore vessel registry exists to prevent increases in fishing mortality.[51] For both the bigeye

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[40] IATTC, at art. III.
[41] *IATTC Resolution on a Regional Vessel Register* (June 2000), available at <http://www.iattc.org>.
[42] *Id.* at para. 2. Information should include vessel name, registration number, previous name and port of registry, photograph of vessel showing registration number, previous flag, International Radio Call Sign, name and address of registered owner, where and when built, length, beam and moulded depth, fish hold capacity, carrying capacity, operator's name and address, fishing method, gross tonnage, and power of main engine.
[43] *IATTC Resolution on Fishing by Vessels of Non-Parties* (June 2000), available at <http://www.iattc.org>.
[44] *Id.*
[45] ICCAT Recommendation 98-8 *on Limitation of Fishing Capacity on Northern Albacore*, adopted at the 11th Special Meeting, November 1998, entered into force June 21, 1999 [hereinafter ICCAT Recommendation 98-8].
[46] ICCAT Recommendation 98-2 *on Registration and Exchange of Information on BET Vessels,* Special Meeting, November 1998, entered into force June 21, 1999 [hereinafter ICCAT Recommendation 98-2]; ICCAT Recommendation 98-3 *on Fishing Vessels > 24m LOA*, 11th Special Meeting, November 1998, entered into force June 21, 1999 [hereinafter ICCAT Recommendation 98-3].
[47] ICCAT 98-2, *supra* note 46.
[48] ICCAT 98-3, *supra* note 46.
[49] ICCAT 98-8, *supra* note 45, at para. 1.
[50] *Id.* at para. 2.
[51] *Id.* at Preamble.

tuna and northern albacore vessel registry schemes, exceptions exist for recreational vessels and for Parties under certain catch levels.[52]

At the most recent ICCAT meeting, the Commission agreed to implement a register of vessels more than 24 meters in length fishing for tuna and related species.[53] Prior to that decision, the Parties had approved a non-binding resolution that encourages parties to maintain and submit to the ICCAT Commission a vessel registry of all high seas fishing vessels larger than 24 meters that are allowed to fish in the Convention area.[54] Based on this registry, the Commission publishes a list of longline tuna vessels operating illegally in their Agreement Area. Further, they support sharing information among Commissions of other international fisheries agreements to track vessels moving between oceans and to cooperate with investigations of activities of specific vessels.

Northwest Atlantic Fisheries Organization (NAFO). NAFO maintains a vessel registry for fishing, processing, and research vessels.[55] NAFO requires registration of research vessels with the Executive Secretary prior to the commencement of research; Parties register vessels flying their flag by providing the Executive Secretary with the same information required by CCAMLR and IATTC.[56]Fishing and processing vessels registered by a Contracting Party of more than 50 gross tons must notify the Executive Secretary prior to operating in the Regulatory Area.[57]Vessels temporarily flying the flag of a Contracting Party (bare boat charter) must notify the Executive Secretary of the same information as vessels permanently registered in a Contracting Party's State as well as additional information.[58]The Executive Secretary must provide all Contracting Parties with a list of all vessels that have provided notification for fishing.[59]

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[52] *Id.* at para. 1; ICCAT Recommendation 98-2 and ICCAT Recommendation 98-3, *supra* note 46.
[53] FIS Hot News, November 28, 2000.
[54] ICCAT Resolution 98-18 *Regarding the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas,* adopted at 9th Special Meeting of ICCAT November-December 1994.
[55] NAFO Conservation and Enforcement Measures, NAFO/FC Doc. 00/1, Serial No. N4204, Part III, Sections C and D.
[56] *Id.* at Part III, Sections C.1, C.2 and C.3. Parties must provide the owner's name and address, the vessel's type and name, the vessel's length, beam, draft, port of registration, registration number, radio call sign, a note indicating whether the vessel is a permanent or temporary research vessel, and purpose, area and plan of research for temporary research vessels.
[57] *Id.* at Part III, Section D.1(a)-(c) and D.2. Contracting Parties must notify the Executive Secretary of such vessels prior to January 1 of each year, or in a timely manner following departure of the vessel from its home port; or in the case of vessels temporarily flying the flag of a Contracting Party (bare boat charter), one month prior to the departure of the vessel from its home port. Notification must include the name of the vessel in both native and Latin alphabet, official numbers, home port and nationality, owner and charterer, certification that its master has been provided with the Commission's measures, and the principle target species it seeks.
[58] *Id.* at Part III, Section D.3. Notification must also include the date the vessel was authorized to fly its current flag, the date it was authorized to fish in the NAFO Area, the vessel's previous State of registration and the date that it ceased to fly the flag of that State.
[59] *Id.* at Part III, Section D.4.

In addition to the vessel registry/notification system, NAFO requires use of a hail system by fishing vessels in its Regulatory Area.[60] The hail system requires certain information to be transmitted upon each entry into the Regulatory Area,[61]each movement from one NAFO division to another,[62]when conducting trans-zonal fishery between certain divisions,[63]when exiting the Regulatory Area,[64]and when making transshipments in the Regulatory Area.[65] Because vessel registration and the hail system help identify vessels fishing consistently with NAFO's Conservation and Enforcement Measures, the two mechanisms complement NAFO's presumption that non-Party vessels fishing in the Regulatory Area undermine the effectiveness of NAFO.[66]

Fisheries Forum Agency (FFA). The FFA, designed to assist Parties in protecting their fishing rights in their own Exclusive Economic Zones (EEZs), also maintains a vessel registry. The Regional Register of Foreign Fishing Vessels (Regional Register) registers distant water fishing vessels and attempts to control those vessels in Members' EEZs.[67]Foreign fishing vessels must apply annually for registration to fish in the EEZs of Member countries.[68]Only those registered vessels in good standing can be licensed to fish in the EEZs of FFA Members.[69]

The FFA also prohibits a Member country from licensing a foreign fishing vessel unless that vessel is registered in the FFA's Vessel Monitoring System Register of Foreign Fishing Vessels (VMS Register).[70]Operators of foreign fishing vessels must apply annually to register, install, operate, and maintain in good working order a registered Automatic Location

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[60] *Id.* at Part III, Annex I.

[61] *Id.* at Part III, Annex I, Section 1.1. This report must be made at least six hours in advance of entry and must contain the vessel's name, call sign, external identification letters and numbers, the date, time and geographical position, the message code "ENTRY", the division into which it is about to enter, the total weight of fish by species on board, the master's name and the target species.

[62] *Id.* at Part III, Annex I, Section 1.2. This report must be made prior to entry into another division and must contain the vessel's name, call sign, external identification letters and numbers, the date, time and geographical position, the message code "MOVE", the division into which the vessel is about to enter, the master's name and the target species.

[63] *Id.* at Part III, Annex I, Section 1.3. This report must be made by vessels remaining within zones 10 miles either side of the line between divisions. They must report when first crossing the line and at intervals not exceeding 24 hours thereafter. They must report the vessel's name, call sign, external identification letters and numbers, the date, time and geographical position, the message code "ZONE", the master's name and the target species.

[64] *Id.* at Part III, Annex I, Section 1.4. This report must be made at least 6 hours in advance of the exit and must contain the vessel's name, call sign, external identification letters and numbers, the date, time and geographical position, the message code "EXIT", the NAFO division from which the vessel is about to leave, the catch in weight taken in the Regulatory Area by species and the master's name.

[65] *Id.* at Part III Annex I Section 1.5. This report must be made at least twenty-four hours in advance and must contain the vessel's name, call sign, external identification letters and numbers, the date, time and geographical position, the message code "TRANSFER", the total weight by species to be transshipped, and the master's name.

[66] NAFO, *Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO*, NAFO/GC Doc. 97/6, Serial No. N2950, paras. 5-11 [hereinafter *NAFO Non-Party Compliance,*].

[67] *FFA Minimum Terms and Conditions for Foreign Fishing Vessel Access*, *supra* note 17, at Section 11; Annex 4.

[68] *Id*. at Annex 4, Section 2.4.

[69] *Id.* at Annex 4, Section 3.1. Registration may be withdrawn or suspended if the vessel operator uses banned gear, fails to report entry or exist from zones, fails to report while in a zone, misreports catch, or improperly marks the vessel or its gear. *Id.* at Annex 4, Section 5.1.

[70] *Id*. at Section 11(a); Annex 4, Section 3.1.

Communicator onboard the vessel.[71]Failure to comply results in suspension or loss of license to fish in the EEZs of Member States.[72]

U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement). The Straddling and Migratory Fish Stocks Agreement requires States to collect vessel registry information that accurately assesses fishing power, fleet composition and catch and effort data.[73] Compilation and collection of this data must enable meaningful statistical analysis for resource conservation and management purposes.[74] Flag states must provide access to this record to interested States, unless the flag State's national laws prohibit disclosure.[75]Flag States must also establish requirements for vessel and gear identification markings,[76]recording and reporting of vessel position, catch and fishing effort.[77] Vessels that falsify or conceal their markings, identity or registration commit a serious offence.[78] The use of national registries as opposed to international registries reflects the Agreement's status as a framework convention that relies on more specific implementation through regional and other agreements.

Multilateral High-Level Conference: Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific (MHLC Convention). Under the MHLC Convention, which only recently opened for signature and is not yet in force, the MHLC Commission will maintain a list of fishing vessels authorized to fly a member's flag fish in the Convention Area beyond national jurisdiction.[79]The Commission will also be the depositary for specific information concerning registered vessels, virtually identical to that of the agreements already discussed,[80]based on information that Members must maintain and provide.[81]

Convention for the Conservation of Southern Bluefin Tuna (CCSBT). The Parties to the CCSBT, along with representatives from other conventions regulating international tuna fisheries, agreed in July 1999 that its Commission should identify licensing requirements for tuna fishing vessels and establish a registry of those vessels active in areas under its management. A vessel registry may help the Parties implement their obligation to exchange information

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[71] *Id.* at Section 11(b).
[72] *Id.* at Annex 4, Section 5.1.
[73] Straddling and Migratory Fish Stocks Agreement, at Annex I, Art. 4(1). States should collect vessel identification, flag, port of registry, type, specifications and fishing gear descriptions. Flag States must collect vessels' navigation and position fixing aids, communication equipment, international radio call sign and crew size information.
[74] Id. at Annex I, art. 1.1.
[75] *Id*. at art. 18(3)(c).
[76] *Id*. at art. 18(3)(d).
[77] *Id*. at art. 18(3)(e).
[78] *Id*. at art. 21(11)(f).
[79] MHLC Convention, at art. 23(2)(b).
[80] *Id.* at art. 24(5). Specifically, the Commission must be informed of the name, registration number, previous names and port of registry of the fishing vessel, the name and address of the owner, name and nationality of the master, previous flag, International Radio Call Sign (IRCS), vessel communication types and numbers, color photograph of vessel, where and when it was built, the type of vessel, normal crew compliment, type of fishing method used, length, moulded depth, beam, gross register tonnage, power of main engine, nature of authorization to fish granted by its flag State, and its carrying capacity, freezer type and fish hold capacity.
[81] *Id.* at art. 24(4).

regarding fishing by non-Parties[82] and the CCSBT's Commission obligation to identify those non-Contracting Parties whose vessels fish for Southern Bluefin Tuna in a manner that diminishes the effectiveness of the CCSBT.[83]

The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement). The FAO Compliance Agreement, which forms an integral part of the International Code of Conduct for Responsible Fishing,[84] requires each Party to maintain and submit to the FAO, a record of all fishing vessels entitled to fly its flag and authorized to fish on the high seas; each Party must also take necessary measures to ensure that all fishing vessels are entered in that record.[85] The FAO Code itself calls on flag States to maintain records of those vessels authorized to fly their flag, including details of the vessels, their ownership and authorization to fish.[86]

This vessel registry requirement is designed to deter re-flagging of vessels to avoid compliance with conservation and management schemes for high seas fisheries.[87] Each party must supply the FAO, which maintains the registry, with information about each vessel, including its name, when and where it was built, the types of fishing methods its uses, its carrying capacity, and the name and address of the registered owner and operator(s), among other things.[88] Parties must also exchange information concerning fishing vessels of non-Parties that undermine the effectiveness of international conservation and management measures.[89]

III. Vessel Monitoring Systems (VMSs)

A. Rationale for Vessel Monitoring Systems

Vessel Monitoring Systems (VMSs) harness the power of Global Positioning Systems (GPS) and satellite technology to track fishing vessels via satellite transmitters installed on each vessel.[90] With some VMSs, an Automatic Location Communicator (ALC) installed on a vessel

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[82] CCSBT, at art. 5(4).

[83] *CCSBT Concerning an Action Plan to Ensure Effectiveness of the Conservation Measures for Southern Bluefin Tuna*, Draft Resolution, para. b, (Nov. 29, 1999) CCSBT 6/Attachment L, available at <http://www.home.aone.net.au/ccsbt/CCSBT6(1)HTML/CCSBT(6)1AtchL.html> [hereinafter Action Plan]. Currently, such determinations of the Commission are made based on catch data, trade information and other information obtained at ports and the fishing ground. *Id.*

[84] FAO Conference Resolution 15/93, para. 3 *cited in* FAO Code of Conduct for Responsible Fisheries 1.1 available at <http://www.fao.org/fi/agreem/codecond/ficonde.asp>.

[85] FAO Compliance Agreement, art. IV.

[86] FAO Code of Conduct for Responsible Fisheries, at art. 8.2.1, available at: http://www.fao.org/fi/agreem/codecond/ficonde.asp.

[87] FAO Compliance Agreement, at Preamble.

[88] Id. at arts. VI.1, VI.2. This information must include the vessel's name, registration number, previous names, port of registry, previous flag, International Radio Call Sign, the name and address of its owners, where and when it was built, and the type of vessel and its length. *Id.* at art. VI.1. Parties "shall, to the extent practicable," provide FAO with the name and address of the operator of the vessel, the type of fishing methods it will use, its moulded depth, its beam, its gross register tonnage, and the power of its main engine. *Id.* at art. VI.2.

[89] *Id.* at art. VIII.3.

[90] South Pacific Forum Fisheries Agency, *What is the VMS?*, http://www.ffa.int/vms_html [hereinafter *FFA VMS Summary*].

sends a signal (via satellite) that transmits information regarding the vessel's location, speed, and heading to a monitoring headquarters where the data is automatically correlated with a GPS vessel position. An automated system issues an alert to the relevant parties if it identifies a vessel potentially involved in illegal fishing activities.

VMSs are rapidly becoming the norm for ensuring proper enforcement, monitoring, and data collection in international fisheries. The two most recent international fisheries agreements, the MHLC Convention and the Straddling Stocks Agreement, as well as CCAMLR, FFA, and NAFO, require vessels to use VMSs to report "real-time" data for enforcement and monitoring purposes. ICCAT has a pilot VMS program, CCSBT is exploring the use of VMS, and the FAO recommends that vessels use VMS. The European Union (EU) currently maintains the most extensive VMS program, monitoring all vessels in excess of 24 meters flagged under their jurisdiction.[91] The EU Regulation will require about 7,000 vessels to use VMSs, and EU countries are developing methods for sharing information between flag and coastal States about vessel movements.[92]

VMS are becoming standard fishing gear because they transmit information automatically for computer analysis at an international command center. VMSs thus allow for quick identification of potentially illegal fishing activity and rapid distribution of the surveillance data to enforcement officers.[93] By enhancing the responsiveness of enforcement vessels, the VMS process significantly reduces the time and costs associated with effective implementation of fisheries treaties. The power and effectiveness of VMSs can be seen in Chile, which launched a satellite control system in August 2000. In the first 30 days of operation, Chile monitored 1,467 vessels, compared with 1,410 for all of 1999. Chile found 11 vessels fishing illegally and brought legal actions against them.[94] Because VMSs are accurate and efficient, many governments view VMS as an indispensable tool for scientific data gathering and fisheries enforcement. Japan has stated that VMSs are a "necessary measure to ensure the transparency of [fisheries] research."[95]Australia and New Zealand have said that incidents of false position reports by vessels "particularly underline the need for… implementing measures such as properly functioning VMS and vessel registers."[96]

The inherently global nature of satellite technology makes VMSs a particularly good enforcement tool for international fisheries regimes. According to the United Nations Food and Agricultural Organization (FAO), by ensuring compliance with the world's fisheries agreements,

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[91] Commission Regulation (EC) No 1489/97 of 29 July 1997 laying down detailed rules for the application of Council Regulation (EEC) No 2847/93 as regards satellite-based vessel monitoring systems(4), as last amended by Regulation (EC) No 2445/1999(5), determines the specific data that Community fishing vessels covered by satellite-based vessel monitoring systems (VMS) are required to transmit.

[92] Philip Marshall, General Manager, Strategy and Planning, Australian Fisheries Management Authority (AFMA), *Electronic Monitoring*.

[93] *FFA VMS Summary*, *supra* note 90.

[94] *Satellite Control System Proves to Be Effective*, Sept. 12, 2000.

[95] *Report of the Resumed Fourth Annual Meeting of the Commission for the Conservation of Southern Bluefin Tuna,* Section 3, Consideration of an Experimental Fishing Program (Feb. 19-21 1998).

[96] *Id.*

VMSs significantly contribute to restoration of global fisheries.[97] The FAO has also stated that VMSs allow the efficient and inexpensive monitoring of industrial fishing fleets, because they provide immediate access to vessel location, details of its activities, and near real_time transmission of important catch to verify status of quotas and information necessary for fisheries management. According to the FAO, not only does VMS play an integral role in "an effective and well planned MCS program" to enhance fisheries management, but "it also leads to improved safety for vessels and crews and permits the real_time transfer of market information, which can give important revenue gains where alternative port delivery decision or catch can be made at sea."[98]

One concern regarding VMS relates to who receives the information. While some States want to retain national control over the deployment of VMSs in various fisheries agreements, many States do not see this as an acceptable solution. This is due to a lack of confidence in a flag state to accurately report on breaches detected by the VMS, or to fully disclose all relevant VMS position reports. Concerns with national control focus on the technical integrity and the accuracy of the Flag State VMS, because VMS equipment may not meet a required level of technical accuracy or tamper proof operation required by a fishing agreement.[99]

The widespread use of VMSs in other fisheries agreements underscores the failure to reach agreement on this issue in the IWC. While many IWC Members supported the use of real-time enforcement and reporting of infractions and vessel positions in 1993,[100]disagreements arose in 1995 over the need for real-time reporting, the proposed mandatory use of transponders, the type of vessel location and other data that might be reported, and the need for an IWC control center.[101] The Members agreed, however, that any monitoring system ultimately required would have to consist of technologies presently known such as satellite technology.[102] As with the debate over vessel monitoring, several Members have stressed the need to ensure confidentiality of such a monitoring scheme in order to protect fishing vessels.[103] However, proper encryption measures can be taken to ensure confidentiality of information depending on the concerns and requests of the Members.

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[97] *Report of the Technical Working Group On The Management Of Fishing Capacity*, U.N. FAO (1998), http://www.fao.org/fi/faocons/twg/r586/r586e.asp#MONI. (This working group was organized by Japan and the United States).

[98] FAO, *Essential Role of Monitoring, Control, and Surveillance in Fisheries Management*, Section 6, UNFAO Committee on Fisheries, 22nd Sess., COFI/97/Inf.6, at para. 6 (Mar. 17_20, 1997), COFI/97/Inf.6 http://www.fao.org/docrep/meeting/w3861e.htm

[99] Judith Swan, *The Role of National Fisheries Administrations and Regional Fisheries Bodies in Adopting and Implementing Measures to Combat IUU Fishing*, paper presented to the IUU Conference, Sydney, Australia, 15-19 May, 2000.

[100] *Chairman's Report of the Forty-Fifth Annual Meeting,* Section 9.1.2, REP. INTL. WHAL. COMMN 44, 1994 (May 10-14, 1993).

[101] *Chairman's Report of the Forty-Seventh Annual Meeting,* Section 12.1, REP. INTL. WHAL. COMMN 46, 1996 (May 29 – June 2, 1995).

[102] *Chairman's Report of the Forty-Eighth Annual Meeting,* Section 12.1, REP. INTL. WHAL. COMMN 47, 1997 (June 24-28, 1996).

[103] Chairman's Report of the Forty-Ninth Annual Meeting , Section 12.2.2, REP. INTL. WHAL. COMMN 48, 1998 (October 20-24, 1997).

B. VMS in International Fisheries Agreements

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). The CCAMLR Parties recognize that the required use of VMSs greatly enhances their capacity to monitor and enforce implementation of the treaty, including the collection of reliable catch and effort statistics.[104] As a result, the CCAMLR Commission now requires the fishing vessels of all Parties to use Automated Satellite-Linked Vessel Monitoring Systems.[105] In addition, several Conservation Measures passed as a part of the Commission's overall catch documentation scheme also repeat this requirement. Each Party must use VMSs to monitor all fishing vessels licensed to fish in the Convention area, except those participating only in the krill fishery,[106] and for which catch limits, fishing seasons, or areas restrictions have been set by Conservation Measures adopted by the Commission.[107] If a party cannot meet the March 1, 1999 deadline for the establishment of a VMS, it may notify the Commission but it must establish a VMS program no later than December 31, 2000.[108]

Pursuant to Conservation Measure 148/XVII, a Flag State must receive automatic transmission of information, including the fishing vessel identification, location, date, and time, every four hours.[109] Further, the VMS must, at a minimum, be:

- tamper proof;
- fully automatic and operational at all times regardless of environmental conditions;
- able to provide real time data;
- able to provide geographical position of the vessel with a position error of less than 500 meters and with a confidence interval of 99%;
- able to provide special messages when the vessel enters or leaves the convention area and when it moves between one CCAMLR area, subarea or division within the convention area[110]

In the case of VMS system failure, the master or owner of the fishing vessel must communicate at least once every 24 hours the information that would otherwise be sent by the VMS via telex, fax, phone, or radio to the Flag State, and take immediate steps to have the device repaired or replaced as soon as possible but no later than within two months.[111] If the vessel returns to port with a defective VMS, it will not be allowed to commence further fishing until the VMS is repaired or replaced.[112] The Contracting Party must notify the Executive Secretary of the Commission of any vessel with a non-functioning VMS and the date, time and

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[104] CCAMLR, at art. XX.2.
[105] *Automated Satellite-Linked Vessel Monitoring Systems (VMS),* CCAMLR Conservation Measure 148/XVII, art. 2(iv) (1998), *available at* http://www.ccamlr.org/English/e_pubs/e_measures/e_cm99_00/e_cm99_00page6.htm [hereinafter *CCAMLR VMS Conservation Measure*].
[106] *Id.* at art. 3.
[107] *Id.* at art. 1.
[108] *Id.* at art. 2.
[109] *Id.* at art. 4(i).
[110] *Id.* at art. 4(ii).
[111] *Id.* at art. 5.
[112] *Id.* at art. 5(ii).

location of the vessel when the VMS failed.[113] The Party shall also inform the Secretary at the time the VMS becomes operational again.[114]

Clearly the Contracting Parties consider VMS an important tool for enforcing CCAMLR's conservation measures, including those to combat IUU fishing for toothfish.[115] First, a Contracting Party may not issue a license to a vessel to fish in the convention area unless that vessel complies with CCAMLR's VMS rules.[116] Second, at least ten Conservation Measures from 1999 specifically require the use of VMSs in various fisheries regulated by CCAMLR,[117] and the Parties are considering applying VMS to krill fisheries.[118]In addition, Norway, which like Japan is a party to CCAMLR, has already implemented a VMS system in compliance with this treaty.[119]Norway and others have also expressed support for extending CCAMLR's VMS requirements to krill fisheries.[120]

International Convention for the Conservation of Atlantic Tuna (ICCAT). ICCAT has adopted a Resolution and a Recommendation to encourage the use of VMSs and to initiate a

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[113] *Id.* at art. 6.
[114]Id. art. 6.
[115] CCAMLR, *Explanatory Memorandum on the Introduction Catch Documentation Scheme (CDS) for Toothfish (Dissostichus spp.)* and *Attachment A: Conservation Measures and Other Regulations, Relevant to Toothfish Fisheries in the Convention Area* (1999), available at http://www.ccamlr.org/English/e_cds_1999/e_cds_page5.htm.
[116] CCAMLR Conservation Measure 119/XVII, *Licensing and Inspection Obligations of Contracting Parties with regard to their Flag Vessels Operating in the Convention Area* (1998).
[117] Conservation Measure 176/XVIII, Fishery for *Dissostichus eleginoides* in Statistical Division 58.5.2 for the 1999/2000 Season, Section 6; Conservation Measure 177/XVIII, Fishery for *Champsocephalus gunnari* in Statistical Division 58.5.2 in the 1999/2000 Season, Section 9; Conservation Measure 184/XVIII, Exploratory Longline Fishery for *Dissostichus* spp. in Statistical Subarea 48.6 in the 1999/2000 Season, Section 5; Conservation Measure 185/XVIII, Exploratory Trawl Fishery for *Dissostichus* spp. in Statistical Divisions 58.4.1 and 58.4.3 (BANZARE and Elan Banks) in the 1999/2000 Season, Section 7; Conservation Measure 186/XVIII, New Trawl Fishery for *Chaenodraco wilsoni, Lepidonotothen kempi, Trematomus eulepidotus, Pleuragramma antarcticum* and Exploratory Trawl Fishery for *Dissostichus* spp. in Statistical Division 58.4.2 in the 1999/2000 Season, Section 9; Conservation Measure 187/XVIII, Exploratory Longline Fishery for *Dissostichus* spp. in Statistical Division 58.4.3 outside Areas under National Jurisdictions in the 1999/2000 Season, Section 6; Conservation Measure 188/XVIII, Exploratory Longline Fishery for *Dissostichus eleginoides* in Statistical Division 58.4.4 in the 1999/2000 Season, Section 5; Conservation Measure 189/XVIII, Exploratory Longline Fishery for *Dissostichus eleginoides* in Statistical Subarea 58.6 in the 1999/2000 Season, Section 5; Conservation Measure 190/XVIII, Exploratory Longline Fishery for *Dissostichus* spp. in Statistical Subarea 88.1 in the 1999/2000 Season, Section 7; Conservation Measure 191/XVIII, Exploratory Longline Fishery for *Dissostichus* spp. in Statistical Subarea 88.2 in the 1999/2000 Season, Section 5, *in Conservation Measures Adopted at CCAMLR XVIII*, annex 6, CCAMLR (1999) at: http://www.ccamlr.org/English/e_pubs/e_cc_reports/e_cc_reports_online/e_cc_1999_online/e_cc99_rpt_annex6.htm
[118] *Conservation Measures Adopted at CCAMLR XVIII*, *supra* note 117, at Sections 8.7-8.8, available at http://www.ccamlr.org/English/e_pubs/e_cc_reports/e_cc_reports_online/e_cc_1999_online/e_cc99_rpt_item8.htm.
[119] *Report of the Standing Committee on Observation and Inspection (SCOI),* Section 2.15, CCAMLR XVIII Annex 5 (1999), http://www.ccamlr.org/English/e_pubs/e_cc_reports/e_cc_reports_online/e_cc_1999_online/e_cc99_rpt_annex5.htm.
[120] *Conservation Measures Adopted at CCAMLR XVIII*, *supra* note 117, at Section 3.15. ("Argentina, Australia, New Zealand and Norway agreed that there was no reason for the exemption of VMS on krill vessels especially since it was possible that krill vessels could switch gear for fishing for other species and also be engaged in transhipment of other target species, e.g. *Dissostichus* spp. New Zealand urged all Members whose vessels operate in the krill fishery to consider implementing VMS in the very near future.")

pilot VMS program.[121] According to the 1997 Recommendation, Parties with vessels greater that 24 meters in length fishing for ICCAT species outside the jurisdiction of any coastal state "shall adopt a pilot program for a satellite-based vessel-monitoring system (VMS) for ten percent of such vessels, or ten vessels, whichever is greater" (although vessels that spend fewer than 24 hours at sea are exempted).[122]

The VMS must collect the vessel's identification and location as well as the date and time. As with other VMSs, the system must be tamper-proof, fully automatic and operational at all times regardless of environmental conditions, provide real time data, and provide a position accuracy of 500 meters or better. The Flag State determines the format of data and submits annual reports to the ICCAT Commission annual report on the implementation of its pilot program. The Commission will establish procedures for submitting information, sharing data, and ensuring confidentiality by its 2000 meeting and evaluate the program in 2002.[123]

As under the CCSBT, Japan is taking the lead in using VMSs. According to Japan's 1999 National Report submitted to the ICCAT Compliance Committee, it has already established a VMS pilot program for most of its longline vessels.[124]

Northwest Atlantic Fisheries Organization (NAFO). Under the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, NAFO must ensure the conservation of fish stocks by "providing surveillance and inspection of international fisheries… under an international scheme of joint enforcement."[125] NAFO may also "adopt proposals for international measures of control and enforcement within the Regulatory Area for the purpose of ensuring within that Area the application of this Convention and the measures in force thereunder."[126]

Recognizing the value of satellite monitoring to accomplish these goals, NAFO adopted a conservation measure to "require all vessels fishing in the Regulatory Area to be equipped with satellite tracking devices as soon as possible and not later than January 1, 2001."[127] The on-board observer has responsibility for monitoring the functioning of and reporting any interference with the satellite system on board the fishing vessel.[128]

NAFO's VMS program requires all vessels fishing in the Regulatory Area to be equipped with an autonomous system able to automatically transmit satellite signals to a land-based receiving station which permits continuous tracking of the position of the vessel by the Contracting Party. Contracting Parties must install at least one receiving station associated with

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[121] *ICCAT Resolution 95-3 on Vessel Monitoring,* adopted December 21, 1995; *ICCAT Recommendation 97-12 Concerning a Vessel Monitoring System Pilot Program*, entered into force June 13, 1998, available at http://www.iccat.es/ [hereinafter *ICCAT VMS Recommendation*].
[122] *ICCAT VMS Recommendation*, *supra* note 121, at Section 1.
[123] *Id.*
[124] *ICCAT Compliance Committee Report,* annex 8, app. 4 (1999), http://www.iccat.es/.
[125] NAFO Convention, art. XI(4).
[126] *Id.* at art. XI(5).
[127] *NAFO Conservation and Enforcement Measures, supra* note 55, at Part VI.
[128] *Id.* at Part VI, Section A.4.

their satellite tracking system. The Contracting Parties must transmit messages of movement between NAFO divisions on a real time basis to NAFO's Executive Secretary. The Executive Secretary then transmits the information to Contracting Parties with an inspection vessel or aircraft in the Convention Area. Parties must cooperate with other parties that have inspection vessels in the area to exchange real time information on the geographical distribution of fishing vessels and information related to identification of the vessel. Each party pays all costs associated with the satellite tracking system.

Forum Fisheries Agency (FFA). The FFA requires the use of VMSs on vessels of Members to provide appropriate information on catch and effort statistics relating to fishing in a member's waters or conducted by vessels under its jurisdiction,[129] as required by the South Pacific Forum Fisheries Agency Convention.[130] In October 1999, leaders from the region agreed that the FFA VMS program must be "fully implemented by FFA members within two years."[131] FFA Members may not license any vessel to fish unless the vessel is included in the FFA VMS register.[132]

Like CCAMLR, the FFA VMS program requires registration in the VMS Regional Register of Foreign Fishing Vessels. Inclusion in the register requires operators of foreign fishing vessels to apply annually to register, install, operate, and maintain in good working order an FFA approved Automatic Location Communicators (ALCs) onboard the vessel.[133] A vessel will have its license revoked or suspended for failure to comply.[134] The FFA VMS program is managed centrally from Honiara, Solomon Islands, with VMS data distributed to member countries as necessary for monitoring, control and surveillance purposes.

ALC equipment must be reliable and not prone to an unreasonable number of breakdowns from sea. It must be capable of continuously and automatically sending position reports without human intervention.[135] The format of data sent must be highly stable and cannot be changed without prior consent of the FFA.[136] Fishers are responsible for the purchase, installation, maintenance, and continual operation of the ALCs.[137] Fishers must notify the FFA

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[129] *FFA VMS Summary*, *supra* note 90; South Pacific Forum Fisheries Agency, *Vessel Monitoring System: Guidelines for Installation and Registration of Automatic Location Communicators,* version A1.8, (Feb. 18, 2000); South Pacific Forum Fisheries Agency, *The Type Approval Process and Responsibilities for Automatic Location Communicators*, (Jan. 29, 1999) [hereinafter *FFA ALC Approval*]; South Pacific Forum Fisheries Agency, *Guidelines for Installation and Registration of ALCS*, (Feb. 2, 1999).
[130] FFA Convention, at art. IX(a).
[131] 1999 Forum Communique, 30t South Pacific Forum, Section 52, SPFS(99)13 (Oct. 3-5, 1999), available at http://chacmool.sdnp.undp.org/pacific/forumsec/docs/fc99.htm.
[132] *FFA VMS Summary*, *supra* note 90.
[133] *FFA ALC Approval*, *supra* note 129, at 1.; *FFA Harmonised Minimum Terms and Conditions*, *supra* note 17, at Section II(b). *See also* South Pacific Fisheries Forum Agency, *FFA VMS: Certification Requirements of ALCs*, http://www.ffa.int.
[134] *FFA Harmonised Minimum Terms and Conditions*, *supra* note 17, at summary para. 13.
[135] *Id.* at Section 2.1.6 (A).
[136] *Id.*
[137] *Id.* at Section 2.2.2.

immediately if the ALC is removed or does not work properly.[138] If an ALC fails to transmit, the FFA may request the vessel to immediately proceed to a designated port for inspection.[139]

The FFA contracts with Forwarding Service Providers to provide earth station processing and forwarding services for the data obtained via the VMS system.[140] The FFA also works closely with the ALC manufacturers to ensure the correct equipment is provided and installed correctly.[141]

The FFA has very detailed ALC installation standards and requirements to ensure the VMS operates correctly and cannot be tampered with. For example, authorized agents of the manufacturer must install the ALC and the requirements of Immarsat (International Maritime Satellite Organization), various safety authorities, and the FFA must be observed.[142] The Appendix to this paper includes a long list of installation requirements, including placement of the transceiver, antennae, and power supply to ensure continuous transmission..[143]

U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement). Like the other most recent international fisheries agreement, the MHLC Convention, the Straddling and Migratory Fish Stocks Agreement specifically requires the use of VMSs. Article 5 requires Parties to "collect and share, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort…."[144]Article 18 requires flag States to impose requirements for recording and timely reporting of vessel position in accordance with subregional, regional and global standards for collection of such data. It also requires flag States to monitor, control and conduct surveillance of such vessels, their fishing operations and related activities by developing and implementing VMS, including as appropriate, satellite transmitter systems.[145]

VMSs will help ensure compliance by vessels flying a Party's flag by requiring such vessels to "give information to the investigating authority regarding vessel position, catches, fishing gear, fishing operations and related activities in the area of an alleged violation."[146] Parties must ensure proper training and assistance in the use of VMSs for purposes of "monitoring, control, surveillance, compliance and enforcement, including training and capacity-building at the local level, development and funding of national and regional observer programs and access to technology and equipment."[147]

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[138] *FFA ALC Approval*, *supra* note 129 at 3, Section 2.2.5.
[139] *Id.* at 3, Section 2.2.3.
[140] *Id.* at 3, Section 2.3.1.
[141] *Id.* at 4, Section 2.4.2.
[142] *Id.* at 5, Section 1 & Appendix. 1: *ALC Installation Standards and Requirements.* These guideline are more thoroughly set forth in South Pacific Fisheries Forum Agency, *Vessel Monitoring System: Guidelines for Installation and Registration of Automatic Location Communicators* (Feb. 18, 2000).
[143] *FFA ALC Approval*, *supra* note 129, at Sections 1-6.
[144] Straddling and Migratory Fish Stocks Convention, at art. 5(J).
[145] *Id.* at art. 18(3)-(4).
[146] *Id.* at art. 19(1)(c).
[147] *Id.* at art. 25(3)(c).

Multilateral High-Level Conference: Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention). The recently negotiated MHLC Convention embraces the future of international fisheries management by including explicit VMS requirements in its text. According to Article 10(1)(i), the MHLC Commission "shall … establish appropriate cooperative mechanisms for effective monitoring, control, surveillance and enforcement, including a vessel monitoring system."[148] The MCS program requires the use of VMS: each member of the Commission shall require its fishing vessels to use near real-time satellite position-fixing transmitters while in convention areas of the high seas and under the national jurisdiction of another member.[149]In addition, the Commission will receive the information directly from a vessel's VMS, information which the flag State may receive simultaneously if it chooses.[150]

The Commission will establish the standards, specifications and procedures for the use of transmitters and it will operate the VMS program for all vessels that fish for highly migratory fish stocks on the high seas in the Convention Area. Any member of the Commission may request that waters under its national jurisdiction be included within the area covered by such vessel monitoring system.[151] The Members of the Commission shall cooperate to ensure compatibility between national and high seas vessel monitoring systems.[152]

Convention for the Conservation of Southern Bluefin Tuna (CCSBT). The CCSBT does not require the use of VMSs, but it does require the establishment of "systems to monitor all fishing activities related to southern bluefin tuna in order to enhance scientific knowledge… and… to achieve effective implementation of this Convention."[153] The CCSBT Commission recognizes the value of VMSs and has asked the Compliance Committee to "[e]xamine ways of cooperating in the undertaking of surveillance including arrangements for the exchange of information of sightings and other information and about activities of vessels."[154]Japan clearly views VMSs as important in the Southern Bluefin Tuna fishery, as it has voluntarily implemented a VMS program for its "scientific fishing" program, and called VMSs a "necessary measure to ensure the transparency of the research."[155] Also, Australia and New Zealand support the use of VMSs to prevent false position reports by vessels, stating that such incidents "particularly underline the need for… implementing measures such as properly functioning VMS and vessel registers."[156]

U.N. Food and Agriculture Organization (FAO). The FAO recommends the use of VMSs as one method to verify data submitted by the Parties. The FAO *Technical Guidelines for*

[148] MHLC Convention, at art. 10(1)(i).
[149] *Id.* at art. 24(8)-(9).
[150] *Id.* at art. 24(8).
[151] *Id.* at art. 24(8).
[152] *Id.* at art. 24(10).
[153] CCSBT, at art. 9.
[154] *CCSBT Report,* at Section 5.
[155] *Report of the Resumed 4th Annual Meeting of the Commission for the Conservation of Southern Bluefin Tuna*, CCSBT, 4th Sess., Agenda Item 3: Consideration of an Experimental Fishing Program (Feb. 19-21, 1998).
[156] *Id.*

Responsible Fisheries state that the use of satellite transponders is particularly appropriate where distances between data sampling points are great such as with highly migratory or straddling fish stocks.[157]

The FAO has put much work and thought into VMSs, including the issuance of "good practices" for using maritime-mobile satellite services for safety, communication, and regular vessel position reporting.[158] The *Technical Guidelines* also encourage the use of remote sensing techniques, because they allow both national and international authorities to identify fishing vessels and verify their authorization to fish without the need for boarding the vessel.[159] In 1998 the FAO and Malaysia, in cooperation with Norway, organized a Southeast Asia regional meeting to examine technical measures involved in monitoring, control and surveillance (MCS), including commonly accepted procedures and recent experiences with VMSs.[160]

IV. Observation

A. Rationale for Observation

According to many fisheries management experts, compliance and accurate data collection are directly linked to the level of observer coverage on a fishing vessel.[161] Observers are able to collect detailed information on fishing operations, as well as monitor compliance and conservation measures. Observers collect comprehensive data that other vessel members do not have time to collect, including total catch and size composition by species, biological data, and incidental mortalities of non-target species. Independent observers guarantee transparency among all parties to a convention and ensure that all parties comply with convention measures in a non-discriminatory manner.

For these reasons, all of the fisheries agreements reviewed in this paper have adopted observer programs. Further, most of them rely to some extent on coordination or complete oversight by the agreement's Secretariat or Commission. Even then, however, Member states may be able to nominate or designate the observers. While a consensus observer program probably cannot be identified, one trend is clear: most agreement's are moving towards 100% observer coverage. For example, CCAMLR, IATTC, and NAFO all have fisheries under 100% observer coverage.

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[157] U.N. FAO, *Technical Guidelines for Responsible Fisheries Vol. 4: Fishing Management*, Sections 2.1.2, 2.1.4, at 28, 29 (1997) [hereinafter *FAO Fishing Guidelines*].
[158] U.N. FAO, *Technical Guidelines for Responsible Fisheries Vol. 1: Fishing Operations* at 7–9 (1997) [hereinafter *FAO Operations Guidelines*].
[159] *Id.* at 16.
[160] U.N. FAO, *Report of the Secretary General, Large-scale Pelagic Drift-net Fishing, Unauthorized Fishing in Zone of National jurisdiction and on the High Seas, Fisheries By-catch and Discards, and Other Developments*, Section III(B)(95) (Oct. 8, 1998), available at http://www.un.org/Depts/los/a53_473.htm.
[161] William A. Karp and Howard McElderry, *Catch Monitoring by Fisheries Observers in the United States and Canada, Alaska Fisheries Science Center*, in PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON INTEGRATED FISHERIES MONITORING, U.N. Food and Agriculture Organization, Rome (1999).

B. Observation and the IWC

At one time, the IWC led fisheries agreements in adopting onboard observation. In 1955, Japan and Norway protested the wholesale disregard of the whaling regulations by the Panamanian flagged factory whaling ship, the *Olympic Challenger*.[162] Unable to refute Panama's denial of any illegal activity,[163]and concerned with continued declines of whale populations due to high quotas and poor enforcement by some member states,[164]Norway made the first formal proposal for international observers to be appointed by the IWC on all factory ships in 1956.[165] The IWC's Technical Committee approved of Norway's proposal in principle, but the IWC did not adopt the proposal for procedural reasons.[166]

In 1962, however, the IWC adopted the International Observer Scheme (IOS). Under the IOS, the IWC would appoint observers, who reported to the IWC, not member states. Each member operating an Antarctic Pelagic Whaling expedition would nominate one observer for each of its foreign expeditions. From these nominations, the IWC would appoint one observer to every Antarctic whaling expedition apparently regardless of nationality. The IWC would inform the parties of the appointments made.[167] The IWC paid observers from funds provided by the nominating states. These funds also covered the Commission's administrative expenses, observer's travel and subsistence would be refunded by their nominating governments. The nominating state also paid for an interpreter.[168]

Masters and other officers of ships were required to provide all necessary information to the observer. Observers provided masters and other officers with reports of observed infractions, who could submit comments to the commission on the reports. Any infractions not due to excusable error would have to be presented to the master in writing as well as, if serious, being reported to the IWC secretariat.[169]

This IOS never entered into force, despite repeated oral support for it from all member states.[170] According to Norway, "with global quotas reduced to a minimum and correspondingly limited national quotas, there is a serious risk of infractions. Experience proves that restrictive rules necessitate closer surveillance and therefore control… ."[171] Nonetheless, the IWC then developed an observer scheme to cover all whaling operations (both pelagic whaling and land stations) with different variations for Antarctic Pelagic whaling, pelagic whaling in the North Pacific, land stations in the North Pacific, land stations in the Southern Hemisphere, and the North Atlantic.[172]The IWC IOS consisted of several bilateral or smaller multilateral

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[162] BIRNIE, *supra* note 19, at 230-231, citing 1955 Report of Tech. Comm. at 10.
[163] *Id.* at 233.
[164] *Id. citing* IWC 7th Report, 1956 page 5, para 14.
[165] *Seventh Report of the Commission, Addendum to the Agenda* 12, INTL. COMM. ON WHALING (1956).
[166] BIRNIE, *supra* note 19, at 233-237.
[167] *Id.* at 323.
[168] *Id.*
[169] *Id.*
[170] *Id.* at 350.
[171] *Id.* citing IWC/17/13, Verbatim Record, at 51.
[172] *Id.* at 350.

agreements.[173] The IWC supported the agreements through supervision and appointment of the observers, but the observer scheme was not fully under the auspices of the IWC.

In 1972 the new IOS was finally implemented and the first reports of the observers were submitted at the 1973 IWC meeting.[174] The Technical Committee declared the scheme a success and recommended the extension of any agreements that were due to expire. According to reports, the inspectors reports were fair, careful, and detailed and the scheme created a remarkable advance on any previous existing enforcement system [175]The international observers detailed many minor infractions that unnoticed previously, and they also strengthened compliance by uncovering and clarifying several misunderstandings by whaling crews of the Schedules requirements.[176] By 1974, the scheme was being implemented in all areas other than the Antarctic, and in 1980 parties recommended the creation of an Inuit observer scheme for the subsistence whaling in United States, Canada, and Denmark.[177] In 1983 Japan said it would welcome increased coverage of its operations by U.S. observers.[178]

An effective observation scheme remains a core requirement of the RMS. Japan and Norway argue that 100% coverage is unnecessary and that national inspectors can assume some of the duties of an international observers when a vessels small size prevents both from being on the same vessel. Other countries, such as Australia, New Zealand, the United Kingdom, and the United States, believe 100% coverage is necessary and that the cost should be borne by the whaling nation. Other areas of dispute concern the enforcement power of inspectors and observers, and the need for observers on landing stations.[179]

C. Observation Programs in International Fisheries Agreements

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). CCAMLR first implemented its Scheme of International Scientific Observation[180]for the 1992/93 fishing season.[181] In 1995, the Commission endorsed the Scientific Committee's recommendation that 100% coverage by observers should eventually become mandatory for all finfish fisheries in the Convention Area.[182] At CCAMLR-XVIII in 1999, the Commission implemented requirements for observers on fishing vessels in ten specific

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[173] The agreements included; Japan/USSR in the Antarctica; Australia./South Africa in the Southern Hemisphere; in the North Pacific: Japan/USSR for factory ships, USA for land stations; and in the North Atlantic: Canada/Iceland and Iceland/Norway.
[174] BIRNIE, *supra* note 19, at 440.
[175] *Id.* at 442
[176] *Id.* at 454. For example, in 1981 observers reported illegal cold grenade harpoons used in Japanese Bryde's whale fisheries. The IWC commended Japan for taking swift action and imposing substantial penalties for these violations.
[177] *Report of the Thirty-second Int'l Whal. Commn (1980)*, Appendix 13, page 33 (1981).
[178] *Report of the Thirty-fifth Int'l Whal. Commn (1983)*, Section 11.4, page 15 (1984).
[179] *See Report of the Forty-seventh Int'l Whal. Commn (1995)*, Section 12.1, pagea 25-26 (1996).
[180] CCAMLR Scheme of International Scientific Observation, adopted at CCAMLR-XI (para. 6.11) and amended at CCAMLR-XVI (para. 8.21) [hereinafter CCAMLR Observer Scheme].
[181] "Understanding CCAMLR's Approach to Management," CCAMLR website, http://www.ccamlr.org.
[182] *Id.*

fishery areas,[183]including mandatory 100% observer coverage on longline vessels fishing for Patagonian toothfish in the Convention Area.[184]

The observer must "observe and report on the operation of fishing activities in the Convention Area with the objectives and principles of [the Convention] in mind."[185]As with the AIDCP, the observer records details of the vessel's operation, takes samples of catches to determine biological characteristics, recording biological data by species caught, recording by-catches, and recording entanglement and incidental mortality of birds and mammals.[186]

Under the Scheme, observers are designated by Member countries and serve on the boats of other countries. The "Designating Member" and the "Receiving Member" establish bilateral arrangements for observations.[187]However, countries must designate observers who are nationals of the designating country, adequately trained, familiar with the harvesting and scientific research activities to be observed and the provisions and conservation measures of the Convention.[188] Observers must be able to communicate in the language of the vessel's Flag State.[189] Members receiving observers must give them the status of ship's officers[190]and ensure that their vessel operators cooperate fully with the observer.[191]

In 1999, the Scientific Committee recommended that, whenever possible, two scientific observers should be deployed on longline fishing vessels – one expert in fish work, the other an expert with seabirds. In addition, the Committee advised that "the data collection responsibilities of each observer should be clearly defined prior to the cruise, preferably in bilateral agreements."[192]

The Designating Member pays the equipment, clothing and salary and any related allowances of a scientific observer unless otherwise agreed. The vessel of the Receiving Member pays for the cost of on board accommodation and meals of the scientific observer.[193]

CCAMLR and its Members understand the value of comprehensive observer coverage. At its 18th meeting, the Scientific Committee "noted the value of factual sightings by scientific observers engaged in IUU [illegal, unreported and unregulated] fishing," a task endorsed by the

[183] CCAMLR Conservation Measure 176/XVIII, para. 5; CCAMLR Conservation Measure 177/XVIII, para. 8, CCAMLR Conservation Measure 179/XVIII, para. 3; CCAMLR Conservation Measure 180/XVIII, para. 4; CCAMLR Conservation Measure 181/XVIII, para. 5; CCAMLR Conservation Measure 182/XVIII, para. 7; CCAMLR Conservation Measure 183/XVIII, para. 4, CCAMLR Conservation Measure 185/XVIII, para. 6, CCAMLR Conservation Measure 186/XVIII, para. 8; CCAMLR Conservation Measure 190/XVIII; para. 6.
[184] Conservation Measure 176/XVIII at para. 5.
[185] CCAMLR Observer Scheme, at Annex I, para. 1.
[186] *Id.* at Annex I, para. 2.
[187] *Id.* at Section B.
[188] *Id*. at Section A, paras. (b)-(c).
[189] *Id.* at Section A, para. (d).
[190] *Id.* at Section B, para. (a).
[191] *Id*. at Section B, para. (b).
[192] Report of the 18th Meeting of the Commission, CCAMLR-XVIII, para. 8.18 (1999); Report of the 18th Meeting of the Scientific Committee, SC-CCAMLR-XVIII, "CCAMLR Scheme of International Scientific Observation, para. 3.21 (1999).
[193] *Id.* at Section B, para. (i).

Commission.[194] Japan has been a supporter of the observer program. It places national observers abord Japanese krill trawlers and reports the data collected. In addition, Japan participated in the CCAMLR 2000 Krill Synoptic Survey of Area 48 in January 2000, placing observers on its research vessel, the *RV Kaiyo Maru*. Three other research vessels participated, one each from Russia, the United States, and the United Kingdom.[195]

Agreement on International Dolphin Conservation Program (AIDCP)/Inter-American Tropical Tuna Convention (IATTC). The AIDCP requires the vessels of all Parties with a carrying capacity greater than 363 metric tons operating in the Agreement Area to carry an observer on each fishing trip.[196]The AIDCP has had 100% observer coverage for these fishing vessels since 1994,[197]currently has 100% observer coverage in the Agreement's Eastern Pacific Ocean (EPO) tuna fishery, and has 130 active observers.[198] To ensure complete transparency in estimating dolphin populations in the Eastern Pacific Ocean, the Commission further requested that scientific observers of IATTC member countries take part on all research vessels estimating dolphin populations in the EPO.[199] The AIDCP uses observers from the IATTC Commission (Commission) and at least 50% of observers on each party's vessels must be IATTC observers.[200] The observer program is paid by IATTC members, who pay 30%, and the operators of the vessels, who pay 70%.

Parties may maintain their own national observer programs, (and Mexico, Venezuela and Ecuador do so), provided they collect and report information in the same manner as IATTC observers. All observers, however, must have completed the technical training required by the guidelines that the Parties establish; be capable of performing all of the enumerated observer duties; and be a national of one of the Parties or a member of the scientific staff of the IATTC.[201]

Observers must "gather all pertinent information on the fishing operations of the vessel,"[202]including incidental mortality of dolphins, vessel fishing effort, sightings of marine mammal herds and sea turtles, set information on tuna schools, bycatch, and information on possible infractions of the AIDCP, among other things.[203] The observer ultimately must complete more than ten forms with the information and data collected[204]and submit the data to the AIDCP's International Review Panel (IRP).[205]

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[194] *Id.* at para. 3.22.
[195] CCAMLR 2000 Krill Synoptic Survey webpage, http://www.nerc-bas.ac.uk/public/mlsd/synoptic/index.htm.
[196] AIDCP, at Annex 2, para. 1.
[197] Personal Communication with David Bratten, IATTC Senior Scientist (Nov. 17, 2000). The observer coverage has been exactly: in 1994, 99.8%; from 1995 through 1998, 100%, and in 1999, 99.9%. *Id.*
[198] *Id.*
[199] IATTC Resolution on Dolphin Abundance Studies in the Eastern Pacific Ocean, June 2000.
[200] AIDCP, at Annex 2, paras. 1, 2.
[201] AIDCP, at Annex 2, para. 3.
[202] IATTC, at Annex 2, para. 4
[203] The IATTC's Tuna-Dolphin Observer Program, FFA/SPC Observer Workshop, 21-23 February 1995, Brisbane, Australia (1995) at 2.
[204] Personal Communication with Ernesto Altamirano, IATTC (Nov. 20, 2000).
[205] The IATTC's Tuna-Dolphin Observer Program, *supra* note 200, at 3.

So that observers can obtain the necessary data, observers must be allowed access to vessel personnel and to equipment such as satellite navigation equipment, radar display viewing screens when in use, high-powered binoculars including during the chase and encirclement of dolphins to facilitate identification, except when in use by vessel personnel, and electronic means of communication.[206] Observers also have access to the vessel working deck during net and fish retrieval and to any specimen, alive or dead, brought aboard the vessel during a set to collect biological samples.[207]Observers must be provided lodging, food, and all other accommodations equal to the crew's.[208] They must be given space for both observer duties and clerical work, and "[t]he Parties shall ensure that captains, crew, and vessel owners do not obstruct, intimidate, interfere with, influence, bribe, or attempt to bribe an observer in the performance of his or her duties."[209]

The IATTC maintains strict safeguards to ensure that observers record and report accurate data. Observers must make their data entries directly onto their forms and must obtain almost all of the data from their own direct observations and not rely on information provided by the vessel's crew.[210] Observers must maintain several marine mammal herd-size estimations from crew when sightings are made, and must record marine mammal sightings made by the vessel helicopter. Observers may not participate in the rescue of captured dolphins during fishing operations, so as not to bias mortality data.[211]

The IATTC maintains certain statistics on all current and former observers and check for potential "observer-introduced" biases.[212] The IATTC attempts not to assign observers repeatedly to a single vessel or fishing captain. Many countries require that observers placed on their vessels be nationals, and this is achieved where possible.

Observers do not directly enforce any international or national regulations. They must, however, inform the fishing captain when the vessel's dolphin mortality limit (DML) has been reached and when fishing by that vessel for yellowfin tuna in association with dolphins should cease. Observers make data available to the vessel captains in the observers' presence, and both IATTC and IRP forms provide spaces for the fishing captains to record any comments or opinions.[213]

After finishing a trip, IATTC observers return to the IATTC field office for a four to five day debriefing, including assessments of data for errors and omissions and completion of expense reports and various trip summary forms.[214] IATTC staff prepares a list of those errors and complete a preliminary evaluation of the observer's performance. If an observer's data is

[206] AIDCP, at Annex 2, para. 6(b).
[207] *Id.* at Annex 2, para. 6(c).
[208] *Id.* at Annex 2, para. 6(d).
[209] *Id.* at Annex 2, para. 6(f).
[210] *Id.* at 7.
[211] *Id.*
[212] *Id.*
[213] *Id.*
[214] *Id.* at 8.

evaluated at or above a certain grade, the observer will later receive a bonus of several dollars per sea day (amount varies with country).[215]

To apply to be an IATTC observer, one must have completed a bachelor's degree in the life sciences, or be in the last semester of study. IATTC observers undergo a two-and-a-half week training program. In the program they learn to identify tunas, marine mammals, sea turtles, and seabirds, the requirements and procedures for data collection, methods for estimating the size of marine mammal herds, fishing gear and operations, and shipboard protocol and safety.[216]

There are several other safeguards which assure data accuracy. Observers must send weekly dolphin mortality reports via radio or fax so that cumulative dolphin mortality by vessel can be monitored by the IATTC.[217] Whenever possible, the observer, fishing captain, and IATTC staff member (when available) hold an informal meeting prior to departure in the port of departure to discuss the observer's duties and responsibilities and any vessel regulations.

Another distinctive and important aspect of IATTC training is the workshop it provides to fishermen and vessel owners/managers, the Dolphin Mortality Reduction Workshop. Article V of the AIDCP calls for the establishment of both technical training and certification of fishing captains.[218] The IATTC staff conduct the workshops, in English or Spanish, several times a year in various locations where participants learn about factors that affect dolphin mortality, the performance of their national fleet, and the ecological effects of purse-seine fishing for tunas.[219]The IATTC also provides inspection of a vessel's dolphin safety gear through, among other methods, an at-sea simulation of the procedure for releasing captured dolphins.[220]

While the direct effects of these measures are difficult to measure, it bears noting that dolphin mortality incident to tuna purse-seine operations in the EPO dropped from approximately 133,000 dolphins in 1986 to near 3,600 in 1993 – a 97% reduction – while fishing efforts for dolphin-associated tunas remained relatively stable in the same period.[221]

International Convention for the Conservation of Atlantic Tunas (ICCAT). ICCAT has required countries to carry out "comprehensive" observer programs since 1996 for countries that fish in equatorial surface fisheries and catch substantial amounts of bigeye tuna under 3.2 kg.[222] The ICCAT Commission has also recommended a national observer program for longliners, purse seiners and baitboats, due to a lack of scientific data on the effects of Fish Aggregation Devices (FADs) on tropical tunas. The Commission has also recommended that observers be placed on 25% of vessels fishing with FADs, primarily in order to determine where and when juvenile tunas are most associated with FADs. It further recommended observers for

[215] *Id.* at 5.
[216] *Id.* at 4.
[217] *Id.* at 7.
[218] AIDCP, at art. V, Section 1 para. b.
[219] The IATTC's Tuna-Dolphin Observer Program, *supra* note 200.
[220] The IATTC's Tuna-Dolphin Observer Program, *supra* note 200 at 9.
[221] *Id.* at 9.
[222] ICCAT Resolution 95-8, *Resolution on Bigeye Tuna*, para. 2, adopted at the 14th Regular Meeting, November 1995.

5% of vessels fishing with other methods to obtain data on the composition of fish catches,[223]and observers to effectuate a recommendation to close fishing over floating objects."[224]

ICCAT uses observers to gather accurate information on bycatch, the magnitude of discards, as well as to determine the catch of undersized fish resulting from the use of FADs;[225]and in baitboat fleet operations.[226] Because of the technical nature of the duties, observers should possess sufficient experience to identify species and gear, navigational skills, a satisfactory knowledge of ICCAT conservation measures, and the ability to carry out elementary scientific tasks such as collecting samples and observing and recording accurately. The observer must also have a "satisfactory knowledge" of the language of the flag of the vessel observed.[227]

Northwest Atlantic Fisheries Organization (NAFO). As of January 1, 2001, NAFO requires 100% percent observer coverage for all Party vessels fishing in the treaty's Regulatory Area.[228] The observer requirement makes permanent a pilot observer program begun in 1995, and is one of several efforts to improve and maintain compliance with the treaty's Conservation and Enforcement measures.

Observers monitor compliance with Conservation and Enforcement Measures and record and report on a vessel's fishing activities and location while fishing. Observers observe and estimate catches to identify catch composition and they monitor discards, by-catches and the taking of undersized fish.[229]They also record the gear type, mesh size and attachments employed by the master and verify entries made to the vessel's logbooks.[230]

In addition, observers must collect catch and effort data on a set-by-set basis, including location (latitude/longitude), depth, time of net on the bottom, catch composition and discards; in particular the observer shall collect data of discards and retained undersized fish as outlined in the protocol developed by the Scientific Council.[231] Observers must also carry out scientific work as requested by the NAFO's Fisheries Commission based on the advice of the Scientific Council.[232] Observers also monitor the functioning of the satellite system and must report any interference with it.[233] If an observer identifies an apparent infringement of the Conservation and Enforcement Measures, the observer must report it to a NAFO inspection vessel within twenty-

[223] ICCAT Recommendation 96-1, *Resolution on Bigeye Tunas and Yellowfin Tunas*, adopted at the 10th Special Meeting of the ICCAT Commission, November, 1996, entered into force August 4, 1997.
[224] ICCAT Resolution 99-1, "Recommendation by ICCAT on the Establishment of a Closed Area/Season for the Use of Fish-Aggregation Devices," adopted at the 15th Regular Meeting of the ICCAT Commission, 1999.
[225] ICCAT Resolution 95-8, *supra* note 222, at para. 2(a).
[226] *Id.* at para. 2(b).
[227] *Id.* at para. 8.
[228] *NAFO Conservation and Enforcement Measures*, *supra* note 55, at Part VI, chapeau.
[229] *Id.* at Section A.3.a.ii.
[230] *Id.* at Sections A.3.a.iii, A.3.a.iv.
[231] *Id.* at Section A.3.b.
[232] *Id.* at Section A.3.c.
[233] *Id.* at Section.A.4.

four hours.[234] Observers must file a report to the Contracting Party and the Executive Secretariat within 30 days of the completion of an assignment.[235]

To ensure that the observer can conduct his/her work, the Contracting Parties must "take all necessary measures to ensure that observers are able to carry out their duties." Vessel masters must provide observers suitable lodging and food,[236]and the Party that sends the observer pays the observer's salary.[237]

Forum Fisheries Agency (FFA). The FFA has developed a regional observer program for the South Pacific to collect data and to ensure foreign fishing vessel comply with conservation and fishing measures.[238]As far back as 1982, with the adoption of the Nauru Agreement concerning Cooperation in the Management of Fisheries of Common Interest, the FFA has contemplated a cooperative observer program.[239] More recently, it has undertaken a comprehensive observer training program and is discussing the development of a curriculum for observer training courses with the Solomon Islands College of Higher Education.[240]

In addition, the FFA played an instrumental role in concluding an agreement between the United States and 16 FFA members that requires vessel operators to carry FFA observers on board their vessels as part of monitoring compliance and scientific data collection.[241] As with other observer programs, the observer must have full access to and the use of facilities and equipment on board the vessel which the observer determines is necessary to carry out his or her duties, as well as full access to the bridge, fish on board and areas which may be used to hold and fish catch and to the vessel's records.[242] The U.S. Tuna Fishing Industry is responsible for meeting all costs of the observer placement program and training.[243]

U.N. Straddling and Migratory Fish Stocks Agreement. Under the Straddling and Migratory Fish Stocks Agreement, flag States must establish measures for "monitoring, control and surveillance of [the flag State's] vessels, their fishing operations and related activities" through, among other things, national, subregional, and regional observer programs. Flag States must also permit access by observers from other States to carry out the functions agreed under the observer programs.[244] In addition, all states or their regional fisheries management organizations should establish mechanisms for verifying fishery data such as "scientific observer programs to monitor catch, effort, catch composition (target and non-target) and other details of

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[234] *Id.* at Section A.5.
[235] *Id.* at Section A.3.d.
[236] *Id.* at Section A.7.
[237] *Id.* at Section A.6.
[238] FFA web page, "Monitoring, Control and Surveillance," available at http://www.bscene.com.au/ffa.
[239] Nauru Agreement concerning Cooperation in the Management of Fisheries of Common Interest, art. II(b)(ii), available at http://www.oceanlaw.net/frames.htm.
[240] *Id.*
[241] Treaty on Fisheries Between the Government of Certain Pacific Island States and the Government of the United States of America, Apr. 2, 1987, T.I.A.S. 11100; 1987 U.S.T. LEXIS 23, at Annex I, Part 6, art. 18(a).
[242] *Id.* at Annex I, Part 6, art. 18.
[243] *Id.* at Annex I, Part 6, art. 19; FFA web page, "U.S. Treaty," available at http://www.bscene.com.au/ffa.
[244] Straddling and Migratory Fish Stocks Agreement, at art. 18(g)(ii).

fishing operations."[245]The provisions for financial assistance underscore the importance of data collection and observer programs by stating that financial assistance to developing States "should focus on enhancing capacity to implement data collection and verification, observer programs, data analysis and research projects supporting stock assessments."[246]

Multilateral High-Level Conference: Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention). Under the MHLC Convention, the Commission must develop and coordinate a regional observer program to collect verified catch data, other scientific data and additional information related to the fishery.[247] Coordinated by the Commission, the observer program must consist of "independent and impartial" observers authorized by the Commission.[248] Each member of the Commission must allow observers from the MHLC observer program on their fishing vessels within the Convention Area, unless the vessel operates exclusively within waters under the national jurisdiction of the flag State.[249]

The MHLC Convention requires a "sufficient level" of observer coverage to ensure that the Commission receives appropriate data and information on catch levels and related matters within the Convention Area.[250]Observers, trained and certified according to procedures to be developed by the Commission,[251]will monitor the implementation of the convention's conservation and management measures and report their findings.[252] So that the observer can conduct his/her duties, the vessel's operator and crew must grant observers full access to and use of all facilities and equipment on board and allow and assist the observers to remove samples.[253]

All Commission members are entitled to have their nationals included as observers.[254]The Members of the Commission will agree on costs for the observer program and include them in the budget,[255]although the operator of the vessel pays all costs of food and accommodation at "no expense to the observer or observer's government."[256]

Convention for the Conservation of Southern Bluefin Tuna (CCSBT). CCSBT members control and manage their own national observer programs. Members have recently proposed to the Commission a long-term scientific research program which would include a broad-based observer program.[257]

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[245] *Id.* at Annex I, art. 6 (b).
[246] *Id.* at Annex I, art. 1(2).
[247] MHLC Convention, at art. 28(1).
[248] *Id.* at art. 28(2)-(3).
[249] *Id.* at arts. 28(3)-(4).
[250] *Id.* at art. 28(6)(a).
[251] *Id.* at arts. 28(6)(c), (e).
[252] *Id.* at art. 28(6)(e).
[253] *Id.* at Annex III(3)(1).
[254] *Id.* at art. 28(6)(b).
[255] *Id.* at art. 28(6).
[256] *Id.* at Annex III(3)(3).
[257] Personal Communication with Campbell McGregor, CCSBT Executive Secretary (Oct. 3, 2000).

U.N. Food and Agricultural Organization Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement). The FAO Compliance Agreement does not operate its own observer scheme. FAO's Guidelines for responsible fisheries, however, recommend the use of observers for acquiring accurate and complete data for employing the precautionary approach.[258]

V. Catch Documentation

A. Rationale for Catch Documentation

The international agreements surveyed are all designed to preserve marine life in sustainable, species-specific quantities for the use and enjoyment of all interested parties, including future generations. To ensure that catches are in fact sustainable, the agreements have all developed methods to track catches in specified waters and acknowledge that conservation and management goals could would not met without some system of documentation, and a correlative system of inspection of that documentation. As with other MCS mechanisms, catch documentation is most effective when accomplished in conjunction with other MCS mechanisms, such as VMS. As explained below with CCAMLR, the vessel captain must complete catch documents and transmit them electronically to the flag State. The importing CCAMLR party must ensure that all imports of toothfish are accompanied by a catch document, regardless of whether the toothfish was caught inside or outside the CCAMLR Convention Area. This strategy provides immediate documentation of the catch to ensure quotas are not exceeded. As commentators have said, "It is of utmost importance . . . that the staff have intimate knowledge of . . . [fishery activities] and an extensive and sophisticated system for collecting and processing the data."[259]

Again, the detail of the mechanisms of other fisheries agreements highlights the lack of effective catch documentation in the IWC. Although whale marking presents one of the oldest forms of catch documentation practiced by the IWC,[260]and Article VII of the ICRW requires the parties to report data on all whale catches to the Bureau of International Whaling Statistics, accurate and timely reporting has always been a problem. In fact, because some vessels were failing to submit data, the IWC passed a 1980 resolution urging governments to prohibit whaling operations by vessels that fail to supply required catch documentation data.[261]

The possibility of using DNA testing to verify the legality of the whale harvest was first investigated by the Commission in 1995 when the results of a feasibility study were released at the Infractions Sub-committee meeting.[262] Although the preliminary results of this study did not

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[258] "FAO Precautionary Approach to Capture Fisheries and Species Introductions," FAO Technical Guidelines for Responsible Fisheries 2, June 1995, Part 4.2 at para. 56, available at http://www.fao.org; *see also FAO Fishing Guidelines*, *supra* note 157, at 2.3.2.iii.

[259] CLIFFORD L. PETERSON AND WILLIAM H. BAYLIFF, IATTC SPECIAL REPORT NO. 5: ORGANIZATION, FUNCTIONS, AND ACHIEVEMENTS OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION 12 (1985).

[260] BIRNIE, *supra* note , at 220, citing Report of the 4th Meeting of the IWC, at page 7, para 23.

[261] REPORT OF THE INT. WHAL. COMMN., 31ST MEETING (1980), at Appendix 12, page 33 (1981).

[262] REPORT OF THE INT. WHAL. COMMN., 47TH MEETING (1995) at 19, Section 8.1.1 (1996).

indicate any illegally harvested whales, the United States introduced a resolution at both the 1995 and 1996 meeting relating to verification of the legality of whale harvests, including through the use of DNA testing of whale meat stockpiles.[263] DNA studies were introduced as a potential component of the RMS in 1996.[264]

In 1997 several Members argued that "an effective observation and inspection scheme" in the RMS must verify the legality of whale meat and whale products through DNA sampling.[265] At this meeting, Japan encouraged the use of DNA testing and submitted two documents summarizing the results of a genetic analysis taken from whale products on the Japanese retail market, although it argued that the IWC could not require DNA testing.[266] Norway refused to make its genetic database generally available, but it was willing to verify whether the DNA sequences from samples originated by whales legally caught by Norway.[267] The Members memorialized this trend toward cooperation in DNA tracking in its 1997 Resolution on Improved Monitoring of Whale Product Stockpiles.[268]

B. Catch Documentation in International Fisheries Agreements

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). While CCAMLR itself requires the Commission to gather and analyze data and Members must provide "information about their harvesting activities,"[269]the Commission has recently enacted the Catch Documentation Scheme, because IUU fishing for toothfish continues to undermine seriously CCAMLR's conservation and management objectives. The Catch Documentation Scheme[270]provides a means to monitor the international trade in toothfish by identifying the origins of toothfish imported or exported from the territories of Contracting Parties and determining whether it was caught consistently with CCAMLR.[271] Conservation Measure 170/XVIII requires the operator of the vessel, every time a flag ship lands or transships toothfish, to complete a catch document that lists the catch by weight; location of the catch; date(s) of catch, landing and transshipment; and information about the receiver of the catch.[272] The Parties must also ensure that each shipment of toothfish imported into its territory, regardless of whether the toothfish was caught inside or outside the Convention Area, is accompanied by the export-validated toothfish catch document that accounts for all the toothfish contained in the shipment.[273] The catch document requirements extend beyond the initial catch and import. Exporters, too, must include the amount of toothfish in the shipment and the names and addresses of the importer and exporter, and then obtain validation of the catch document

[263] *Id.* at 27, Section 12.4 & app. 7, IWC resolution 1995-6; REPORT OF THE INT. WHAL. COMMN., 48th Meeting (1996) at 49, App. 3, IWC resolution 1996-3 (1997).
[264] REPORT OF THE INT. WHAL. COMMN., 48th Meeting (1996) at Section 12.1(a) (1997)
[265] REPORT OF THE INT. WHAL. COMMN., 48th Meeting (1997) at Section 12.1.2 (1998).
[266] *Id.*
[267] *Id.* at 34, Section 12.1.2(b)
[268] *Id.* at 46, Resolution 1997-2; appendix 2
[269] CCAMLR, at art. IX.1, IX.2, XX.2.
[270] Conservation Measure 170/XVIII Catch Documentation Scheme for *Dissostichus* spp., May 2000, available at <http://www.ccamlr.org/English/e_pubs/e_measures/e_cm99_00/e_cm99_00page8.htm>.
[271] Id. at para. 1.
[272] Conservation Measure 170/XVIII, para. 6 adopted at CCAMLR XVIII, 1999.
[273] *Id.* at para. 8.

from the responsible authority of the exporting State.[274] Finally, each Party must "ensure that its customs authorities or other appropriate officials request and examine the import documentation of each shipment," and the Parties must grant authority to these officials to examine the catch itself in order to verify the documentation.[275]

To ensure that this important information is used to ensure overall compliance with CCAMLR Conservation Measures, CCAMLR requires the master of each ship to "convey to the Flag State of the vessel by the most rapid electronic means available" the catch information and a relevant catch document number (a number assigned to each document by the Flag State prior to issuance).[276] Then the Flag State must issue a confirmation number that indicates that the catch complies with the vessel's authorization to fish.[277]

At the eighteenth meeting of the Commission, Norway embraced the proposed catch documentation scheme and called for immediate and stringent enforcement.[278] Japan was much more cautious, stating, "the [catch documentation] scheme should not be a trade restriction . . . [it] should be effective and not be problematic to Member States in regard to its implementation."[279] In the end, however, the catch documentation scheme was adopted and ratified by all members, including Japan. The Commission views the Catch Documentation Scheme as an important trade-based regulatory measure to enforce compliance with CCAMLR.[280] It believes that it will force compliance by those who persist in IUU fishing by documenting all toothfish landed, transshipped or imported.

The Convention for the Establishment of an Inter-American Tropical Tuna Commission (IATTC)/Agreement on the International Dolphin Conservation Program (AIDCP). IATTC's Commission must collect statistics and reports concerning fish catches and operations of fishing boats from vessels or persons engaged in fisheries within the IATTC's jurisdiction.[281] To fulfill this mandate, fishermen must record, on a daily basis, the location of the vessel, the intended catch (tuna or other fish), the number of sets, the time sets were made, and the total catch of each species.[282] At the end of each trip, abstracts are made of the "pertinent information" for analysis by Commission staff, who make weekly estimates of total catch based on the abstracts.[283]

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[274] *Id.* at Annex 170A, para. A11.
[275] *Id*. at para. 10. In 1997 the members reaffirmed their commitment to inspection of catch and documentation at every port. Conservation Measure 119/XVII (1998), and Conservation Measure 147/XVII (1998) (all licensed fishing vessels landing or transshipping catch must notify the Port State 72 hours in advance of arrival and submit to inspection upon arrival), *available at* www.ccamlr.org/English/e_pubs/e_measures/e_cm98_99/.
[276] Conservation Measure 170/XVIII, *supra* note 272, at Annex 170/A, para. A2(iv).
[277] *Id.* at para. A3.
[278] Report of the Eighteenth Meeting of the Commission, CCAMLR XVIII, para. 5.18 (1999) *available at* www.ccamlr.org/English/e_pubs/e_cc_reports_online/e_cc_1999_online/ ("Norway believes that the introduction of the Catch Documentation Scheme is a strong signal to poachers and will be a valuable instrument to be used in combating [impermissible] fishing.").
[279] *Id.* at para. 5.22.
[280] *CCAMLR Newsletter,* (CCAMLR), December 1998, at section 5.
[281] IATTC, at art. II, para. 6.
[282] CLIFFORD L. PETERSON AND WILLIAM H. BAYLIFF, IATTC SPECIAL REPORT NO. 5: ORGANIZATION, FUNCTIONS, AND ACHIEVEMENTS OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION 12 (1985).
[283] *Id.*

Almost fifty years later, IATTC Parties developed the AIDCP to eliminate dolphin mortality in purse-seine tuna fisheries.[284] To achieve that goal, the Parties must assess bycatch of juvenile yellowfin tuna and to track and verify tuna catches.[285] In addition, the AIDCP's National Scientific Advisory Committees (NATSACs) will receive and review relevant data, conduct scientific reviews and assessments, and ensure that the Parties exchange data.[286] In addition, the AIDCP's International Review Panel (IRP) analyzes reports regarding all tuna-fishing trips made by vessels covered by the AIDCP.[287]Finally, Annex IX requires the Parties to "establish a program to track and verify tuna harvested."[288]

To implement these obligations, the Parties adopted a uniform catch documentation scheme that requires an onboard observer to complete a Tuna Tracking Form (TTF). The "sole purpose" of the system is "to enable dolphin safe tuna to be distinguished from non-dolphin safe tuna from the time it was caught to the time it is ready for retail sale."[289] To accomplish this goal, the onboard observer documents the catch quantity and designates the catch as dolphin safe or non-dolphin safe in the TTF, which is reviewed and signed by the observer and the captain of the vessel.[290]TTFs, which are given a unique number, are transmitted to the appropriate authority of the State where the tuna is going to be processed, even if different from the country of landing, and a copy is sent by the national authority to the Secretariat within ten days after receipt of the TTF.[291] Parties must develop their own tracking and verification procedures for storage, processing and marketing, but these procedures must ensure that dolphin safe tuna is kept separate from non-dolphin safe tuna, and that dolphin safe tuna is certified so that "lot numbers of processed tuna can be traced back to the corresponding TTF number."[292]

The International Convention for the Conservation of Atlantic Tunas (ICCAT). ICCAT, like the IATTC, requires its Commission to collect and analyze data necessary to manage and conserve populations of fish managed by ICCAT and make recommendations based on that data.[293] The Commission thus created a detailed catch documentation scheme that requires flag states to gather data and submit it to the Executive Secretary each year. The data must be separated into two groups: Task I (annual catch by gear, region and flag) and Task II (catch and fishing effort statistics for each species by small area).[294]If a country fails to submit the data in the proper format by the recommended deadlines, the Commission may identify that

[284] AIDCP, at Preamble.
[285] *Id.* at arts. IV(2), V(1)(f). *See also* arts. VI(1), VII.
[286] *Id*. at Annex VI(1)(a), (d), (e).
[287] *Id*. at Annexes VII(1)(b), IV, Section II(2).
[288] *Id*. at Annex IX.
[289]International Dolphin Conservation Program, System for Tracking and Verifying Tuna, Section 2, available at www.iattc.org/IDCP.htm.
[290] *Id.* at Section 3.
[291] *Id.*
[292] *Id.* at Section 6.
[293] ICCAT, at Preamble, arts. VII(f), VIII(1)(a).
[294] Annex 1 to the Request for Atlantic Tuna Statistics, Circular sent to all countries operating fisheries in the Atlantic Ocean and Adjacent Seas from the ICCAT Secretary on 28 January 2000, *available at* http://www.iccat.es/reqdata.html.

country's fishing activities as "illegal, unregulated and unreported" and take "appropriate action," including trade restrictions, against that a country.[295]

In addition, the Commission adopted catch documentation schemes for certain species or fisheries. For example, Parties may import bluefin tuna only if it is accompanied a "Bluefin Statistical Document" (BFSD) or a Bluefin Tuna Re-export Certificate.[296] The BFSD must include the name of the country issuing the document, the names of the exporter and importer, the area where the fish was harvested, the gear used, fish weight, and point of export.[297]

Moreover, the Parties now require Parties and entities that land or import frozen tunas and tuna-like fish products to collect and examine import or landing data and associated information regarding catches by longline vessels and submit it to the Commission (*e.g.*, the name of the vessel that caught the tuna, flag state of the vessel, species of tuna, names of the owners of the vessel, area of catch, product weight, registration, and point of export). ICCAT's Compliance Committee will review the information, identify those large-scale longline vessels fishing for tuna and tuna-like species in a manner that diminishes the effectiveness of ICCAT conservation and management measures, and determine what action, including trade restrictions, are necessary.[298]

Based on the Bluefin tuna scheme, at its most recent meeting, ICCAT Parties agreed to undertake and implement a statistical document scheme for both swordfish and bigeye tuna.[299]

Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (NAFO). NAFO Parties must give the Scientific Council any available statistical and scientific information,"[300]and NAFO's Scientific Council compiles data, disseminates information, and makes recommendations to the Parties. To this end, NAFO has adopted "Conservation and Enforcement Measures" that establish the types of information that must be included in a vessel's log books, and which must be produced for inspection upon demand.[301] These measures includes documentation of gear to be used and catch quotas for each species and subspecies.[302]Compliance with these regulations must be recorded by the master of every fishing

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[295] *Id.*
[296] ICCAT Recommendation 98-18 *Concerning the ICCAT Bluefin Statistical Document Program: For Frozen Bluefin Tuna Products* (adopted November 1992, entered into force July 23, 1993); *Recommendation Concerning the Implementation of the ICCAT Bluefin Tuna Statistical Document Program on Re-export* (adopted November 1997, entered into force July 13, 1998); Resolution 93-2 *Concerning Validation by a Governmental Official of the ICCAT Bluefin Tuna Statistical Document* (adopted November 1993); Resolution 94-4 *Interpretation and Application of the ICCAT Bluefin Tuna Statistical Document Program* (adopted November-December 1994). All ICCAT recommendations and resolutions are available at: http://www.iccat.es.
[297] ICCAT Recommendation 98-18*Concerning the ICCAT Bluefin Statistical Document Program: For Frozen Bluefin Tuna Products* (adopted November 1992, entered into force July 23, 1993); Resolution 94-4 *Interpretation and Application of the ICCAT Bluefin Tuna Statistical Document Program* (adopted November-December 1994).
[298] ICCAT Resolution 98-18 *Concerning the Unregulated and Unreported Catches of Tuna by Large-Scale Longline Vessels in the Convention Area* (adopted November 1998), available at: http://www.iccat.es.
[299] FIS Hot News, November 28, 2000.
[300] NAFO Convention, at art. VI, para. 3.
[301] *NAFO Conservation and Enforcement Measures*, *supra* note 55, at Part V, Schedules II & III.
[302] *Id*. at Part V, Schedules I-VI.

vessel authorized by a Contracting Party, and documentation of that compliance must then be submitted to any inspectors authorized by NAFO.[303]

Forum Fisheries Agency (FFA). The FFA tracks stocks and fishing efforts recognizing a "common interest in the conservation and optimum utilisation of the living marine resources of the South Pacific region."[304] To this end, the FFA must collect, analyze, evaluate and disseminate relevant statistical and biological information,[305] and FFA Members must "co-operat[e] in surveillance and enforcement" of the Convention,"[306] and give the FFA catch and effort statistics.[307] In 1982, FFA Members adopted a licensing regime which includes requirements for reporting catch and maintaining logbooks.[308]

U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement). The Straddling and Migratory Fish Stocks Agreement requires parties to establish cooperative mechanisms for effective monitoring, control, surveillance and enforcement, including standards for collection, reporting, verification and exchange of data.[309] Through cooperative agreements, the Parties must adopt or ratify requirements for recording and verifying catch of target and non-target species, fishing effort and other relevant fisheries data, supervision of transshipment, and monitoring of landed catches and market statistics.[310]

Annex I of the Convention includes detailed reporting requirements, including the following:

> • timely collection, compilation and analysis of data . . . in such a way as to enable statistically meaningful analysis for the purposes of fishery resource conservation and management.
>
> • catch and effort must be recorded "in sufficient detail to facilitate effective stock assessment," in logbooks which record catch according to the location, time and date the catch was made, and record the species, length, weight, and gender of the individuals taken.
>
> • the flag State must collect this information and compile it separately according to operational method, and submit it "in an agreed format and in a timely manner to the relevant subregional or regional fisheries management organization or arrangement where one exists.

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[303] *Id*.
[304] FFA Convention, at Preamble.
[305] *Id.* at art. VII(a).
[306] *Id.* at art. V(1)(c)(a).
[307] *Id*. at art. IX(a).
[308] *See* U.N. FAO, *Technical Consultation,* available at http://www.fao.org/docrep/x0625e/x0625e15.htm; Canada-South Pacific Ocean Development Program, available at (http://www.c-spodp.org/Articles/Tuna%20Management.htm).
[309] Straddling and Migratory Fish Stocks Agreement, at art. X.
[310] *Id.* at art. 18(3)(e), (f).

• States must develop a system for verification which will include, *inter alia*, port sampling.

Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention). The MHLC Convention requires the Commission to adopt standards for the collection, verification and timely exchange and reporting of data, as well as to compile and distribute statistical data.[311] Members of the Commission must provide the Commission with statistical, biological, and other data.[312]

Convention for the Conservation of Southern Bluefin Tuna (CCSBT). The CCSBT calls on the Parties to "expeditiously" provide the Commission with scientific information and catch and effort statistics.[313] The CCSBT's Commission must collect information relating to statistical data and consider regulatory measures for conservation, management and optimum utilisation of southern bluefin tuna, including setting and allocating total allowable catch limits.[314]

The Commission has also recently approved[315]a catch documentation scheme called the trade information scheme (TIS). The TIS requires all southern bluefin tuna to be accompanied by a statistical document, which must be validated by an authorized official of the flag country/fishing entity of the vessel that harvested the tuna.[316] Without the statistical document, Member countries may not import southern bluefin tuna.[317] The statistical document must include the name and registration of the vessel, means of harvest, name of the processing facility, among other types of information.[318] Significantly, the statistical document imposes requirements on fishers, exporters, and processors.[319] Re-export requires a re-export document. Japan supports the TIS and observed with approval that CCSBT modeled its TIS on ICCAT's plan for bluefin and swordfish.[320]

U.N. Food and Agricultural Organization Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement). The FAO Compliance Agreement requires a Party to ensure that each fishing vessel entitled to fly its flag shall provide it with certain information,

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[311] MHLC Convention, at art. 10(1)(d)-(e).
[312] *Id.* at art. 23(2)(a).
[313] CCSBT, at art. V(1)-(2).
[314] *Id*. at arts. VIII(1)(a), (2)(b), (4).
[315] Report of the Sixth Annual Meeting, First Part (Nov. 29-30, 1999). para. 18, available at <http://www.home.aone.net.au/ccsbt/CCSBT6(1)HTML/CCSBT6(1)MAIN.html> (hereinafter Report of CCSBT 6).
[316] Report of CCSBT 6, at Attachment M, "Southern Bluefin Tuna Statistical Document Program," paras. 1.1, 3.1, 3.2.
[317] *Id.* at para. 1.1.
[318] *Id.* at Annex 1 to Attachment M.
[319] *Id.*.
[320] *Opening Statement by Japan at the Sixth Annual Meeting of CCSBT* (Nov. 1999) CCSBT 6/Attachment C, at paras. 7, 16 available at <http://www.home.aone.net.au/ccsbt/CCSBT6(1)HTML/CCSBT(6)1AtchC.html> (hereinafter Japan's Opening Statement at CCSBT 6.)

such as catch and landings.[321] The FAO Code also encourages the States to ensure that "timely, complete and reliable statistics on catch and fishing effort are collected and maintained" in sufficient detail and updated regularly to allow sound statistical analysis.[322]

The FAO's related Technical Guidelines for Responsible Fishing[323]create a detailed framework for implementing this and other obligations. The Guidelines recommend that States establish monitoring systems for fishing vessels,[324]and issue "authorization to fish" permits which will, among other things, impose an obligation to record catch and discard data.[325] In addition, fishing vessel owners, managers and fishers should include a fishing log that records composition and weight of the fish catch and catch landed by species and weight.[326]

VI. Inspection

A. Rationale for Inspection

The authority to board and inspect fishing vessels at any given time is an integral part of the effectiveness of any fisheries agreement to enforce its provisions. For that reason, very detailed inspection provisions are commonplace within the fisheries agreements surveyed. In general, inspectors have authority to inspect within its jurisdiction any fishing vessel, including the fish, fishing gear, fish samples, and all relevant documents, including fishing logbooks and cargo manifest (in the case of a mother ship or carrier vessel), to verify compliance with the agreement's measures. The master of the vessel must cooperate with the inspector. Parties must act on reports of apparent violations, collaborate with the Contracting Parties to facilitate judicial or other proceedings arising from reports of inspectors acting under these arrangements, and notify the Commission of any action taken to address the violation. In some cases, such as with ICCAT, when a Party's vessel enters, lands, or transhipsits catches in foreign ports, it may send its own inspectors to inspect their own vessels, provided that the port State has invited the flag State inspector.

Further, NAFO, CCAMLR, and ICCAT require Contracting Parties to inspect a Non-Contracting Party vessel that has fished in the Convention Area and enters a port of a Contracting Party. The vessel cannot not land or transship any fish until the inspection occurs. If the inspection reveals any fish regulated by the agreement and caught within the Convention Area, then all contracting Parties must prohibit that vessel from landings and transshipments of all fish from that vessel.

Moreover, the Straddling and Migratory Fish Stocks Agreement and NAFO allow for boarding and inspection on the high seas by non-flag States. In negotiations of the Straddling and Migratory Fish Stocks Agreement, Australia, New Zealand, and Norway stated that these

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[321] FAO Compliance Agreement, at art. III(7).
[322] FAO Code, at para. 7.4.4.
[323] FAO Technical Guidelines for Responsible Fisheries, Oct. 31, 1995, M-40, ISBN 92-5-103914-3 [hereinafter Guidelines], *available at* http://www.fao.org.fi/agreem/codecond/codecon.asp.
[324] Guidelines, *supra* note 106 at Section 2.2, para. 10.
[325] *Id*. at Section 3.1, para. 22.
[326] *Id*. at Section 6.3, para. 83.

inspection and enforcement provisions break "significant new ground" and are "a significant development in international law."[327] Indeed, this development has now been incorporated in the MHLC Convention.

In addition to the agreements surveyed in this paper, many other fisheries agreements also provide for inspection and boarding of fishing vessels. some of these agreements, including the 1965 US/USSR Agreement Relating to Fishing for King Crab[328]and the 1994 Central Bering Sea Convention on the Conservation and Management of Pollack Resources,[329]allow boarding and inspection by non-flag States on the high seas. Other fisheries agreements allow not only for boarding and inspection, but also for search, seizure and arrest of vessels by non-flag States on the high seas, including the 1882 Convention for Regulating the Police of North Sea Fisheries of 1882,[330]the International Convention for High Seas Fisheries of the North Pacific,[331]and the 1965 Japan-USSR Northwest Pacific Fisheries Agreement,[332]and the 1992 North Pacific Anadromous Stocks Convention.[333]

B. Inspection in International Fisheries Agreements

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). CCAMLR declares from the outset its intention to develop a system of on-board inspections.[334] Under CCAMLR's System of Inspection, Members designate inspectors, who must be certified nationals of the designating member, qualified to make the assessments, and able to communicate in the language of the Flag State of the vessels on which they carry out their activities.[335] Vessels used by these inspectors must fly a pennant approved by the Commission,[336]and the inspectors themselves must carry similarly-approved uniform identification. Inspectors must complete an inspection report form, document any incidents of non-compliance, and take photos and/or video-recordings of the non-compliance. The form, along with the evidence, must be forwarded within fifteen days to the Contracting Party, which in turn must submit the information to the CCAMLR Executive Secretary, who will then submit

[327] U.N. Doc. A/50/PV.80, at 10, 18 (1995); U.N. Doc. A/50/PV.81, at 20 (1995).
[328] US/USSR Agreement Relating to Fishing for King Crab, U.S.-U.S.S.R., Feb. 5, 1965, para. 3, 541 U.N.T.S. 97, T.I.A.S. No. 5752.
[329] Central Bering Sea Convention on the Conservation and Management of Pollack Resources, June 16, 1994, arts. 11(6)-(7), *reprinted in* 34 INTERNATIONAL LEGAL MATERIALS 67 (1994).
[330] Convention for Regulating the Police of North Sea Fisheries, Mar. 6, 1882, art. 30, 9 MARTENS NOUVEAU RECUEIL GENERAL DES TRAITES (ser. 2) 556, *reprinted in* 1 UN LEGISLATIVE SERIES, LAWS AND REGULATIONS ON THE REGIME OF THE HIGH SEAS 179 (1951).
[331] International Convention for High Seas Fisheries of the North Pacific, May 9, 1952, arts. 10(a)-(b), 205 U.N.T.S. 77.
[332] Convention Concerning the High Seas Fisheries of the Northwest Pacific Ocean, Dec. 12, 1956, Japan-U.S.S.R., art. 7(2), 53 AMERICAN JOURNAL OF INTERNATIONAL LAW 763 (1959 (unofficial English translation).
[333] Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean, Feb. 11, 1992, LAW OF THE SEA BULLETIN, No. 22 (1993) at 21.
[334] CCAMLR, at art. XXIV.
[335] *CCAMLR System of Inspection*, *supra* note 31, at Section I(d).
[336] *Id*. at Section II(b)

the information to the Flag State of the offending vessel.[337]The flag State must then "take steps to prosecute and, if necessary, impose sanctions."[338]

Moreover, the Contracting Parties must inspect transhipments and landings of vessels of non-Contracting Parties who have been found fishing in the Convention Area when such a vessel enters a party's port. In fact, such vessels are prohibited from landing or transhipping any fish until logbooks, other documents, catch, and gear have been inspected.[339]They will be prohibited from landing or transhipping the fish unless the vessel establishes that the fish were caught outside the Convention Area or in compliance with all relevant CCAMLR Conservation Measures.[340]

Inter-American Tropical Tuna Convention (IATTC)/Agreement on International Dolphin Conservation Program (AIDCP). The AIDCP requires an annual certification and inspection program to ensure compliance with the Agreement's obligations for gear and training,[341]and maintains an onboard observer program.[342] To complement those programs, the AIDCP has also adopted the System for Tracking and Verifying Tuna, which requires "periodic audits and spot checks for caught, landed and processed tuna products."[343]

International Convention for the Conservation of Atlantic Tuna (ICCAT). ICCAT has established a Port Inspection Scheme under which inspectors, appointed by the Contracting Parties, monitor compliance with the Commission's conservation measures for all ICCAT species, at their own ports, without discrimination.[344] In the case of an apparent violation by a foreign fishing vessel, the inspector must prepare a report to the Commission and sign the report in the presence of the master of the vessel, who shall be entitled to add any observations to the report. Copies of the form must be sent to the flag state of the vessel and to the ICCAT Secretariat within 10 days. In the case of a violation by a domestic vessel, domestic procedures will be followed for documentation, which must also provide the same quality of information as the standard ICCAT form.[345]

An inspector may examine the fish, fishing gear, fish samples, and all relevant documents, including fishing logbooks and cargo manifest (in the case of a mother ship or carrier vessel), to verify compliance with ICCAT measures. The master of the vessel is required to cooperate with the inspector.[346] Parties must act on reports of apparent violations, collaborate with the Contracting Parties to facilitate judicial or other proceedings arising from reports of inspectors acting under these arrangements, and notify the Commission of any action taken to

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[337] *Id*. at Section IV.
[338] *Id.* at Section XI.
[339] CCAMLR Conservation Measure 118/VII, *Scheme to Promote Compliance by Non_Contracting Party Vessels with CCAMLR Conservation Measures*, at para. 4
[340] *Id.* at para. 5.
[341] *Id*. at art. XVI, para . 1
[342] *Id*. at Annex III.
[343] International Dolphin Conservation Program, *supra* note 289, at Section 7.
[344] ICCAT Recommendation 97-10, *Port Inspections* adopted at the 15th Regular Meeting (Madrid, November 1997), entered into force June 13, 1998, available at: http://www.iccat.es/.
[345] *Id.* at para. 2.
[346] *Id.* at para. 3.

address the violation.[347] When a Party's vessel enters, lands, or transhipsthe their catches in foreign ports, it may send its own inspectors to inspect their own vessels at the invitation of the port state in which the inspection shall be executed.[348]

Further, like NAFO and CCAMLR, ICCAT requires its Contracting Parties to inspect the documents, log books, fishing gear, catch on board and any other matter relating to a vessel's activities in the ICCAT Convention Area when a Non_Contracting Party vessel found fishing in the Convention Area enters a port of an ICCAT Contracting Party. The vessel cannot not land or transship any fish until the inspection occurs. If the inspection reveals any fish regulated by ICCAT and caught within the Convention Areas, then all contracting Parties must prohibit that vessel from landings and transshipments of all fish from that vessel. Provided that the vessel has applied ICCAT's Conservation and Enforcement Measures, at least for certain species, this prohibition will not apply.[349]

Northwest Atlantic Fisheries Organization (NAFO). The NAFO Parties must implement a scheme of joint international enforcement that "shall include provision for the reciprocal rights of boarding and inspection by the Contracting Parties" on the high seas.[350] To implement that obligation, the Parties have adopted various "Conservation and Enforcement Measures," with explicit instructions for inspectors, such as the size and appearance of "inspection pennants" on their ships; the badges they must present when boarding; the questions they must ask; the procedures to follow if any misreporting and/or misrepresentation is discovered, or if there is any resistance to the request to inspect; the reports they must file with the Executive Secretary subsequent to inspection; and the scope of the inspectors' power.[351]

Inspectors are required to make a visual and, if necessary, photographic examination of all fishing gear, catch, and on-board documentation, and to record their observations on a specified form. Any observed violations of the allowances and regulations for the vessel issued pursuant to the Agreement must be reported to the appropriate authority of the Contracting Party and to the Executive Secretary of NAFO "as soon as possible."[352] The vessel must then be re-inspected for verification of the violation within three days.[353] Finally, compilations of inspection reports and action taken with respect to any reported violations must be provided annually to the Executive Secretary of NAFO.[354]

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[347] *Id.* at para. 4, 5.
[348] *Id.* at para. 7.
[349] ICCAT Recommendation 98-11 *Concerning the Ban on Landings and Transhipments of Vessels from Non-Contracting Parties Identified as Having Committed a Serious Infringement adopted by the Commission* (adopted at its Eleventh Special Meeting, November 1998, entered into force June 21, 1999).
[350] NAFO Convention, at art. XVIII. Article XVII refers to inspection and boarding in the "Regulatory Area." The NAFO Convention defines the "Regulatory Area" as "that part of the Convention area which lies beyond the areas in which coastal states exercise fisheries jurisdiction." *Id.* at art. I(3).
[351] *NAFO Conservation and Enforcement Measures*, *supra* note 55, at Part IV.
[352] *Id.*
[353] *Id*. at Part IV, paras. 7-10. The document clearly states, however, that inspection is for documentation purposes only; inspectors do not have enforcement authority. *Id*. at Part IV, para. 1(vi).
[354] *Id*. at Part IV, para. 16.

NAFO also has non-party inspection provisions almost identical to those of CCAMLR and ICCAT. When a Non_Contracting Party vessel found fishing in the Regulatory Area enters a port of a any NAFO Contracting Party, the vessel cannot not land or transship any fish until the Contracting Party must inspect the vessel's documents, log books, fishing gear, catch on board and any other matter relating to the vessel's activities in the NAFO Regulatory Area. If the inspection reveals any fish regulated by NAFO and caught within the Regulatory Area, then all Contracting Parties must prohibit that vessel from landings and transshipments of all fish from that vessel. Provided that the vessel has applied NAFO's Conservation and Enforcement Measures, at least for certain species, this prohibition does not apply.[355]

Forum Fisheries Agency. The Parties to the FFA Convention agreed to cooperate with respect to surveillance and enforcement.[356] To that end, they created the Niue Treaty On Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region, which allows Parties to extend its fisheries surveillance and law enforcement activities to the territorial sea and archipelagic waters of that Party, upon elaboration of a Subsidiary Agreement.[357] In such circumstances, the conditions and method of stopping, inspecting, detaining, directing to port and seizing vessels shall be governed by the national laws and regulations applicable in the State in whose territorial sea or archipelagic waters the fisheries surveillance or law enforcement activity was carried out.[358]

U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement). The Straddling and Migratory Fish Stocks Agreement creates global minimum standards for inspections and boarding with arrangements for management of straddling and highly migratory fish stocks. Perhaps the most important rule is this: in any high seas area covered by another fisheries management organization or arrangement, a Party to the Straddling and Migratory Fish Stocks Agreement may authorize inspectors to board and inspect fishing vessels of any Party to the Agreement, regardless of whether that Party is also a member of the other fisheries management organization or arrangement, for the purposes of ensuring compliance with the management and conservation measures.[359] Parties must establish procedures for boarding and inspection, but if they do not, then inspections must be carried out in accordance with Article 22 of the Convention.[360] In addition, Parties to the Agreement may take enforcement actions against vessels under circumstances (*see* Section VII, "Compliance").

Article 22 requires authorized inspectors to use clearly marked inspection boats and to present his/her credentials upon boarding a fishing vessel to the master of a vessel. The inspector must notify the flag State and may inspect the vessel, license, gear, records and catch.

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[355] *NAFO Scheme to Promote Compliance by Non-Party Vessels, supra* note 66, at paras. 9-11.
[356] FFA Convention, at art. V(2)(c).
[357] Niue Treaty On Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region, art. VI(1), available at: http://www.oceanlaw.net/texts/niue.htm
[358] *Id.* art. VI(1).
[359] Straddling and Migratory Fish Stocks Agreement, at art. 21(1).
[360] *Id.* at arts. 21(2)-(3). These procedures "shall be consistent with . . . the basic procedures set out in Article 22." *Id*. at art. 21(2). In addition, prior to initiating the inspection scheme, Parties must notify the States which fish in the specified waters. *Id.* at art. 21(4).

Upon completion of the inspection, the inspector must prepare a report and present a copy to the master of the vessel and to the relevant authority of the flag State.[361] If the master of a vessel refuses to comply, the flag State must "direct the master of the vessel to submit immediately to boarding and inspection and, if the master does not comply with this order, must suspend the vessel's authorization to fish and order the vessel to return immediately to port."[362]

Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention). The MHLC Convention provisions for inspection and boarding incorporates those of the Straddling and Migratory Fish Stocks Agreement. The Commission must create procedures for inspecting and boarding vessels on the high seas. If the Commission cannot agree on provisions, then Articles 21 and 22 of the Straddling and Migratory Fish Stocks Agreement apply.[363] Each member of the Commission must ensure that fishing vessels flying its flag accept boarding by duly authorized inspectors in accordance with such procedures. Such duly authorized inspectors shall comply with the procedures for boarding and inspection.

In addition, port states may inspect documents, fishing gear and catch on board a fishing vessel that voluntarily enters one of its ports or offshore terminals. The Commission may also adopt regulations empowering national authorities to prohibit landings and transhipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of conservation and management measures adopted by the Commission.[364]

Convention for the Conservation of Southern Bluefin Tuna (CCSBT). The CCSBT currently imposes no inspection requirements, although it emphasizes the need for compliance: "Each Party shall take all action necessary to ensure the enforcement of this Convention."[365]

FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement). The FAO Technical Guidelines for Responsible Fisheries urge port States and flag States to train and certify inspectors who will have the authority to stop fishing vessels, board them, and inspect all catches and catch documentation to ensure compliance with national and international agreements.[366]

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[361] *Id*. at arts. 22(1)-(2). Article 22(1)(f) also requires inspectors to "avoid the use of force except when and to the degree necessary to ensure the safety of the inspectors and where the inspectors are obstructed in the execution of their duties." This grants greater authority to inspectors than other inspection schemes, which do not allow the use of force under any circumstances except in self-defense. *See, e.g.*, *NAFO Conservation and Enforcement Measures*, *supra* note 55, at part IV, para. 5(iv): "The use of arms in relation to inspections is prohibited.")

[362] *Id*. at 22(4). A related issue is the requirement that any agreement which gives rise to an inspection scheme must include requirements for licensing, gear, catch documentation, etc., such that the authorized inspectors have specific baselines for judging compliance.

[363] MHLC Convention, at arts. 26(1)-(2).

[364] *Id.* at arts. 27(2)-(3).

[365] *Id*. at art. 5, para. 1.

[366] FAO Code, Sections 4.2, 5.2.

VII. Compliance

A. Rationale for Compliance

International agreements to conserve and manage fisheries have little effect without adequate compliance regimes. The ongoing struggle to protect tuna, toothfish and species from IUU fishing highlights the problem. As a result, many fisheries agreements require parties to adopt national legislation that makes breaches of the agreement a punishable offence and to prosecute and sanction violators under these laws in a way that deters future violations (*see, e.g.,* CCAMLR, FAO Compliance Agreement, Straddling and Migratory Fish Stocks Agreement, MHLC Convention). Other national compliance provisions include denials of fishing privileges until the vessel in violation of fishing laws complies with sanctions imposed by any Party (CCAMLR, Straddling and Migratory Fish Stocks Agreement, MHLC Convention).

The inadequacy of national measures alone, however, has led to the creation of international compliance mechanisms that include trade restrictions and loss or reduction of fishing privileges for the countries whose vessels fish inconsistently with an agreement's conservation measures (CCAMLR, CCSBT, ICCAT, NAFO). Under some agreements (FFA, AIDCP, ICCAT), vessels may also lose their licenses. Many agreements now also include prohibitions against landings and transshipments by non-party vessels sighted in the agreement area and against landings or transshipments of illegal catch (CCAMLR, NAFO, MHLC Convention, ICCAT). Party's also subject themselves to economic repercussions when their vessels violate an agreement's conservation measures.

Because the national compliance measures of the fisheries agreements reviewed in this paper are similar to those in Article IX(3)-(4) of the ICRW, this section focuses on the international compliance measures or nondiscretionary compliance obligations that deny fishing privileges to noncomplying vessels. These compliance mechanisms are forward looking because they directly address the problem of IUU fishing. Interestingly, the parties have often created such mechanisms recommendations rather than actual treaty text, as in ICCAT and CCAMLR (the Standing Committee of the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) provides another example). As compliance is the mechanism that ties the other MCS provisions together, an effective observation and inspection" scheme in the RMS must include some international compliance regime.

B. Compliance in the IWC

The IWC has done very little in the way of compliance, which at present consists mainly of detailing infractions at IWC meetings. Even then, IWC Members argue over the meaning of "infraction." The recent past is no better than earlier days. In 1949, the Infractions and Penalties Subcommittee rejected a proposal to establish uniform penalties as impracticable.[367]As early as 1951, the IWC expressed frustration at certain Member' who were failing to enforce the convention and unwilling to reduce quotas or allocate them on a scientific basis.[368] The

[367] BIRNIE, *supra* note 19, at 211.
[368] *Id.* at 218.

weaknesses inherent to the exclusively national enforcement system under the Convention become apparent in the face of inaccurate infraction reports showing a suspiciously large number of whales taken only slightly bigger than minimum size restrictions.[369]

In fact, the perceived ineffectiveness of IWC compliance activities for whaling infractions increased non-compliance in other areas of the convention, such as failure to submit catch reports on time.[370] The IWC could only except "mildly remonstrate" Brazil for failing to submit its report for five years.[371] Moreover, the IWC chose to interpret Articles IX (3) and (4) to mean that *if* prosecution commences, it should be undertaken by the appropriate government, not that prosecution *must* occur whenever an infraction of the Convention was observed by a party.[372]

More recently, regular, detailed reports of infractions have exposed both major and minor violations of the convention which has led to increased scrutiny and transparency of national enforcement efforts. Japan and Norway have reported high-profile whale meat smuggling events, St. Vincent and the Grenadines has reported killing calves and mother humpback whales in contravention of the Schedule, and Denmark (for Greenland) has reported illegal kills of Sei whales that were mistaken as fin whales, which can be legally killed.

C. Compliance Regimes of International Fisheries Agreements

Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). CCAMLR requires Members to take appropriate measures to ensure compliance and inform the Commission of measures taken and sanctions that have been imposed for violations.[373] In addition, flag States must prosecute and impose sanctions based on evidence of noncompliance found during inspections,[374]and, if an inspection uncovers noncompliance with a Conservation Measures,[375]the Flag State must take steps to prosecute and impose sanctions.[376]Any sanction must ensure compliance and deprive offenders of any economic benefit gained from their illegal activities.[377]Such vessels cannot resume fishing operations until they have complied with the sanctions.[378]The Secretariat must remain informed of charges, proceedings relating to prosecutions, results of prosecutions and sanctions imposed.[379] CCAMLR's Standing Committee on Observation and Inspection (SCOI) reviews steps taken by

[369] *Id.* at 226.
[370] *Id.* at 234.
[371] *Id.*
[372] *Id.* at 246.
[373] CCAMLR, at arts. XXI.2, XXI.3.
[374] Id. at Art. XXIV.2(a).
[375] Member Parties are required to conduct inspections of their licensed vessels to verify compliance with the conditions of the license and with CCAMLR's Conservation Measures. Conservation Measure 119/XVII, *supra* note 22, at para. 4.
[376] *CCAMLR System of Inspection, supra* note 31, at Section XI.
[377] Id. at Section XIII.
[378] Id. at Section XIV.
[379] Id. at Section XII.

Members to enforce compliance with Conservation Measures. SCOI also reports and advises the Commission on those activities.[380]

In addition, CCAMLR prohibits transshipments of fish from a non-Contracting Party vessel which has been sighted engaging in fishing activities in the Convention Area because it presumes that such vessels undermine the effectiveness of CCAMLR's Conservation Measures.[381] As described above, when such a vessel enters a port of any Contracting party, an inspector knowledgeable of CCAMLR Conservation Measures must inspect it, including its documents, logbooks, fishing gear, catch on board and any other matter including information from a vessel monitoring system.[382]Finally, vessels landing or transshipping toothfish at ports of Contracting Parties must be inspected and in the event that evidence exists that the vessel fished in contravention of the CCAMLR Conservation Measures, the catch may not be landed or transshipped.[383]Flag states must investigate such infringements and apply sanctions in accordance with national legislation.[384]CCAMLR's compliance regime is made complete with the inclusion of the Catch Documentation Scheme (described above), CCAMLR licensing requirements,[385]marking of fishing vessels and fishing gear,[386]and vessel monitoring systems.[387]

Inter-American Tropical Tuna Convention (IATTC)/Agreement on International Dolphin Conservation Program (AIDCP). Like other agreements, the AIDCP requires Parties to adopt national laws to ensure compliance with the Agreement.[388]Parties with vessels found in violation of AIDCP's terms must impose sanctions "of sufficient gravity as to be effective in securing compliance [and] deprive offenders of the benefits accruing from their illegal activities."[389]Sanctions can include denial, suspension or withdrawal of the authorization to fish.[390]

The AIDCP also requires Parties to create incentives for vessel captains to reduce incidental dolphin mortality with the goal of eliminating dolphin mortality in the Agreement Area.[391] By creating incentives for the captain, the AIDCP hopes to give vessel captains a stake in dolphin safety and increasing compliance AIDCP conservation measures.

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[380] Standing Committee on Observation and Inspection (SCOI) Terms of Reference as adopted at CCAMLR VI para. 94(J), available at <http://www.ccamlr.org/English/e_basic_docs/e_basic_docs_online/e_part8.htm>.
[381] CCAMLR Measure 118/XVII, Scheme to Promote Compliance by Non_Contracting Party Vessels with CCAMLR Conservation Measures, at paras 1, 6.
[382] Id. at para. 4.
[383] CCAMLR Conservation Measure 147/XVIII *Provisions to ensure Compliance with CCAMLR Conservation Measures by Vessels, including Cooperation between Contracting Parties*, paragraph 1 and 3, (visited September 14, 2000), available at <http://www.ccamlr.org/English/e_pubs/e_measures/e_am99_00/e_sm99_00page5.htm>.
[384] Id. at para. 3.
[385] CCAMLR Conservation Measure 119/XVII, *supra* note 22.
[386] CCAMLR Conservation Measure 146/XVII, *supra* note 27.
[387] CCAMLR Conservation Measure 148/XVII *Automated Satellite-Linked Vessel Monitoring Systems (VMS)*, available at <http://www.ccamlr.org/English/e_pubs/e_measures/e_cm99_00/e_cm99_00page6.htm>.
[388] AIDCP, at Art. VII.
[389] *Id.* at Art. XVI.2.
[390] *Id.*
[391] *Id.* at Art. V.1(a) and Art. XVI.3.

Nonetheless, the AIDCP also imposes limits on dolphin mortalities, and, if a Party's fleet meets or exceeds the total DML distributed to it, that Party's fleet must stop fishing for tuna that associate with dolphins.[392] In addition, vessels that exceed their DMLs receive far fewer DMLs in the following year than they would have received.[393] A vessel may not have its initial DML increased if it sets on dolphins after reaching its DML or without a DML, knowingly sets on banned dolphin stock, makes a night set, uses explosives during any fishing phase involving dolphins, or fishes without an observer.[394]Vessels involved in repeat violations may lose their right to a DML completely and captains identified as continual offenders may be removed from the list of qualified captains.[395]

The AIDCP also established the International Review Panel, which reports to Member Parties on compliance issues in the Agreement Area and makes recommendations concerning possible infractions.[396] Environmental and industry representatives play an active and participatory role in determining possible infractions of the Agreement through the AIDCP's International Review Panel.[397]

Similarly, the IATTC's Permanent Working Group on Compliance Committee, which allows non-governmental organizations (NGOs), owners of vessels, non-Party representatives, and intergovernmental organizations to participate as observers, monitors compliance with the Commission's conservation and management measures and makes recommendations to address non-compliance.[398] Already, this Committee has provided recommendations on which the Commission has acted relating to monitoring compliance with Commission resolutions on bigeye tuna and fish-aggregating devices and on yellowfin tuna.[399] To limit fishing capacity and reduce the risk of over-capacity and over-fishing, the Commission has also recently adopted resolutions prohibiting the use of tender vessels for fish aggregating devices (FADs) and prohibiting the at-sea transfer of purse seine caught tuna.[400]

International Convention for the Conservation of Atlantic Tuna (ICCAT). ICCAT too requires its Contracting Parties to take all action necessary to ensure enforcement of its terms and to inform its Commission of how this has been accomplished.[401] In addition, ICCAT requires the Parties collaborate with each other to adopt a system of international enforcement to be applied to the Convention area.[402]

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[392] Personal Communication with J. Allison Routt, Fishery Policy Analyst, NOAA (2 October 2000).
[393] Id. at Annex IV, para. III.6.
[394] *Id.* at para. III.4.
[395] *Id.* at paras. I.2, I.3, I.7.
[396] *Id.* at Annex VII, para. 12(d).
[397] *Id.* at Annex VII.2.
[398] *See, e.g.,* Compliance Resolution Jun 00 Resolution on Compliance (June 2000) (IATTC acting on recommendations of the Permanent Working Group).
[399] *Id.*
[400] *International Agreements Concerning Living Marine Resources of Interest to NOAA* (2000), at 41, available at: http://www.nmfs.noaa.gov/2000int'lagrmts.PDF [hereinafter Agreements of Interest to NOAA]
[401] ICCAT, at art. IX.1.
[402] ICCAT, at art. IX.3.

Pursuant to this authority, ICCAT has established a compliance regime for infringing ICCAT conservation measures for bluefin tuna, North Atlantic swordfish, and South Atlantic Swordfish. For example, Members may receive penalties for exceeding certain quotas in ICCAT's Agreement Area, including one-for-one reductions, additional quota penalties, and trade restrictions.[403]A binding recommendation in 1999 requires Members to prohibit the importation of bluefin tuna from Equatorial Guinea, an ICCAT Member.[404]

Further, Members must report their infractions and tell the Commission what actions they intend to take to correct the problem.[405] For example, in 1999 Libya and Morocco, both ICCAT Members, reported over-harvesting and the ICCAT Commission is expected to reduce their quotas.[406]

ICCAT also imposes trade restrictions against Non-Members. For example, non-discriminatory trade restrictive measures have been in force since 1997 against Belize and Honduras for their bluefin tuna fishing activities that diminish the effectiveness of ICCAT's Conservation Measures.[407]ICCAT also sent letters to the Turkey, Denmark (on behalf of the Faroe Islands), and Iceland to request information on their bluefin tuna fishing activities,[408]and letters of warning to Vanuatu and Kenya for their swordfish fishing activities.[409]

Furthermore, a 1998 Commission resolution establishes a process to identify both Members and non-Members that fish for ICCAT species in a manner that diminishes the effectiveness of its conservation and management measures.[410] ICCAT identifies countries and requests those countries to take all necessary measures to not diminish the effectiveness of ICCAT.[411] If countries fail to take appropriate measures, ICCAT will revoke vessel registrations or licenses of Member countries and recommend trade restrictive measures for both Members

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[403] ICCAT Recommendation 96-14 Regarding Compliance in the Bluefin Tuna and North Atlantic Swordfish Fisheries Recommendation adopted at the Tenth Special Meeting (San Sebastian, November 1996), entered into force August 4, 1997; Recommendation 97-8 Regarding Compliance in the South Atlantic Swordfish Fishery, applies this recommendation to South Atlantic Swordfish, Recommendation adopted at the Fifteenth Annual Meeting (Madrid, November 1997), entered into force Sep. 28, 1998).

[404] ICCAT Recommendation 99-10 Regarding Equatorial Guinea pursuant to the 1996 Recommendation regarding Compliance for Bluefin and North Atlantic Swordfish Fisheries.

[405] ICCAT Recommendation 96-14 Regarding Compliance in the Bluefin and North Atlantic Swordfish Fisheries Recommendation adopted at the Tenth Special Meeting (San Sebastian, November 1996), entered into force August 4, 1997.

[406] Agreements of Interest to NOAA*, supra* note 400, at 18.

[407] ICCAT Recommendation 99-8 Regarding Belize and Honduras pursuant to the 1995 Swordfish Action Plan Resolution. ICCAT recommended to its Members to prohibit the importation of Atlantic bluefin tuna products and swordfish and swordfish products in any form from these countries.

[408] Letter to Turkey Requesting Information on Eastern Atlantic and Mediterranean Bluefin Tuna Coverage, *in* ICCAT REPORT 1998-99, Appendix 13 to Annex 7, at page 134; Letter to Denmark (on behalf of Faroe Islands) Requesting Information on Eastern Atlantic and Mediterranean Bluefin Tuna Coverage, *in* ICCAT REPORT 1998-99, Appendix 15 to Annex 7, at page 136; Letter to Iceland Requesting Information on Eastern Atlantic and Mediterranean Bluefin Tuna Coverage, *in* ICCAT REPORT 1998-99, Appendix 16 to Annex 7, at page 137.

[409] Agreements of Interest to NOAA*, supra* note 73, at 16.

[410] ICCAT Resolution 98-18 Concerning the Unregulated and Unreported Catches of Tuna by Large-Scale Longline Vessels in the Convention Area (adopted by the Commission at its Eleventh Special Meeting (Santiago de Campostela Spain, November 1998), officially transmitted to Contracting Parties December 22, 1998.

[411] *Id.*

and non-Members.[412] In 1999, a number of non-Member and Member countries were identified and the appropriate requests were made.[413]

ICCAT also monitors activities of non-Members through its Permanent Working Group and activities of Members through its Compliance Committee.[414]ICCAT also recently improved its transparency by granting observer status at its meetings, requiring lower participation fees, and allowing participation by several NGOs for the first time at its 1999 meeting.[415]

Northwest Atlantic Fisheries Organization (NAFO). NAFO Parties must not allow their vessels or other entities to receive transshipments or landings from non-Contracting Party vessels that have been reported fishing in the Regulatory Area or acting in contravention of NAFO Conservation and Enforcement Measures.[416]Parties notified that their vessels have committed an infringement must take prompt action to investigate, including obtaining evidence and boarding the vessel, if possible.[417]Parties must take judicial or administrative action just as they would if the violations occurred in national waters.[418]Parties must keep the Executive Secretary notified of dispositions of infringement cases including the current status of the case, any penalties imposed and an explanation if no action has been taken.[419]

The NAFO Convention requires a scheme of joint international enforcement as modified by NAFO's Conservation Measures, including provisions for reciprocal rights of boarding, inspection, and Flag State prosecution and sanctions in the case of violations.[420] In addition, when a vessel inspection reveals an infringement, the inspecting Party must notify the authorities of the Contracting Party for the vessel inspected.[421]When an observer identifies an infringement, the observer must report it to a NAFO inspection vessel within twenty-four hours.[422]

NAFO also permits reductions in quotas for subsequent years against NAFO Parties that exceed their quotas.[423]A Party may be required to "compensate for damages" (such as reductions in quotas) to the stocks caused by its excessive catch if that Party uses prohibited gear, fishes in a closed area, or continues a directed fishery after its prohibition.[424]

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[412] *Id.*
[413] Agreements of Interest to NOAA, *supra* note 400, at 16 and 18. Non-Member countries that were identified include Belize, Cambodia, Honduras, Kenya, the Philippines, Sierra Leone, Singapore and St. Vincent and the Grenadines. Member countries identified were Equatorial Guinea, Republic of Guinea, and Trinidad and Tobago.
[414] *Id.* at 13-20.
[415] *Id.* at 19.
[416] NAFO Conservation Measures, *supra* note 102, at Part I, section J; NAFO Non-Party Compliance, *supra* note 50, at paragraphs 10 and 11.
[417] *Id.* at Part IV, section 7.
[418] *Id.*
[419] *Id*. at Part IV, section 17 (a)(i) and (b).
[420] NAFO Convention, at art. XVIII.
[421] *NAFO Conservation and Enforcement Measures, supra* note 55, at Part IV, section 6(i).
[422] *Id*. at Part VI, Section 5.
[423] *Id.* at Part I, Section C.2(a).
[424] *Id.* at Part I, Section C.2(b).

Depending upon the nature of the infringement, an inspector may require the master to cease fishing until the authorities of the Party for the inspected vessel are satisfied that the infringement will not be repeated.[425]When serious violations occur,[426]the Party of the vessel in question must inspect the vessel within seventy-two hours.[427] Depending upon the gravity of the violations, the inspector may seal the vessel's hold for eventual dockside inspection to secure evidence,[428]and the vessel may be required to proceed to a nearby port for a thorough inspection.[429]

Fisheries Forum Agency (FFA). The Forum Fisheries Agency controls IUU fishing activities in FFA Members' EEZs so that developing nations in particular can secure those resources for their own peoples.[430]The FFA functions to advise and assist its Members in exercising their sovereign rights over living marine resources in their EEZs.[431]Reinforcement of Members' capacities to achieve compliance of fishing regulations within their EEZs by foreign fishing operators embodies not only a goal, but also the very purpose of the FFA and its convention.[432] Consequently, compliance schemes focus on international implementation rather than national implementation. However, the FFA exists to assist its members in realizing the goal of the Convention. Accordingly, it encourages compliance through observers, surveillance, data dissemination, assisting Members to define their maritime boundaries and training on enforcement and technological developments.[433]

The FFA also achieves compliance through a mechanism similar to the one Norway proposed at CCAMLR-XVIII. A vessel must have good standing on the FFA's Regional Register of Foreign Fishing Vessels to qualify for a license to fish in a Member's EEZ.[434]Withdrawal of good standing status means banning the vessel from obtaining a license and that ban remains with vessel even after selling or renaming the vessel.[435]The FFA believes this system ensures a high degree of compliance by foreign fishing vessels.[436]

U.N. Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling and Migratory Fish Stocks Agreement). The Straddling and Migratory Fish Stocks Agreement contains very significant new developments regarding compliance with conservation measures. States are directed to deter activities of vessels fishing that are undermining the effectiveness of conservation and management measures for straddling fish

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[425] *Id.* at Part IV, Section 6 (iv)-(vii).
[426] *E.g.,* misreporting catch, violations of mesh size or hail systems, interference with satellite tracking systems, preventing an inspector or observer from doing his duty, or conducting directed fishing for a prohibited stock. *Id.* at Part IV, Section 9.
[427] *Id.* at Part IV, Section 10 (i).
[428] *Id.* at Part IV, Section 10 (iv).
[429] *Id.* at Part IV, Section 10 (ii).
[430] FFA Convention, at Preamble.
[431] *Forum Fisheries Agency*, available at <http://www.oceanlaw.net/directory/ffa.htm>.
[432] *FFA MCS*, *supra* note 17.
[433] *Id. See also* FFA Convention, art. VII. *See also* previous sections in the paper on observer schemes, vessel registration, and VMS.
[434] *FFA Minimum Terms and Conditions*, *supra* note 17, at Section 3.1.
[435] *FFA MCS, supra* note 17.
[436] *Id.*

stocks or highly migratory species.[437]They must also ensure that their flag vessels comply with these measures, enforce them wherever violations may occur, and prohibit vessels without licenses from fishing.[438]With regard to its vessels that may have violated rules of a regional fisheries agreement, Flag States must institute proceedings without delay and may detain vessels if necessary.[439]Once established that a vessel has engaged in serious violations, it may not commence fishing on the high seas again until it has complied with all sanctions imposed by the Flag State.[440]Sanctions must be severe enough to ensure future compliance, discourage violations and must deprive offenders of any benefits accruing from their illegal activities.[441]

While those provisions may be standard for fisheries agreements, the Straddling and Migratory Fish Stocks Agreement breaks new ground regarding enforcement by non-Flag States on the high seas. For example, in the high seas area covered by a fisheries arrangement or organization, a Party may board and inspect the vessel of another Party to the Agreement, regardless of whether it is a member of the other fisheries arrangement or organization, for purposes of enforcing measures for straddling and highly migratory fish stocks.[442] If the inspecting State finds "clear grounds" for believing that a vessel has engaged in activity contrary to such conservation and enforcement measures, it may secure evidence and must notify the flag State.[443] The flag State then must take enforcement action or authorize the inspecting State to take action.[444]

However, if the inspecting State finds "clear grounds" for believing that the vessel has committed a "serious violation," such as fishing without a valid license, in a closed area, and with prohibited gear, among other things, then the inspecting State may bring the vessel "without delay to the nearest appropriate port.[445]These provisions apply even if the vessel has left the area covered by the fisheries agreement or organization.[446] Any further action taken by the inspecting State must be proportionate to the seriousness of the violation,[447]and the inspecting State shall, at the request of the Flag State, release the vessel to the Flag State, which must then take action against the violator.[448] Nonetheless, these provisions are clearly far-reaching and assist States that take seriously their obligations under fisheries agreements and which also want to prevent IUU fishing.

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[437] SFS Convention, *supra* note 117, at Part IV, Art. 17.4.
[438] *Id.* at arts. 18(1), 18(3)(b)(ii), 19(1).
[439] *Id.* at art. 19(1)(d).
[440] *Id.* at art. 19(1)(e).
[441] *Id.* at art. 19(2).
[442] *Id.* at art. 21(1).
[443] *Id.* at art. 21(5).
[444] *Id.* at arts. 21(6)-(7).
[445] *Id.* at art. 21(8). Serious violations include fishing without a license; failing to maintain accurate records of catch and catch-related data; fishing in a closed area; directed fishing for a stock subject to a moratorium; using prohibited gear; falsifying or concealing markings, identify, or registration of a vessel; concealing, tampering, or disposing of evidence; multiple violations of conservation and management measures; and other violations as may be specified by the relevant fisheries management organization or arrangement. *Id.*
[446] *Id.* at art. 21(14).
[447] *Id.* at art. 21(16).
[448] *Id.* at art. 21(12).

In addition, fisheries agreements and organizations must create rules for boarding and inspecting consistent with these; if they do not, then these provisions apply.[449] The Straddling and Migratory Fish Stocks Agreement also allows port States to prohibit landings and transshipments of catch that has been taken in a manner that undermines the effectiveness of conservation and management measures on the high seas.[450]

Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (MHLC Convention). This Convention requires Members to adopt measures to ensure that its vessels do not undermine the effectiveness of the Convention's conservation and management measures.[451]Members must implement the Convention and regulate its fishing vessels in the Convention Area,[452]and inform the MHLC Commission of measures they have adopted.[453]

Members must investigate any alleged violation by its nationals at the request of any other Member and report the progress and outcome of the investigation to the Commission for MHLC.[454] Upon receipt of evidence that a violation occurred, Members must refer the case to its authorities, proceed in accordance with its national laws and, when appropriate, detain the vessel concerned.[455]

Vessels flying a Members' flag that have been involved in serious violations of the Convention or any conservation or management measures adopted by the Commission must cease fishing activities in the Convention Area until they have complied with all sanctions imposed.[456] Sanctions must be adequately severe to secure compliance, discourage violations and deprive offenders of the benefits accrued from their illegal activities.[457]Members must ensure that vessels flying its flag allow inspectors to board.[458]When a vessel of any other Member enters a port of another Member, the port State may inspect documents, fishing gear and catch on board the vessel.[459]It may also prohibit landings and transshipments if it determines that the catch was taken in contravention of the terms of the MHLC Convention.[460]

When developing criteria for total allowable catch, the Commission must take into account the record of compliance by the participants with conservation and management measures.[461]Members may take action to deter fishing vessels that have undermined the effectiveness of measures adopted by the Commission from fishing in the Convention

[449] *Id.* at arts. 21(2)-(3).
[450] *Id.* at art. 23(3).
[451] MHLC Convention, at art. 24(1)(a).
[452] *Id.* at arts. 23(1), 23(4), 24(1)(a).
[453] *Id.* at art. 23(3).
[454] *Id.* at arts. 23(5), 25(2).
[455] *Id.* at art. 25(3).
[456] *Id.* at art. 25(4).
[457] *Id.* at art. 25(7).
[458] *Id.* at art. 26(3).
[459] *Id.* at art. 27(2).
[460] *Id.* at art. 27(3).
[461] *Id.* at art. 10(3)(f).

Area.[462]The MHLC Commission may also develop procedures so that trade measures may be taken against any State whose fishing vessels undermine the effectiveness of the Agreement.[463]

Convention for the Conservation of Southern Bluefin Tuna (CCSBT). CCSBT requires Parties to take all necessary action to ensure enforcement and compliance of its terms.[464]Parties must encourage its nationals not to associate with SBT fisheries of non-Parties if such association would contravene the objectives of the Convention.[465]Parties must also prevent vessels registered under their laws from transferring their registration to avoid compliance,[466]and must take action consistent with its domestic laws to deter SBT fishing by non-Parties.[467]

A major concern of the CCSBT Commission, however, centers on IUU fishing for Southern Bluefin Tuna (SBT) by non-Member vessels.[468] The Commission thus prepared an Action Plan to seek cooperation of non-Member countries and entities in the effective management of SBT.[469] The Action Plan requires the Commission to contact Non-Member States whose vessels act in contravention of the CCSBT and ask that they rectify their fishing activities.[470] It also requires the Commission to recommend to Members that they take non-discriminatory trade restrictive measures on SBT products in any form against such Parties who fail to rectify their fishing activities.[471]

U.N. Food and Agricultural Organization Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement). The FAO Compliance Agreement requires Parties to enact legislation to prohibit acts that contravene the Agreement.[472] Sanctions must be significant enough to ensure compliance and must deprive offenders of any benefits accruing from their illegal activities.[473]Possible sanctions must include denial, suspension or withdrawal of the authorization to fish on the high seas.[474]Parties must cooperate by exchanging evidence relating to IUU fishing.[475]

The FAO Compliance Agreement requires Parties to take necessary measures to ensure that fishing vessels entitled to fly their flags "do not engage in any activity that undermines the effectiveness of international conservation and management measures."[476]No Party may authorize a vessel to fish on the high seas if that vessel was previously registered to another Party

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[462] *Id.* at arts. 25(11), 32(1).
[463] *Id.* at art. 25(12).
[464] CCSBT, at art. 5(1).
[465] *Id.* at art. 15(2).
[466] *Id.* at art. 15(3).
[467] *Id.* at art. 15(4).
[468] Personal Communication with Campbell McGregor, CCSBT Executive Secretary (Oct. 3, 2000).
[469] *Id. See* Action Plan, *supra* note .
[470] Action Plan, *supra* note 51, at b and c.
[471] Action Plan, at f.
[472] FAO Compliance Agreement, at art. III.8.
[473] *Id.*
[474] *Id.*
[475] *Id.* at art. V.1.
[476] *Id*. at art. III(1)(a).

and was found to have undermined the effectiveness of international conservation and management measures.[477] Similarly, parties may not authorize fishing by vessels previously registered to non-Party States and whose authorization to fish was suspended or withdrawn.[478] Lastly, when a vessel enters the port of a Party other than its own flag state, and that Party believes the vessel has undermined the effectiveness of international conservation and management measures, it must notify the flag State of this information.[479]

VIII. Paying for MCS Programs

In discussions on the revision of Chapter V of the Schedule to the ICRW, the issue of the "user pays" principle has been raised repeatedly. The Chairman's Report of the 1997 meeting of the IWC records "strong support from some delegations to a proposal that since commercial whaling was a profit-making operation like any other commercial business, the cost of regulation and inspection should be borne by the business conducting the whaling activity and not the IWC or the host country."[480]

Both the Rio Declaration on Environment and Development and Agenda 21 endorse the "user pays" principle and the belief that the cost of natural resource management should be included as an obligation of doing business.[481] Likewise, the FAO has reviewed the financing of fisheries research and management, and stated that an underlying concept gaining wider acceptance is that financing should come from those who benefit, including fisheries participants in the case of managed fisheries.[482]

NAFO has fully recognized this principle by calling on Contracting Parties to pay salary costs for its 100% observer coverage program.[483] In addition, Parties shall pay all costs associated with the satellite tracking system. Under the AIDCP, IATTC members and vessel operators pay the costs of the on-board observer scheme.[484] Purse seine vessels fishing in the

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[477] *Id.* at art. III(5). If the period for suspension by the first Party has expired, or if no authorization to fish on the high seas has been withdrawn by another party during the last three years, a party may license the vessel to fish on the high seas. *Id.* at art. III(5)(a)(i) and (ii).

[478] *Id.* at art. III.5(b). However, if the ownership of the vessel in question has changed and sufficient evidence exists to demonstrate that the former owner has "no further legal, beneficial or financial interest in, or control of, the fishing vessel" then the authorization prohibitions do not apply. *Id.* at art. III(5)(c). A party may also authorize fishing by such a vessel if the Party determines that the use of the vessel for high seas fishing will not undermine the object and purpose of the FAO Compliance Agreement. *Id.* at art. III(5)(d).

[479] *Id*. at art. V(2).

[480] Chairman's Report of the Forty-ninth Annual Meeting (1996-1997), at 33 (1998).

[481] Principle 16 of the Rio Declaration states, "National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment." Rio Declaration on Environment and Development, U.N. Doc.A/CONF.151/26 (1992). Under Agenda 21, States agree to "incorporate environmental costs in the decisions of producers and consumers" and to incorporate more fully "social and environmental costs into economic activities…[to] contribute towards the prevention of environmental degradation." Agenda 21, U.N. Doc. A/CONF.151/26, paras 8.31(a), (b) (1992). *See also* Agenda 21, paras. 2.14, 30.3.

[482] FAO, State of world fisheries and Aquaculture (1998).

[483] NAFO Program of Observation and Satellite Tracking, Part VI, paras. A.6, B.2.

[484] AIDCP, at Annex II, para. 11.

Area of the Agreement are assessed a fee of US$14 per ton of carrying capacity. These fees are collected by the governments and transmitted to the Secretariat of the IATTC. This amount covers some 70% of the costs of the observer program; the remaining 30% of the costs are covered by the member governments.

IX. Conclusion

Many of the monitoring, control, and surveillance (MCS) mechanisms common to fisheries agreements are very old. For example, the IWC has contemplated observers on whaling vessels since the 1960s. The 1982 Nauru Agreement concerning Cooperation in the Management of Fisheries of Common Interest specifically calls for the use of observers on foreign fishing boats in the waters of member states (generally those in the FFA). Many agreements have used vessel registration for decades as well. At the same time, the approach to some MCS mechanisms is relatively new. While vessel reporting is not new, the use of vessel monitoring systems (VMSs) through the use satellite technology to do so is. The Straddling and Migratory Fish Stocks Agreement provides new powers to non-flag States to seize boats on the high seas.

Nonetheless, the agreements reviewed in this paper are all taking comprehensive MCS measures to protect valuable fish populations. They use not one or two mechanisms, but rather the whole range of MCS mechanisms. CCAMLR, IATTC, ICCAT, NAFO and others require vessel registration, VMS, observation, inspection, and catch documentation. As such, the parties to these agreements and organizations are controlling and monitoring fishing activities from the time a vessel leaves the dock until after the entry into the market of the fish catch. They enforce compliance with these measures by establishing rules and process for imposing trade restrictions, reducing quotas, and taking other action against parties and non-parties. Further, enforcement powers are increasingly granted to non-flag States to board and inspect vessels on the high seas.

The conditions that led the parties to these agreements and organizations to adopt the range of MCS mechanisms also exist within the whale fishery. Just as those parties manage and conserve populations that have declined, so too the IWC manages and conserves whale populations that have declined. Just as those parties seek to control IUU fishing, so too the IWC has constantly battled "pirate" whaling. Just as those parties seek to verify the legality of the catch as it enters and moves through the market, so too the IWC parties must verify the legality of whale meat in the market to ensure the legality of the whale harvest. Strong compliance regimes that use trade restrictions, quota reductions, and other strategies, ensure that individuals adhere to these MCS mechanisms and that parties take action to ensure that their vessels and nationals adhere to them. As the parties to these agreements have discovered, rules without enforcement rarely breeds compliance. The full range of MCS mechanisms thus seems ideal, even necessary, for inclusion in the RMS's "effective inspection and observation scheme."